GUIDE INFORMATION FOR CANADIAN CERTIFIED EQUIPMENT THE CANADIAN WHITE BOOK 2013

UL's and ULC's General Guide Information is updated daily. To confirm the current status of any UL or ULC record, consult UL's Online Certifications Directory at www.ul.com / database and ULC's Online Directories at www.ulc.ca.

www.ulc.ca

www.ul.com

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ULC Standards are prepared using the consensus principle by individuals who provide a balanced representation of interests relevant to the subject area on a national basis."

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UL is accredited by the Standards Council of Canada (SCC) as both a Certification Organization (CO) and a Testing Organization (TO). With its SCC accreditations, UL certifies products with the UL Mark for Canada for the Canadian marketplace in accordance with Canadian standards and codes. UL's CO accreditation for Canada encompasses all UL global testing facilities, services, product categories and programs.

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http://ul.com/global/eng/pages/corporate/contactus

Guide Information for Canadian Certified Equipment THE CANADIAN WHITE BOOK

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UL Information Services

Introduction

The Canadian White Book contains all the product categories for all ULC and cUL Certifications, that are applicable to any discipline Canadian Code inspector so that they can access the General Guide Information for any ULC or cUL Certification by cross-referencing the product identity on the Listing Mark to the indexes in this book.

The Canadian White Book contains the General Guide Information for all the product categories in ULC's Building Materials, Burglar and Fire Alarm Systems and Components, Fire Protection Equipment, Fire Resistance, Firestop Systems and Components, and Heating and Ventilating Equipment and Flammable Liquids and Gases Equipment Directories. In addition, this book contains all the product categories Certified for Canada applicable to an inspector from following UL directories: UL's Electrical Construction Equipment, Hazardous Locations Equipment, Electrical Appliance and Utilization Equipment, Fire Protection Equipment, Fire Resistance, Building Materials, Heating, Cooling, Ventilating and Cooking Equipment, Mechanical Equipment and Associated Products, Flammable and Combustible Liquids and Gases Equipment, Marine Products and Plumbing and Associated Products. Attention is directed specifically to the General Guide Information following the product category headings that describe limitations of the Listings, such as current, voltage and horsepower and installation provisions. The scope and sizes and ratings specified in the General Guide Information is intended to indicate the current range of Listings, and is not necessarily indicative of the limitations for Listing.

The White Book does not contain the names of companies authorized to use the ULC or cUL Mark, nor does it contain specific identification of products authorized to bear the ULC or cUL Mark. Such information appears in the appropriate ULC or UL directory as tabulated above.

Only those products bearing the appropriate ULC or Canadian UL Mark and the company's name, trade name, trademark or other authorized identification should be considered as being covered by ULC or UL's Listing or Classification and Follow-Up Service. The ULC or Canadian UL Mark provides evidence of listing or labeling, which may be required by installation codes or standards.

Many of the products bearing the UL Mark for Canada incorporate components that bear the UL Recognized Component Mark for Canada c𝑹𝑼. The Recognized Component Mark is applicable to components that are incomplete in construction features or limited in performance capabilities. **The Recognized Component Mark does not provide evidence of approval, listing or labeling which may be required by installation codes or standards.**

The Canadian White Book contains General Guide Information in effect as of May 24, 2013. Information on new or revised product categories established after the effective date will be found in UL's Online Certifications Directory at www.ul.com/database and ULC's Online Directories at www.ulc.ca and will appear in the next annual Canadian White Book.

Look for the ULC or UL Mark for Canada
Identification of Products Certified to Canadian Requirements

The symbols (ULC) and c(UL) are registered in Canada. Subject to the terms of ULC's or UL's Follow-Up Service Agreement, companies are permitted to use the symbol (ULC) or c(UL) on products which are Listed or Classified for Canada and which comply with applicable Canadian requirements. for Canada and which comply with applicable Canadian requirements.

ULC and UL provide a service for the Listing or Classification of products that have been determined to meet the appropriate Canadian requirements. For those products which comply with the Canadian requirements, the ULC Mark or UL Mark for Canada may be applied to products.

The product name as indicated in this Directory under each of the product categories is generally included as part of the ULC Mark or UL Mark for Canada text, but may be omitted when, in ULC's or UL's opinion, the use of the name is unnecessary and the ULC Mark or the UL Mark for Canada is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar processes.

A separable ULC Mark or UL Mark for Canada (not part of a nameplate and in the form of decals, stickers or labels) will always include the following four elements: ULC's symbol or UL's symbol , the word "LISTED"" or "CLASSIFIED", the product or category name, and a control or issue number assigned by ULC or UL.

The complete ULC Mark or UL Mark for Canada will appear on the product unless otherwise indicated in the General Guide Information for a specific product category.

When a ULC or Canadian UL Listed product is of such a size, shape, material or surface texture that, in ULC's or UL's opinion, it is impossible to apply legibly the complete marking to the product, the complete ULC Mark or UL Listing Mark for Canada will appear on the smallest unit container in which the product is packaged. In these cases ULC or UL may authorize the use of the ULC symbol or the UL symbol on the product in addition to the complete ULC Mark or UL Mark for Canada on the package.

When a ULC or UL Classified product is of such a size, shape, material or surface texture that, in ULC's or UL's opinion, it is impossible to apply legibly the complete marking to the product, the complete ULC or UL Classification Mark for Canada will appear on the smallest unit container in which the product is packaged. In these cases there shall be no reference to ULC or UL on the product.

Refer to the General Guide Information for each product category for additional information on the specific UL Mark for Canada for the products in the category.

ULC Certification Services and Marks

Identification of ULC Listed Products
Identification des produits inscrits ULC

A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) will always include these four elements:

Une marque d'inscription distincte (ne faisant pas partie d'une plaque signalétique et sous forme de décalques, d'autocollants ou de labels) comprendra toujours les quatre éléments suivants:

- **ULC's symbol**

  le symbole ULC;

- **the word "LISTED",**

  le mot "INSCRIT";

LISTED

- **the product or category name,**

  and control, issue or serial number assigned by ULC

  e nom du produit ou de la catégorie;

  et le numéro de contrôle, d'émission ou de série assigné par ULC.

The complete Listing Mark will appear on the smallest unit container in which the product is packaged when the product is of such a size that only the symbol can be applied to the product, or when the product size, shape, material or surface texture makes it impossible to apply any legible marking to the product.

La marque d'inscription complète figurera sur la plus petite unité de contenant dans lequel le produit est emballé lorsqu'il est d'une dimension telle que seul le symbole peut y être appliqué, ou lorsque la taille, la forme, le matériau ou la texture superficielle rend impossible l'application d'une marque lisible sur le produit.

Only those devices and materials which actually bear the label are covered by the Label Service.

Seuls les dispositifs et les matériaux qui sont vraiment porteurs du label ULC sont couverts par le Service Label.

Special Inspection (SI) Service
Service d'inspection (SI) spéciale

This service is conducted by ULC, which offers on site safety evaluations of installed products conducted by ULC technical staff for compliance with the Model Code for Field Evaluations, CSA SPE 1000. ULC's Special Inspection label (above) can be applied to the product in the field if the product complies with CSA SPE 1000.

Ce service est effectué par le personnel technique ULC qui offre des évaluations de sécurité sur place de produits installés, aux fins de conformité avec le code type des évaluations en situations opérationnelles, CSA SPE 1000. Le label ULC d'inspection spéciale (ci après) peut être appliqué au produit sur place si le produit est conforme au code type CSA SPE 1000.

ULC Certificate Services
Services de Certificat

Under the Burglar and Fire Alarm System Certificate Service, Underwriters Laboratories of Canada authorizes the issuance of the Laboratories' certificates to installations which the listed installing/ monitoring company represents to be in compliance with requirements established for the class. The certificate indicates the classification, extent, location of equipment, period covered by the certificate, and name of the installing/monitoring or service company.

Le service de certificat de système d'alarme antivol et de réseau avertisseur d'incendie des Laboratoires des assureurs du Canada autorise l'émission de certificats des Laboratoires à des installations que les entreprises d'installation et de surveillance inscrites déclarent être conformes aux exigences établies pour la catégorie. Le certificat indique la classification, la portée, l'emplacement de l'équipement, la période couverte par le certificat et le nom de l'entreprise d'installation, de surveillance ou de service.

Underwriters Laboratories of Canada conducts countercheck field examinations of representative installations of each listed installing company. If installations not in compliance with the Laboratories' requirements are found as a result of field examinations, they are subject to correction by the listed installing company or cancellation of the certificate.

Les Laboratoires des assureurs du Canada effectuent sur place des contre vérifications des installations représentatives de chaque entreprise d'installation inscrite. S'il appert que des installations ne sont pas en conformité avec les exigences des Laboratoires à la suite de ces vérifications sur place, elles pourront faire l'objet d'une correction de la part de l'entreprise d'installation ou d'une annulation de leur certificat.

Only those field installations which actually bear the certificate are covered by the Certificate Service Program.

Seules les installations sur place, porteuses du certificat, sont couvertes par le programme du service de certificat.

Reference should be made to the sections covering Burglary Protection Equipment and Systems along with Fire and Alarm Equipment and Systems listings for a description of the applicable Certificate Service.

On devra se référer aux sections couvrant les inscriptions de l'équipement et des systèmes antivol de même que de l'équipement et des systèmes de lutte contre les incendies et d'alarme incendie pour une description du service de certificat applicable.

UL Certification Services
Services et marques de certification UL

Listing Service
Service d'inscription

UL's Listing Service is the most familiar form of UL's product safety certification programs. The UL Listing Mark on a product means that the manufacturer has demonstrated the ability to produce a product that complies with appropriate requirements regarding reasonably foreseeable risks associated with the product. The UL Listing Mark for Canada is applied to products for use in Canada that have been investigated to Canadian safety requirements. The UL Listing Mark for Canada and the U.S. is applied to products for use in the U.S. and Canada that have been investigated to the requirements of both countries. UL conducts Follow-Up Service as an audit of the means the manufacturer uses to determine continued compliance of the product with UL's requirements.

Le service d'inscription UL est la forme la plus connue des programmes UL de certification de la sécurité des produits. La marque d'inscription UL sur un produit signifie que le fabricant a fait preuve de compétence pour fabriquer un produit qui tient compte des exigences essentielles relativement aux risques raisonnablement prévisibles liés au produit. La marque d'inscription UL pour le Canada est appliquée sur des produits destinés au marché canadien et ayant fait l'objet d'une étude quant aux exigences canadiennes en matière de sécurité. La marque d'inscription UL pour le Canada et les États Unis est appliquée sur les produits destinés au Canada et aux États Unis et ayant fait l'objet d'une étude respectant les exigences de ces deux pays. UL effectue un service de suivi comme vérification des moyens que le fabricant prend pour assurer la conformité continue du produit avec les exigences UL.

UL Listing Mark
Marque d'inscription UL

UL Listing Mark for Canada and the United States
Marque d'inscription UL pour le Canada et les États Unis

UL Listing Mark for Canada
Marque d'inscription UL pour le Canada

Identification of cUL Listed Gas-Fired Products
Identification des produits alimentés au gaz inscrits cUL

The UL Listing Mark for Canada for gas-fired products certified to Canadian standards includes: (1) the UL symbol with the words "GAS-FIRED" above the UL symbol as shown below; (2) the word "LISTED" below the UL symbol; (3) the appropriate Canadian standard used to evaluate the product (i.e., CSA, CGA, CAN); and (4) a control number assigned by UL.

Au Canada, la marque d'inscription UL pour les produits alimentés au gaz certifiés selon les normes du Canada comprend : (1) le symbole UL avec les mots ''GAS-FIRED'' (alimenté au gaz) au-dessus du symbole UL tel qu'il est illustré ci-après; (2) le mot ''LISTED'' (inscrit) au-dessous du symbole UL; (3) la norme canadienne (c.-à-d. CSA, CGA, CAN) ayant servi à évaluer le produit; et (4) un numéro de contrôle assigné par UL.

Classification Service
Service de classification

With UL's Classification Service, UL determines that a manufacturer has demonstrated the ability to produce a product that complies with its requirements for the purpose of classification or evaluation regarding one or more of the following: (1) specific risks only, such as casualty, fire or shock; (2) performance under specified conditions; (3) regulatory codes; (4) other standards, including interna-

tional or regional standards; or (5) other conditions UL may consider desirable. UL conducts Follow-Up Service as an audit of the means the manufacturer uses to determine continued compliance of the product with UL's requirements.

Avec son Service de classification, UL indique qu'un fabricant a prouvé qu'il peut fabriquer un produit qui soit conforme à ses exigences aux fins de la classification ou de l'évaluation en ce qui a trait à au moins un des éléments suivants : (1) risques spécifiques seulement, tels qu'accidents, incendies ou chocs; (2) le rendement dans des conditions précises; (3) les codes réglementaires; (4) les autres normes, y compris les normes internationales et régionales; ou (5) d'autres conditions que UL peut juger souhaitables. UL assure un service de suivi comme vérification des moyens que le fabricant prend pour établir la conformité continue du produit avec les exigences UL. L.

UL Classification Mark
Marque de classification UL

UL Classification Mark for Canada and the United States
Marque de classification UL pour le Canada et les États Unis

UL Classification Mark for Canada
Marque de classification UL pour le Canada

UL's Classification Mark includes a qualifying statement designated by UL. A UL Classification Mark for Canada is used for products intended for the Canadian marketplace. It indicates that UL has used Canadian standards to investigate the product for specific hazards or properties. A UL Classification Mark for Canada and the U.S. is used for products intended for the Canadian and U.S. marketplaces. This Mark indicates that UL has used the requirements of both countries to investigate the product for specific hazards or properties.

La marque de classification UL comprend une attestation d'admissibilité définie par UL. Une marque de classification UL pour le Canada est utilisée pour les produits destinés au marché canadien. Elle indique que UL a pris en compte les normes canadiennes pour étudier les produits relativement à leurs dangers ou à leurs propriétés spécifiques. Une marque de classification UL pour le Canada et les États Unis est utilisée pour les produits destinés aux marchés canadien et américain. Cette marque indique que UL a pris en compte les exigences des deux pays pour étudier le produit quant à ses dangers et à ses propriétés spécifiques.

Component Recognition Service
Service de reconnaissance des composants

Many UL investigations of equipment involve an evaluation of the suitability of components such as relays, thermostats, switches, etc. for specific applications. Where such components are designed to comply with all the construction and performance requirements of the category, they are eligible for UL Listing and suitable for either field or factory installation.

In some situations, components of special design may be incomplete in construction or restricted in performance capabilities and not Recognized for use as field-installed components. These components may be entirely suitable for factory installation on other equipment where the limitations of use are known to the manufacturer and where their use within such limitations may be investigated by UL.

With UL's Component Recognition Service, UL determines that a manufacturer has demonstrated the ability to produce a component for use in an end product that complies with UL's requirements. This type of investigation takes into account the performance and construction characteristics of the end product and how the component will be used in that product. UL conducts Follow-Up Service as an audit of the means the manufacturer uses to determine continued compliance of the component with UL's requirements.

De nombreuses études sur les équipements menées par UL comprennent une évaluation de la pertinence des composants tels que les relais, les thermostats, les commutateurs, etc., en ce qui a trait à des applications spécifiques. Lorsque de tels composants sont conçus pour se conformer à toutes les normes de fabrication et aux exigences de rendement de la catégorie, ils sont admissibles à l'inscription UL et indiqués pour être installés sur place ou en usine.

Dans certaines circonstances, des composants spéciaux peuvent être incomplets pour ce qui est de la fabrication, ou limités en capacité de rendement, et donc non Reconnus pour être utilisés comme composants installés sur place. Ces composants peuvent convenir parfaitement pour une installation en usine sur d'autres équipements, lorsque les restrictions d'utilisation sont connues du fabricant et que leur utilisation dans les limites de ces restrictions peut être étudiée par UL.

Avec son Service de reconnaissance de composants, UL définit qu'un fabricant a fait preuve de compétence pour produire un composant pouvant être utilisé comme produit final qui satisfait aux exigences UL. Ce type d'examen prend en compte le rendement et les caractéristiques de fabrication du produit final et la façon dont le composant sera utilisé dans ce produit. UL effectue un service de suivi comme vérification des moyens que le fabricant prend pour assurer la conformité continue du composant avec les exigences UL.

UL Recognized Component Mark
Marque de composant reconnu UL

UL Recognized Component Mark for Canada and the United States
Marque de composant reconnu UL pour le Canada et les États Unis

UL Recognized Component Mark for Canada
Marque de composant reconnu UL pour le Canada

UL Recognized Components, or their packaging, are eligible to bear the UL Recognized Component Mark, the UL Recognized Component Mark for Canada, or the UL Recognized Component Mark for Canada and the U.S. The Recognized Component Mark does not provide evidence of listing or labeling, which may be required by installation codes or standards.

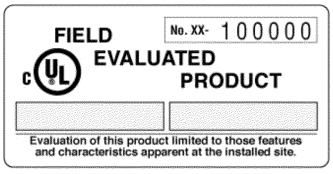
Les composants reconnus UL ou leur emballage sont admissibles à porter la marque de composant reconnu UL, la marque de composant reconnu UL pour le Canada ou la marque de composant reconnu UL pour le Canada et les États Unis. La marque de composant reconnu ne fournit cependant pas la preuve d'une inscription ou d'un label, laquelle peut être exigée par les codes ou les normes d'installation.

Field Evaluation Service

Service d'évaluation en conditions opérationnelles

This service covers on-site safety evaluations of installed products or systems, conducted by UL technical staff. UL's Field Evaluated Product Mark (below) can be applied to the product in the field if the product complies with UL's safety requirements.

Ce service couvre les évaluations de sécurité effectuées sur place par le personnel technique UL des produits ou des systèmes installés. La marque UL d'un produit évalué dans des conditions opérationnelles (voir ci après) peut être appliquée sur le produit sur place s'il satisfait aux exigences de sécurité UL.



cUL Field Evaluated Product Mark

Installation and Use of Products Bearing the UL Mark

AHJs should be consulted in all cases as to the particular requirements covering the installation and use of UL Listed or Classified products, equipment, systems, devices and materials.

Use of the White Book

The Canadian White Book includes the following:

- A compilation of all product categories applicable to an inspector arranged alphabetically by category code
- General Guide Information for each product category that includes references to the requirements used for the investigation of the products and the ULC or Canadian UL Mark to be used on the product
  - •Information relating to limitations or special conditions applying to the product
  - •The titles and designations of standards or requirements that have been used for the investigation of products in a specific product category
- Index of ULC Product Categories and Industry Terms
- Index of cUL Product Categories and Industry Terms
- ULC's Online Directories Quick Guide
- UL's Online Certifications Directory Quick Guide (to assist in finding General Guide Information and Listings online)

ULC and cUL Listing and Classification information is arranged alphabetically in the Canadian White Book by product category code. Within each part of the White Book, Part 1 – ULC Product Categories, Part 2 – cUL Product Categories.

The five-letter code (shown in parentheses) following each category title is the product category code designation.

Practical Application of the White Book in the Field

Application pratique du Livre blanc dans des conditions opérationnelles

Using the White Book in the field to help identify the intended use of a Listed product to assist in determining compliance with the applicable Canadian Model Codes.

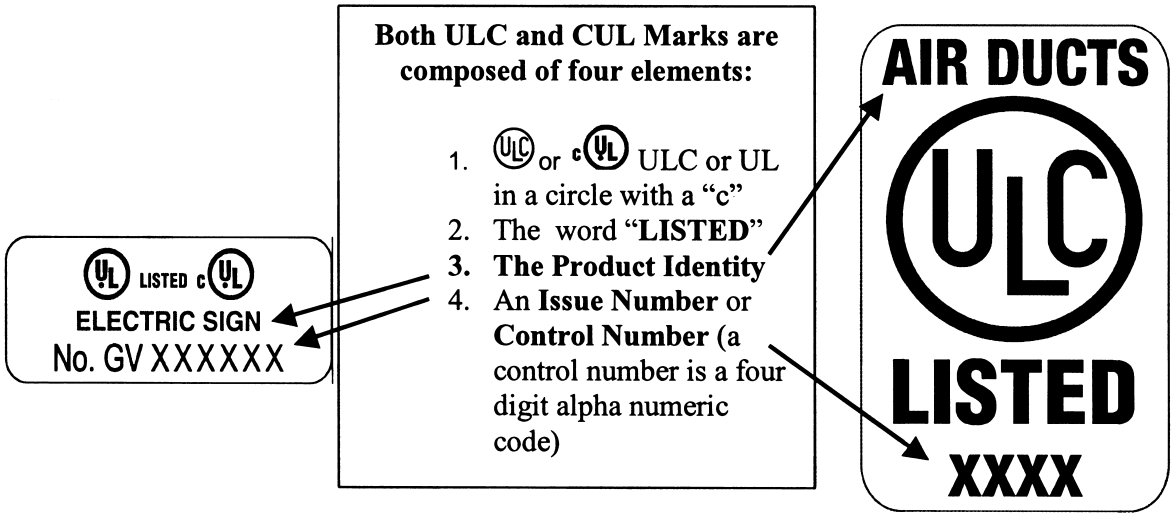
L'utilisation du Livre blanc dans des conditions opérationnelles aide à préciser l'utilisation prévue d'un produit inscrit afin d'établir s'il est en conformité avec les Codes du modèle canadien applicable.

This is a three step process detailed below:

Les trois étapes du processus sont décrites ci dessous:

1. **Determine the Product Identity from the cUL and ULC Listing Mark.**
   Établir l'identité du produit en utilisant la marque d'inscription cUL et ULC.

Step 1
Étape 1



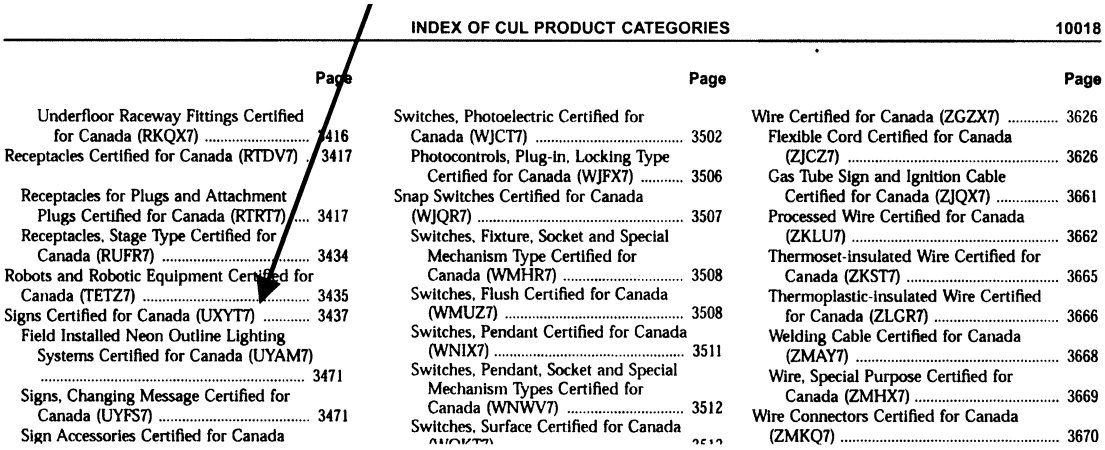
Once you locate the ULC or cUL Listing Mark on the product, Note the Product Identity, that is the key to using the White Book effectively (typically the product identity is the product category title).

Une fois que vous avez localisé la marque d'inscription UL sur le produit, notez l'identité du produit, c'est la clé pour utiliser efficacement le Livre blanc (généralement, l'identité du produit correspond au titre de catégorie de produit).

Step 2
Étape 2

Locate the Product Identity in the Index of ULC or cUL Product Categories and Industry Terms located in the back of the Canadian White Book.Once you have located the product identity, use the Index of ULC Product Categories and Industry Terms for a ULC Listing in the back of the Canadian White Book starting on page 679. For a cUL Listed product, use the Index of cUL Product Categories and Industry Terms in the back of the Canadian White Book starting on page 695 to find the product category. The index will identify the product category and the page number for the product category Guide Information.

Localisez l'identité du produit dans l'index des catégories de produits ULC ou cUL à la fin du Livre blanc canadien. Une fois que vous avez localisé l'identité du produit, utilisez l'index des catégories de produits ULC pour trouver une inscription ULC à la fin du Livre blanc canadien en commençant à la page 679. En ce qui concerne un produit inscrit cUL, utilisez l'index des catégories de produits cUL à la fin du Livre blanc canadien en commençant à la page 695 pour trouver la catégorie de produit. L'index identifiera la catégorie de produit et le numéro de page pour le Guide d'information de la catégorie de produit.



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Step 3
Étape 3

Access the product category Guide Information page identified in the Index of ULC or cUL Product Categories and Industry Terms. Once you locate the page, you will be able to find the Guide Information for the product category, in this case Signs (UXYT7). See the Guide Information for Signs (UXYT7) below.

Accéder à la page du Guide information pour la catégorie de produit indiquée dans l'index des catégories de produits ULC ou cUL. Une fois que vous avez trouvé la page, vous pourrez trouver le Guide information pour la catégorie de produit; dans le présent cas, il s'agit de « Signs » (panneau réclame) (UXYT7). Voir le Guide information pour "Signs" (UXYT7) ci dessous.

Guide Information for Signs, Certified for Canada (UXYT7)

Anatomy of UL Guide Information

- **Product Category Title**
- **Product Category Code**

This 5 letter alpha-numeric code that appears in parenthesis is assigned to each specific product category for cataloging in ULC's and UL's directories. The product categories in the Canadian White Book as well as all ULC and UL directories are organized alphabetically by this code. (The Category Code is not an acronym for anything, they are created and assigned by mathematic process.)

- **General Information** relating to intended use and installation, scope of Listing, product markings and requirements used for Listing the product.

- **ULC or UL Mark**
The last paragraph of all Guide Information explains how to identify products Listed under the product category. **Please remember, the ULC or CUL Listing Mark on the product is the only way to identify a Listed product certified for Canada. Always consult this section of the Guide Information to identify the Listing Mark requirements for the product.**

SIGNS CERTIFIED FOR CANADA (UXYT7)

USE AND INSTALLATION

This category covers electric portable and stationary signs and displays employing incandescent lamps, LEDs (light emitting diodes), electroluminescent panels, neon tubing, fluorescent lamps, high intensity discharge lamps or combinations thereof for installation in accordance with the "Canadian Electrical Code, Part I."

Signs or sections of a sign forming a complete enclosure intended for permanent connection to a source of supply are provided with permanent means for attachment to a building, to a support or to a hanging rig. The mounting hardware, poles and other structural components of a sign have not been evaluated with respect to local variable conditions such as wind and snow loading or soil conditions.

Electric signs, of such size that shipment in one carton or fully assembled is impractical, may be divided into sections. Each major subassembly bears an "Electric Sign Section" Listing Mark. Sign faces, trim and mounting hardware are not considered major subassemblies. Each sign will have suitable installation instructions describing or illustrating the proper assembly, mounting and connection of the numbered sign sections. The acceptability of the assembled sections in the field rests with the Authority Having Jurisdiction.

PRODUCT MARKINGS

Signs intended for permanent installation and which have been investigated for indoor use only are so marked. Cord-connected signs investigated for outdoor use are marked "Outdoor." Signs for outline lighting are marked "Outdoor Sign for Outline Lighting."

REBUILT PRODUCTS

This category also covers signs that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt signs are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt signs are subject to the same requirements as new signs.

RELATED PRODUCTS

Accessories intended for use in Listed signs are covered under Sign Accessories Certified for Canada (UYMR7).

Retrofit conversions intended to be field installed in Listed electric signs are covered under Sign Conversions, Retrofit Certified for Canada (UYWU7).

Changing message center signs may contain integral controllers or may be intended for use with externally connected controllers. Externally connected controllers are covered under Sign Controllers, Message Centers Certified for Canada (UYTQ7).

This category does not cover billboard illumination, exit lights, skeletal neon tubing for show windows, or illuminated clocks rated 600 V or less.

Field-assembled neon systems used in display windows, outline lighting, or skeletal neon signs are covered under Skeletal Neon Sign and Outline Lighting Systems, Field Assembled Certified for Canada (UZBL7).

Field-assembled cold cathode electric discharge lighting systems that provide general illumination are covered under Electric Discharge Lighting Systems, Cold Cathode Certified for Canada (IFAY7).

Field-installed neon outline lighting systems that outline or call attention to architectural details of a room or building are covered under Field Installed Neon Outline Lighting Systems Certified for Canada (UYAM7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA C22.2 No. 207-M89, "Portable and Stationary Electric Signs and Displays."

Electric signs that comply with the requirements in CAN/CSA C-22.2 No. 12, "Portable Luminaires" may also be Listed as Portable Luminaires Certified for Canada (QOWZ7).

UL MARK

The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names, as appropriate "Indoor Electric Sign," "Electric Sign" or "Electric Sign Section." For rebuilt signs the word "Rebuilt" precedes the product name.

Field Modifications

What happens to the Listing if a ULC or cUL-Listed product is modified in the field?

An authorized use of the ULC or cUL Mark is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements when it was shipped from the factory. When a ULC or cUL-Listed product is modified after it leaves the factory, UL has no way to determine if the product continues to comply with the safety requirements used to certify the product without investigating the modified product. UL can neither indicate that such modifications ''void'' the ULC or cUL Mark, nor that the product continues to meet UL's safety requirements, unless the field modifications have been specifically investigated by UL. It is the responsibility of the Authority Having Jurisdiction (AHJ) to determine the acceptability of the modification or if the modifications are significant enough to require one of ULC's or UL's Field Engineering Services staff members to evaluate the modified product. UL can assist the AHJ in making this determination.

An exception for a field modification authorized by ULC or cUL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the marking on the product have been investigated for use in that product.

If a party wishes ULC or UL to determine if the modifications made to a ULC or cUL Listed product comply with UL requirements, the appropriate Field Engineering Service can be initiated to investigate the modifications. This investigation will only be conducted after ULC or cUL consults with the AHJ to ensure that UL's investigation addresses all areas of concern and meets all of the AHJ's needs.

If you have any questions or would like to inquire about a field evaluation, contact Field Services at +1-877-UL-HELPS, prompt #2 (+1-877-854-3577) or visit http://www.ul.com/field/.

Field Labeling

Is it permissible to apply a UL Mark in the field?

The application of a ULC or cUL Mark in the field is only permitted when an inspection is conducted under one of ULC's or UL's Field Engineering Services in the presence of a UL representative.

CE Marking Information

A CE Marking is a European marking of conformity that indicates that a product complies with the essential requirements of the applicable European laws or Directives with respect to safety, health, environment and consumer protection. Generally, this conformity to the applicable directives is done through self-declaration. The CE Marking is required on products in the countries of the European Economic Area (EEA) to facilitate trade between the member countries. The manufacturer or his authorized representative established in the EEA is responsible for affixing the CE Marking to his product. The CE Marking provides a means for a manufacturer to demonstrate that his product complies with a common set of laws required by all of the countries in the EEA to allow free movement of trade within the EEA countries.

CE

Unlike the ULC or cUL Mark, the CE Marking:

- Is not a safety certification mark,
- Is generally based on self-declaration rather than third-party certification, and
- Does not demonstrate compliance to North American safety standards or installation codes.

A product that bears a CE Marking may also bear a certification mark, such as ULC's or UL's Listing Mark; however, the CE Marking and the ULC or cUL Mark have no association. The ULC or cUL Mark indicates compliance with the applicable safety requirements in effect in North America and is evidence of ULC or cUL certification, which is accepted by model North American installation codes, such as the *National Electrical Code*® and the *Canadian Electrical Code*®.

The CE Marking on products is not a certification mark. AHJs should continue to look for the ULC or cUL Mark on products in order to determine if a product complies with applicable safety requirements for North America.

AIR-CONDITIONING SYSTEMS (AIXZC)

This category covers devices intended for use in the construction of air duct systems for air conditioning of rooms and buildings. The devices are divided into the following categories:

Air Duct Systems (ALJXC)
Connectors (ALNRC)
Air Ducts (ALLUC)
Air Duct Components (ALLZC)
Filter Units, Air (AJZVC)
Dampers (EMMEC)
Fire Dampers (EMNOC)
Leakage-Rated Dampers (EMQIC)

FILTER UNITS, AIR (AJZVC)

GENERAL

This category covers air filter units of both washable and throw-away types intended for the removal of dust and other airborne particles from air circulated mechanically in equipment and systems installed in accordance with the ''National Building Code of Canada.''

Air filters are classified as follows:

- **Class 1** filters are units which, when clean, do not contribute fuel when attacked by flame and which emit only negligible amounts of smoke.
- **Class 2** filters are units which, when clean, burn moderately when attacked by flame or emit moderate amounts of smoke or both.

The toxicity of products of combustion resulting from exposure to flame and the use of these filters for removal of flammable vapours and residues has not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S111, ''Standard Method of Fire Tests for Air Filter Units.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Air Filter'' or ''Air Filter Unit.''

AIR DUCT SYSTEMS (ALJXC)

This category covers air duct systems, which include connectors and air ducts made from materials consistent with and for use indoors in accordance with the ''National Building Code of Canada.''

In accordance with CAN/ULC-S110, ''Standard Methods of Test for Air Ducts,'' air ducts are classified as follows:

- **Class 1** air ducts have a flame spread rating of not over 25 without evidence of continued progressive combustion and a smoke developed rating of not over 50.
- **Class 2** air ducts have a flame spread rating of not over 50 without evidence of continued progressive combustion and a smoke developed rating of not over 50 for interior surfaces and not over 100 for exterior surfaces.

Air Ducts (ALLUC)

GENERAL

This category covers air ducts identified as Class 1 or Class 2 in accordance with the information in Air Duct Systems (ALJXC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S110, ''Standard Methods of Test for Air Ducts.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Air Duct.''

Air Duct Components (ALLZC)

GENERAL

This category covers devices that are incomplete in certain constructional features or restricted in performance capabilities and intended for use as components of air ducts and/or connectors which are submitted for investigation rather than for direct, separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete assemblies of air ducts and/or connectors submitted for examination and tests to Underwriters Laboratories of Canada.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S110, ''Standard Methods of Test for Air Ducts.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Air Duct Component.''

Connectors (ALNRC)

GENERAL

This category covers connectors identified as Class 1 or Class 2 in accordance with the information in Air Duct Systems (ALJXC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S110, ''Standard Methods of Test for Air Ducts.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Connector.''

DAMPERS (EMMEC)

GENERAL

This category covers fire dampers and leakage-rated dampers.

Fire dampers are designed for the protection of openings in fire separations against fire when installed in ducts that connect two fire compartments or penetrate a fire separation.

The basic design of the dampers has been established as a result of representative dampers being subjected to a fire, hose stream and other tests in accordance with CAN/ULC-S112, ''Standard Method of Fire Test of Fire-Damper Assemblies.'' For additional information, see Fire Dampers (EMNOC).

Leakage-rated dampers are designed to restrict the spread of smoke through HVAC systems and control the movement of smoke within a building.

Leakage-rated dampers are investigated with respect to a maximum air leakage when exposed to selected conditions of air temperature and pressure in accordance with CAN/ULC-S112.1, ''Leakage Rated Dampers for Use in Smoke Control Systems.'' For additional information, see Leakage-Rated Dampers (EMQIC).

Dampers certified under one category are not appropriate for use in the others. However, in cases where dampers are tested to satisfy both the fire and leakage-rating requirements, they may be used in either function. In such cases, dampers are identified by a combination label indicating the fire and leakage ratings.

Fire dampers may require expansion allowances as indicated in the individual manufacturer's installation instructions. Leakage-rated dampers are investigated for leakage through the plane of the damper only and do not include the leakage that may occur through expansion gaps around the damper.

Authorities Having Jurisdiction should be consulted before installation.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Damper.''

Fire Dampers (EMNOC)

GENERAL

This category covers fire dampers designed for installation in air-conditioning ducts in accordance with the ''National Building Code of Canada.''

The rating of 3 h, 2 h, 1-1/2 h, 1 h or 3/4 h indicates the duration of fire exposure which is established as a result of the basic design being subjected to a fire and hose stream test. In addition, the performance of each damper is investigated when subjected to various simulated environmental conditions.

Fire Dampers (EMNOC)−*Continued*

Unless indicated in the individual certifications, fire damper assemblies have not been investigated for their ability to close under airflow conditions.

These fire dampers are intended for installation in drywall and/or masonry construction as noted in the individual certifications, which specify the maximum permissible dimensions applicable for each type of construction.

In accordance with CAN/ULC-S112, ''Standard Method of Fire Test of Fire-Damper Assemblies,'' the fusible links used in the fire-damper assemblies submitted for test are generally rated at 70 to 75°C. Fusible links with temperature ratings up to 100°C may be used in these assemblies without further testing.

Fire dampers are of the single-blade, multi-blade or curtain types.

Curtain-type dampers are of the interlocking blade or folded blade type.

When so qualified, fire dampers are intended for installation in air conditioning and ventilating ducts or openings (without ducts), piercing or terminating at vertical or horizontal fire separations where the fire separation is required to have a fire-resistance rating of up to and including 4 h.

Installation requires the use of wall or floor sleeves (excepting instances where fire-damper frames are of sufficient width) with perimeter mounting angles attached to the sleeve on both sides of the wall or floor opening. Expansion allowances are in the order of 3 mm for each 300 mm of damper width and length, except where indicated in the individual manufacturers' installation instructions.

Detailed installation instructions, including illustrations and adequate information for attaining proper and safe installation of the product, are provided with each fire-damper assembly by the manufacturer.

These fire dampers are not appropriate for use in place of the firestop flaps illustrated in the various floor or roof and ceiling assembly designs in the Fire Resistance Ratings section. For additional information, see Ceiling Firestop Flap Assemblies (CABSC).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Dampers (EMMEC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S112, ''Standard Method of Fire Test of Fire-Damper Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fire Damper.''

Fire Dampers, Marine Type (EMNUC)

GENERAL

This category covers marine-type fire dampers of the single-blade, multi-blade or curtain types. Each damper assembly includes a casing which may be attached by welding or mechanical fastening to a duct penetrating an A or B class marine bulkhead or deck.

These damper assemblies are rated in terms of the time taken for duct temperatures on the unexposed side of the division to rise 180°C above the ambient temperature at the start of the test. Ratings may be for 0, 15, 30 or 60 minutes.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Dampers (EMMEC).

REQUIREMENTS

The basic standards used to investigate products in this category are TP 439, ''Structural Fire Protection Standards: Testing and Approval Procedures,'' and International Code for Application of Fire Test Procedures (FTP Code), Resolution A.754(18), ''Recommendation on Fire Resistance Tests for 'A', 'B' and 'F' Class Divisions'' (requirements of Transport Canada).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fire Damper, Marine Type.''

Leakage-rated Dampers (EMQIC)

GENERAL

This category covers leakage-rated dampers of the single-blade, double-blade, multi-blade or curtain types. These dampers are designed for use in smoke control systems. They are intended to restrict the spread of smoke in HVAC systems, which are designed to be automatically shut down in

Leakage-rated Dampers (EMQIC)−*Continued*

the event of a fire, and also to control the movement of smoke within a building when the HVAC system is operational in engineered smoke control systems.

Leakage-rated dampers are identified by Class Designations 0, I, II, III or IV as shown in the following table as to maximum air leakage permitted for the Class for static pressure of 0.249 kPa and 0.995 kPa. Leakage rates may be determined at an extended static range of 1.992 kPa and 2.988 kPa as shown in the individual certifications.

Leakage rates may be determined at ambient temperature or at ambient temperature after exposing the dampers to temperature degradation at elevated temperatures where the selected temperatures are in increments of 55.6°C with the minimum degradation temperature being 121°C. The degradation test temperatures are not intended to reflect fire conditions, and the Leakage Class is not intended to provide data on dampers that are directly exposed to a fire or to heated air in excess of the indicated temperature.

These dampers are identified with respect to both the Leakage Class and ambient or degradation test temperature.

	Max Leakage Cubic Metre/Second/Square Metre			
	Normal Operating Static Range		Extended Operating Static Range	
Class	0.249 kPa	0.995 kPa	1.99 kPa	2.99 kPa
0	0	0	0	0
I	0.20	0.041	0.056	0.071
II	0.051	0.102	0.143	0.179
III	0.204	0.408	0.571	0.714
IV	0.306	0.612	0.857	1.071

TEMPERATURE DEGRADATION
Exposure Temperature, Degree C
A (Ambient)
121 or any temperature in excess of
121 in increments of 55.6

Detailed installation instructions, including illustrations and adequate information for attaining proper and safe installation of the product, are provided with each damper assembly by the manufacturer.

These dampers are not intended for use in place of fire dampers.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Dampers (EMMEC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S112.1, ''Leakage Rated Dampers for Use in Smoke Control System.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Leakage Rated Damper.''

ALARM SYSTEM UNITS (ALOZC)

ACCESS CONTROL SYSTEM UNITS (ALVYC)

USE

This category covers units for access control systems, providing a means of regulating or controlling entry into an area, or the use of a device, by electrical or mechanical means. Accessories covered under this category include keypads, token card readers, biometric readers, request-to-exit devices, access-point sensors and access-point actuators.

REQUIREMENTS

The basic standards used to investigate products in this category are ANSI/UL 294, ''Access Control System Units,'' and CAN/ULC-S319, ''Electronic Access Control Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Access Control System Unit,'' ''Security Equipment,'' ''Security Subassembly,'' ''Fire Alarm and Security Equipment,'' ''Fire Alarm and Security Subassembly,'' or other appropriate product name as shown in the individual Listings.

CENTRAL AND MONITORING STATION BURGLAR ALARM SYSTEM UNITS (AMCXC)

USE

This category covers burglar alarm signal receiving, recording and automated station units or systems intended for use within a central or monitoring station or satellite station, and associated signal transmitters, subscribers' control units and the like, which are installed within protected premises.

These units are either of the individual line type or multiplex system type as indicated in the individual certifications.

The units are suitable for use with active communication channel security levels A1 through A4 and passive communication channel security levels P1 through P3 as indicated in the individual certifications. For further information, see Financial Type Signal Receiving Centres, Full and Shared Service (CRXXC) and Commercial Type Signal Receiving Centres, Full and Shared Service (CPVXC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S304, "Signal Receiving Centre and Premise Burglar Alarm Control Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Central and Monitoring Station Alarm Unit," "Central Station System Unit, Fire Alarm," "Security Equipment," "Security Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

CONTACTS AND SWITCHES (AMQVC)

USE

This category covers devices intended for use with central station, local or monitoring station burglar alarm systems. Switches suitable for central station and monitoring station service are designed to open and cross the protective circuit when operated. For local systems, the cross contact is not required.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C634, "Guide for the Investigation of Connectors and Switches for Use with Burglar Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Contact and Switch."

INTRUSION DETECTION UNITS (ANSRC)

GENERAL

This category covers floor traps, vibration detectors, and various electronic devices that may be used to form a protective system for either residential or commercial use.

Electronic units include those which utilize low visibility or invisible rays (photoelectric), passive infrared, electromagnetic waves, ultrasonic radiation, vibration or other electronic principles to signal intrusion or movement within residential or mercantile premises or approaches to safes, stockrooms, etc. Electronic units are recognized in combination with or instead of conventional forms of wiring on walls, floors, ceilings and openings to the extent indicated in the individual certifications.

The individual certifications determine the suitability for connection to commercial, financial or residential systems by specifications of range, coverage, contact type, tamper switches, or other features of the unit.

These electronic units have been investigated for fire and electrical shock hazards and for reliability of operation. The effect of radiation on radio communication or radio navigation has not been investigated.

The Department of Transport (Ottawa, Canada) should be consulted for regulations governing the use and operation of radiation devices.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S306, "Intrusion Detection Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Intrusion Detection Unit."

LOCAL ALARM UNITS (AOTXC)

GENERAL

This category covers control units, outside alarm housings, power supplies and remote station units.

For further information, see Financial Type Signal Receiving Centres, Full and Shared Service (CRXXC) and Commercial Type Signal Receiving Centres, Full and Shared Service (CPVXC).

Components or modules of the control unit with modular construction that may be shipped separately to the site, or are eligible for field replacement are identified by component labels (see ULC Mark below).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S303, "Local Burglar Alarm Units and Systems," and CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Local Alarm Unit," "Component for Local Alarm Unit," "Security Equipment," "Security Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

MISCELLANEOUS DEVICES, BURGLAR ALARM (AOUAC)

GENERAL

This category covers miscellaneous equipment, such as repeaters and modems, intended for use with central and monitoring station burglar alarm units.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S304, "Signal Receiving Centre and Premise Burglar Alarm Control Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Miscellaneous Device, Burglar Alarm," or other appropriate product name as shown in the individual Listings.

Intrusion Detection Unit Components (AOUGC)

GENERAL

This category covers devices that are incomplete in certain constructional features or restricted in performance capabilities and intended for use as components of intrusion detection units which are submitted for investigation rather than for direct, separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete assemblies of intrusion detection units submitted for examination and tests to Underwriters Laboratories of Canada.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S306, "Intrusion Detection Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Intrusion Detection Unit Component."

POWER SUPPLY UNITS (APHZC)

USE

This category covers power-supply units intended for application as components of burglary protection signalling systems. Some power-supply units, as identified in the individual certifications, may utilize certified accessories to supplement power-supply application.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S318, "Power Supplies for Burglar Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Power Supply Unit."

PROPRIETARY BURGLAR ALARM SYSTEM UNITS (APOUC)

GENERAL

This category covers proprietary burglar alarm signal receiving, recording and automated station units or systems intended for use within a central signal-receiving station or satellite station and associated signal transmitters, subscribers' control units and the like, which are installed within protected proprietary premises.

These units are either of the individual-line type or multiplex-system type as indicated in the individual Listings.

The units are suitable for use with line security levels AA and BB, (which may also be referred to as levels 1, 2, 3) as indicated in the individual Listings.

A proprietary burglar alarm system is an alarm system in which alarm-initiating circuits and devices are connected directly or indirectly to constantly monitored receiving equipment at a central supervising station located at the protected property and operated by competent and experienced personnel responsible to the owner of the protected property. The system is arranged so that a predetermined change in the alarm-initiating circuits or devices automatically causes transmission of an alarm signal over a supervised signalling channel to the central supervising station. An installation wiring diagram attached to the control unit of the system, or reference in the control unit marking, indicates the device and circuits which are acceptable for connection to the control unit in the field.

Proprietary burglar alarm units and systems are specially designated as to their suitability for use on mercantile premises, mercantile safes and vaults, and bank safes and vaults.

The protection circuits of these systems normally operate within the Limits of Class 2 remote-control and signal circuits as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Components or modules of the control unit with modular construction that may be shipped separately to the site or that are eligible for field replacement are identified by component labels (see **ULC MARK** below).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1076, "Proprietary Burglar Alarm Units and Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Proprietary Burglar Alarm System Unit," "Component for Proprietary Burglar Alarm System Unit," "Security Equipment," "Security Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

SOUNDING DEVICES (AQJRC)

USE

This category covers devices intended for installation in certified alarm housings to provide audible alarm indication in local burglary alarm systems. In this capacity, and when installed on exposed building surfaces, the devices are required to operate in an acceptable manner under the normally encountered temperature variation to which they may be subject.

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories," and CAN/ULC-S303, "Local Burglar Alarm Units and Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sounding Device."

HEAT DETECTORS (SZGUC)

USE

This category covers devices intended to be used for certificated bank vault alarm installations for central station, monitoring station or local connection. They are intended to be mounted on the vault door or the vestibule of the vault. These heat detectors are of the combination rate-of-rise and fixed-temperature type.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530, "Heat Actuated Fire Detectors for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these

Heat Detectors (SZGUC)−*Continued*

products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Heat Detector."

MOTORIZED FIRE FIGHTING APPARATUS (AZYDC)

PUMPERS, FIRE DEPARTMENT (AZYFC)

GENERAL

This category covers fire department pumpers, tankers, light-attack fire fighting apparatus (mini pumpers), and special-purpose apparatus.

Pumpers are normally supplied in recommended standard capacities of 2000, 3000, 4000, 5000, 6000, 7000 and 8000 L/min and are intended for use by municipal fire departments and other organized fire brigades. Mini pumpers are supplied in capacities of 950 to 2000 L/min.

REBUILT PRODUCTS

This category also covers fire department pumpers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt fire department pumpers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt fire department pumpers are subject to the same requirements as new fire department pumpers.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S515, "Automobile Fire Fighting Apparatus."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pumper, Fire Department."

AERIAL DEVICES FOR FIRE FIGHTING APPARATUS (AZYPC)

GENERAL

This category covers aerial devices, such as aerial ladders and elevating platforms, for motorized fire fighting apparatus and ladder trucks. Aerial ladders are manufactured and used in lengths of 20, 23, 26, 30, 38 and 45 m. The length of an aerial ladder is measured by the length of a plumb line from the top rung of the ladder to ground with the ladder raised to its maximum angle of elevation and fully extended. Aerial devices are intended for use by municipal fire departments and other organized fire brigades.

REQUIREMENTS

The basic standard used to conduct routine performance tests at the factory on aerial devices is CAN/ULC-S515, "Automobile Fire Fighting Apparatus."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Aerial Device for Fire Fighting Apparatus."

CHASSIS COMPONENTS FOR FIRE FIGHTING APPARATUS (AZYRC)

GENERAL

This category covers chassis components for motorized fire fighting apparatus, such as fire department pumpers, light-attack fire fighting apparatus (mini pumpers), tankers, aerial ladders and platforms, and special service apparatus.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S515, "Automobile Fire Fighting Apparatus."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Chassis Component for Fire Fighting Apparatus."

MECHANICAL EQUIPMENT (BDCNC)

BLOWPIPES AND TORCHES (BDCTC)

USE

This category covers blowpipes or torches intended for oxy-fuel welding and cutting operations. Torches may be designed to utilize acetylene, methylacetylene propadiene, natural gas or propane at low or medium pressures. Torches intended for use with acetylene are designed to operate at a pressure of not more than 100 kPa supplied from low- or medium-pressure acetylene generators or from high-pressure acetylene cylinders employing suitable reducing valves.

REBUILT PRODUCTS

This category also covers blowpipes and torches that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt blowpipes and torches are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt blowpipes and torches are subject to the same requirements as new blowpipes and torches.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C123, ''Oxy-Fuel Gas Torches.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Blowpipe and Torch.''

BUILDING MATERIALS (BHWVC)

This category covers materials classified as to their surface burning characteristics and/or their combustibility.

CLASSIFICATION OF MATERIALS AS TO COMBUSTIBILITY (BHYAC)

This category covers materials investigated to determine their combustibility.

Heat Release and Smoke Extinction Area of Building Materials (BIAYC)

GENERAL

This category covers elementary or composite building materials.

The thermal conductivity, vapour resistance, washability, structural and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before application.

RELATED PRODUCTS

Materials classified as noncombustible in accordance with CAN/ULC-S114, ''Standard Method of Test for Determination of Non-Combustibility in Building Materials,'' are covered under Noncombustible Materials (BICWC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S135, ''Standard Test Method for the Determination of Combustibility Parameters of Building Materials Using an Oxygen Consumption Calorimeter (Cone Calorimeter),'' at a heat flux of 50 kW/m^2 to determine the total heat release and total smoke extinction area as indicated in the individual certifications. The heat release and smoke extinction area of discrete layers of composite materials are indicated in the individual certifications, together with the total heat release and total smoke extinction area of the material determined from the cumulative emissions from all layers.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Heat Release and Smoke Extinction Area of Building Materials.''

Noncombustible Materials (BICWC)

GENERAL

This category covers elementary building materials that meet the criteria for noncombustibility and that are intended for use as building materials in noncombustible construction, and where the ''National Building Code of Canada'' stipulates noncombustible materials. The intended use of the product (e.g., insulation) is specified in the individual certifications.

The thermal conductivity, vapour resistance, washability, structural and other properties have not been investigated.

Noncombustible Materials (BICWC)−*Continued*

Authorities Having Jurisdiction should be consulted before application.

RELATED PRODUCTS

Materials classified for total heat release and smoke extinction area in accordance with ULC-S135, ''Standard Test Method for the Determination of Combustibility Parameters of Building Materials Using an Oxygen Consumption Calorimeter (Cone Calorimeter),'' are covered under Heat Release and Smoke Extinction Area of Building Materials (BIAYC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S114, ''Standard Method of Determination of Non-Combustibility in Building Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Non-Combustible Material.''

CLASSIFICATION OF MATERIALS AS TO SURFACE BURNING CHARACTERISTICS (BIKTC)

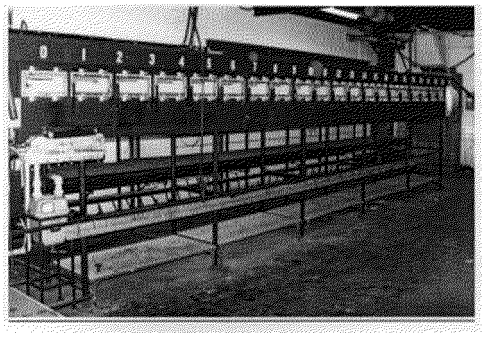
This category covers the surface burning characteristics of materials, which are expressed in terms of a classification or rating, and provide data with regard to (1) flame spread (FSC) and (2) smoke developed (SD) during fire exposure of the classified materials in comparison with inorganic reinforced cement board and untreated red oak lumber as 100 when exposed to fire under similar conditions.

The fire tests on which classification of materials that, by their own structural qualities or the manner in which they are applied, are capable of supporting themselves in position or may be supported in the test furnace to a thickness comparable to their recommended use are based, are conducted in accordance with CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

The fire tests on which classification of flooring, floor covering materials and materials that are not self-supporting, such as thermoplastics and loose fill materials are based, are conducted in accordance with CAN/ULC-S102.2, ''Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.''

Except where noted, properties other than the surface burning characteristics of the materials covered under this section have not been investigated.

The ''Tunnel Furnace'' Test Apparatus used in the classification of



materials as to their Surface Burning Characteristics.

Acoustical Materials (BIYRC)

GENERAL

This category covers acoustical materials certified as to their surface burning characteristics under the specific conditions indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The certification of these products does not anticipate a possible change in performance should the products be subjected to repainting or other surface treatment following installation.

The certifications are confined to the materials themselves and to the methods of application indicated and do not pertain to structures in which the materials may be installed.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

Acoustical Materials (BIYRC)−*Continued*

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Acoustical Material.''

Air Duct Sealant (BLISC)

GENERAL

This category covers air duct sealants classified as to the surface burning characteristics of the ''combination'' of the air duct sealant and the specific (noncombustible) surface to which it is applied at the specific coverages indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The flash points (closed cup) of the air duct sealants also appear in the individual certifications. The publication of the flash point data is not intended to establish a relative flammability classification of the liquid air duct sealants, but to indicate the flashing characteristics of the liquid air duct sealants under a standard test procedure. Where ''no flash'' is indicated, the coating has no flash point in the closed cup tester.

The compatibility of the air duct sealant with other surfaces and the ability of the air duct sealant to perform its function in a product, assembly, or construction have not been determined.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Air Duct Sealant.''

Adhesives (BJLZC)

GENERAL

This category covers adhesives, certified as to the surface burning characteristics of the ''combination'' of the adhesive and the specific surface to which it is applied in longitudinal beads or strips at the specific percentages of exposed area or at full coverage at the specific m2/L as indicated in the individual certifications.

The Surface Burning Characteristics are derived in comparison with untreated red oak as 100.

The flash point of the adhesive also appears in the individual certifications, and is determined in accordance with the Standard, ASTM D 93. The publication of the flash point data is not intended to establish a relative flammability classification of the adhesive, but to indicate the flashing characteristics of the adhesive under a standard test procedure. Where ″no flash″ is indicated, the product has no flash point in the closed cup tester. Where ''not determined'' is indicated, the product is ineligible for testing in accordance with the Standard, ASTM D 93 due to its limited cure time or restrictions on handling the uncured material.

The Flame Spread Rating and Smoke Developed Classification of the adhesive with other surfaces and the ability of the adhesive to perform its function in a product, assembly, or construction have not been determined.

Authorities Having Jurisdiction should be consulted before application.

RELATED PRODUCTS

For adhesives intended for use in assemblies that have been assigned Fire Resistance Ratings, see Adhesives (BYWRC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

Adhesives (BJLZC)−*Continued*

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED'', a control number, and the product name ''Adhesive.''

Batts and Blankets (BKNVC)

GENERAL

This category covers batts and blankets certified as to their surface burning characteristics, smoulder resistance, or both, under the specific conditions indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The certifications or ratings are confined to the materials themselves and do not pertain to the structures in which the materials are installed.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate the surface burning characteristics of products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

The basic standard used to investigate the smoulder resistance of products in this category is ULC-S129, ''Standard Method of Test for Smoulder Resistance of Insulation (Basket Method).''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Batts and Blankets.''

Building Panels (BKRHC)

This category covers panels intended for use as internal or external cladding for walls or ceilings or as acoustical and/or decorative partitions in interior spaces. The panels are divided into two categories:

1. Composite Panels (BKRQC), consisting of organic and/or inorganic core materials with surface finishes which are not laminous.
2. Laminated Panels (BKRZC), consisting of organic and/or inorganic core materials with laminated facings.

Products or devices that are constructed primarily of panels (composite or laminated) that have demonstrated flame spread and smoke developed values of not greater than 25 and 50, respectively, are covered under Panels, Special Purpose (BKSIC).

Composite Panels (BKRQC)

GENERAL

This category covers composite panels classified as to their surface-burning characteristics as indicated in the individual certifications.

The surface-burning characteristics are derived in comparison with untreated red oak as 100.

The panels are tested in a horizontal configuration and incorporate a centreline longitudinal joint.

The nature of the test specimens is such that the longest unfastened length of panel joints is 7315 mm, unless otherwise specified in the individual certifications.

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

The insulating, acoustical, structural and other properties of these products have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Factory-assembled exterior wall panels that have demonstrated the ability to remain in place for at least 10 minutes when investigated to CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials,'' are covered under Factory-Assembled Exterior Wall Panels (CBZZC).

Insulated building units investigated to CAN/ULC-S138, ''Method of Test for Fire Growth of Insulated Building Panels in a Full-Scale Room Configuration'' (supersedes ULC/ORD-C376), are covered under Insulated Building Panels (OERQC).

Foamed plastic insulated garage doors investigated to ULC/ORD-C263.7, ''Room Fire Test Method for Garage Doors Using Foamed Plastic Insulation,'' are covered under Foamed Plastic Insulated Garage Doors (JGPWC).

Composite Panels (BKRQC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Composite Panel.''

Laminated Panels (BKRZC)

GENERAL

This category covers laminated panels classified as to their surface burning characteristics as indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

For laminated panels provided with a facing, the effect of the adhesive is determined by testing the sample with the butt joint seam, by slitting the facing, or by using a factory or field joint (if applicable).

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

The insulating, acoustical, structural and other properties of these products have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Laminated Panel.''

Panels, Special Purpose (BKSIC)

GENERAL

This category covers devices constructed primarily of panels that have demonstrated flame-spread and smoke-developed values of not greater than 25 and 50, respectively. The nature of the device is described in the individual certifications.

The insulating, acoustical, structural and other properties of these products have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Panel, Special Purpose.''

Cables (BLEHC)

GENERAL

This category covers power or communication cable classified as to its surface-burning characteristics as indicated in the individual certifications.

A ladder-type cable tray fabricated from steel, 7000 mm long and 420 mm wide, is used for full-fill, single-layer parallel mounting of thermoplastic cable using bare copper wire to tie the cable to the rungs. The open cable test assembly is then positioned on the floor of the tunnel over asbestos paper with an area density of 0.68 F6 0.1 kg/m^2.

Unless otherwise indicated, the cable, when tested, is mounted side by side on a noncombustible (asbestos-cement board) surface, so as to completely cover the exposed test sample area.

Cables (BLEHC)−*Continued*

The surface-burning characteristics are derived in comparison with untreated red oak as 100.

The electrical properties of the cable have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For fire-resistance ratings of electrical cable, see Fire-resistant Cable (FHJRC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate cable with thermoplastic-type jackets and/or insulation in this category is ULC-S102.4, ''Standard Method of Test for Fire and Smoke Characteristics of Electrical Wiring and Cable.''

The basic standard used to investigate other cable types not containing thermoplastic components in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Cable,'' and the flame spread and smoke developed values applicable to the product.

Caulking and Sealants, General Purpose (BLEZC)

GENERAL

This category covers general-purpose caulkings and sealants, certified as to the surface-burning characteristics of the ''combination'' of the caulking or sealant and the specific surface to which it is applied in longitudinal beads or strips at the specific percentages of exposed area or at full coverage at the specific m^2/L as indicated in the individual certifications.

The surface-burning characteristics are derived in comparison with untreated red oak as 100.

The flash point of the caulking or sealant also appears in the individual certifications, and is determined in accordance with ASTM D93, ''Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.'' The publication of the flash-point data is not intended to establish a relative flammability classification of the caulking or sealant, but to indicate the flashing characteristics of the caulking or sealant under a standard test procedure. Where ''no flash'' is indicated, the product has no flash point in the closed-cup tester. Where ''not determined'' is indicated, the product is ineligible for testing in accordance ASTM D93 due to its limited cure time or restrictions on handling the uncured material.

The flame-spread rating and smoke-developed classification of the caulking or sealant with other surfaces and the ability of the sealant to perform its function in a product, assembly, or construction have not been determined.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

RELATED PRODUCTS

For sealant materials intended for use in air duct assemblies, classified as to Surface Burning Characteristics, see Air Duct Sealants (BLISC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''General Purpose Caulking and Sealant.''

Cementitious Mixtures (BLPRC)

GENERAL

This category covers cementitious mixtures certified as to their surface burning characteristics when applied in accordance with the instructions supplied with the material, as indicated in the individual certifications.

These cementitious mixtures are proprietary mixes prepared at the factory, which require only the addition of water for application to interior building surfaces in the field.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

Cementitious Mixtures (BLPRC)−*Continued*

The certifications are confined to the materials themselves and do not pertain to the structures to which the materials are applied.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Cementitious Mixture.''

Coating Materials (BMCZC)

This category covers coating materials intended for application to building surfaces. The materials are divided into two categories:

1. Coatings, Fire Retardant (BMQXC), intended for application to interior combustible surfaces for the purpose of reducing the flammability of those surfaces.
2. Coatings, General Purpose (BNEVC), intended for various purposes, such as to provide resistance to wear, and to provide information concerning the surface burning characteristics of the coating when applied to noncombustible or other designated surfaces.

The flash points (closed cup) of these coatings (including primers, base and top coats) also appear in the individual Listings. The publication of the flash point data is not intended to establish a relative flammability classification of the liquid coatings, but to indicate the flashing characteristics of the liquid coatings under a standard test procedure. Where ''no flash'' is indicated, the coating has no flash point in the closed cup tester.

Coatings, Fire Retardant (BMQXC)

GENERAL

This category covers fire-retardant coating materials classified as to the surface burning characteristics of the ''combination'' of single coatings or single-coating systems and the specific surfaces to which they are applied at the specific coverages indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

To be eligible for classification, the coating or system must reduce the flame spread of Douglas Fir and all other tested interior combustible surfaces (having flame spreads of 100 or greater by test) to which it is applied, by at least 50% or to a flame spread of 50 or less, whichever represents the lesser spread of flame.

The surface burning characteristics indicated in the individual certifications are only applicable when the coating is applied at the rates of coverage and to the type of surfaces indicated, when the coating is applied in accordance with the directions supplied with the container, and when the coating is maintained.

The useful life of these coating materials has not been investigated; however, the coatings should be maintained for continued effectiveness.

Typical combustible surfaces indicated in the individual certifications, to which fire-retardant coatings or coating systems have been applied, when assessing the surface burning characteristics of the combination, are Douglas Fir, cellulose acoustical tile and cellulose board.

The Douglas Fir substrates consist of 17 by 89 mm finished tongue-and-groove flooring. (The flame spread ratings of these uncoated Douglas Fir substrates are normally between 80 and 100.)

The cellulose acoustical tile substrates consist of nominal 300 by 300 by 13 mm tongue-and-groove ''Factory Finish'' perforated tiles. (The flame spread ratings of these cellulose tile substrates are normally in excess of 150.)

The cellulose board substrates consist of nominal 250 by 1200 by 13 mm square edge ''Factory Finish'' unperforated boards. (The flame spread ratings of these cellulose boards are normally in excess of 75.)

Unless otherwise indicated in the individual certifications, cellulose board and cellulose tile substrates are supported for the tests attached to wood furring strip frames.

Typical noncombustible surfaces indicated in the individual certifications are asbestos-cement board (flame spread zero) and gypsum wallboard (flame spread 15).

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Coating Materials (BMCZC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

Coatings, Fire Retardant (BMQXC)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Coating, Fire Retardant.''

Coatings, General Purpose (BNEVC)

GENERAL

This category covers general-purpose coating materials classified as to the surface burning characteristics of the ''combination'' of single coatings or single-coating systems and the specific surfaces to which they are applied at the specific coverages indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

To be eligible for classification, the coating or system must initially be investigated as applied to asbestos-cement board. It should be noted that this has the effect of assessing the surface burning characteristics of the coating or system in comparison to other certified coatings and does not provide information concerning its possible performance in retarding surface burning characteristics, such as spread of flame, in combinations other than those tested. Coating materials investigated in this manner are covered under Fire Retardant Coatings (BMQXC).

The coating system may also be investigated on other surfaces or substrates, in which case the performance of the combination is indicated in the individual certifications, together with information concerning the performance of the substrate, without the coating application, for the purposes of comparison. Substrates identified as ''asbestos-cement board,'' ''concrete blocks'' and ''unpainted plaster'' are considered to have flame spread and smoke developed values of zero. Substrates identified as ''calcium silicate-asbestos board'' may have readings slightly in excess of zero, but for the purposes of comparison in the performance of applied coating systems are considered to have zero surface burning characteristics.

The weatherability, durability and useful life of these coatings has not been investigated unless otherwise indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Coating Materials (BMCZC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''General Purpose Coating.''

Fibre, Sprayed (BNSTC)

GENERAL

This category covers sprayed fibre materials certified as to their surface burning characteristics when applied in the manner indicated in the individual certifications. The materials consist of proprietary mixes of fibres and binders, with or without fire-retardant chemicals, that are premixed at the factory.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The incorporated fire-retardant chemicals may be affected by repeated exposure to humid conditions.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

Authorities Having Jurisdiction should be consulted before application.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

Fibre, Sprayed (BNSTC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fibre, Sprayed.''

Flooring and Floor Covering Materials (BNTVC)

GENERAL

This category covers flooring and floor-covering materials classified as to surface burning characteristics under the specific conditions indicated in the individual certifications.

Floor-covering materials may or may not include an underlay or integral backing and may be tested unbonded or bonded using adhesive suggested by the manufacturer and in accordance with application instructions supplied with the adhesive.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The classifications are confined to the materials themselves when applied to the specific surfaces indicated in accordance with directions supplied with the materials, and do not pertain to the structures in which the materials may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102.2, ''Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Flooring'' or ''Floor Covering Material.''

Floor Panels (BNUHC)

GENERAL

This category covers floor panels classified as to their surface burning characteristics as indicated in the individual certifications. The panels consist of treated or untreated wood cores covered with sheet metal, in various sizes and thicknesses.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The effect of the adhesive is determined by testing the sample with a butt joint seam, by cutting the metal covering, or by using a factory or field joint (if applicable).

The classifications are confined to the materials themselves and do not apply to the floor-covering materials that may be provided on the normally exposed surfaces of these panels. The classifications do not pertain to the structures on which these panels may be installed.

The insulating, acoustical, structural and other properties of these products have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102.2, ''Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Floor Panel.''

Insulation, Thermal (BOYAC)

This category covers products classified specifically for instances in which ratings or classifications were supplemented from fire testing with an investigation and Listing of the physical properties of the materials (such as thermal conductivity, flexural strength, water absorption, etc.) in accordance with requirements established for these materials in the appropriate National Standards of Canada.

Mineral Fibre Thermal Insulation (BOYNC)

GENERAL

Mineral Fibre Thermal Insulation (BOYNC)−*Continued*

This category covers mineral fibre insulation in the form of batts, blankets, boards, sheets with or without membranes, and loose fill material.

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Insulation, Thermal (BOYAC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate the surface burning characteristics of products in this category is CAN/ULC-S702, ''Mineral Fibre Thermal Insulation for Buildings.''

The basic standard used to investigate the smoulder resistance of products in this category is ULC-S129, ''Standard Method of Test for Smoulder Resistance of Insulation (Basket Method).''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Mineral Fibre Thermal Insulation.''

Polyisocyanurate Foam Board Insulation (BOYWC)

GENERAL

This category covers polyisocyanurate foam board insulation intended for use behind an interior protective finish appropriate to the use and occupancy, unless otherwise indicated in the individual certifications.

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Insulation, Thermal (BOYAC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate the surface burning characteristics of products in this category is CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

The basic standard used to investigate the physical properties of products in this category, including dimensions, compressive, tensile and flexural strength, water absorption, dimensional stability, thermal resistance, and water vapour permeance, is CAN/ULC-S704, ''Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced'' (supersedes CAN/CGSB-51.26).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Polyisocyanurate Foam Board Insulation.''

Polystyrene Insulation (BOZCC)

GENERAL

This category covers polystyrene insulation (expanded or extruded types) classified as to its physical properties, including surface burning characteristics, thermal conductivity, compressive strength, water absorption, water vapour presences and dimensional stability.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Insulation, Thermal (BOYAC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S107, ''Method of Fire Tests for Roof Coverings,'' CAN/ULC-S102.2, ''Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies,'' and CAN/ULC-S701, ''Thermal Insulation, Polystyrene, Boards and Pipe Covering'' (supercedes CAN/CGSB-51.20).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Polystyrene Insulation.''

Loose Fill Insulation (BPHXC)

GENERAL

This category covers loose-fill-insulation materials certified as to their surface burning characteristics under the specific conditions indicated in

Loose Fill Insulation (BPHXC)−*Continued*

the individual certifications. The material is installed on the floor of the tunnel furnace at the specified blown density and tested without screening in a 50 mm thick layer.

Loose-fill-insulation materials are intended to be poured or blown into joist spaces of ceilings or attics for thermal insulation purposes. Those materials which have been chemically treated to reduce combustibility incorporate treatments consisting of water soluble salts, which may be affected by repeated exposure to high-humidity conditions.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The certifications refer to the materials themselves and do not pertain to the structures in which the materials may be installed.

The settling of the material and toxicity of the products of combustion have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate the surface burning characteristics of products in this category is CAN/ULC-S102.2, ''Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.''

Cellulose-fibre-based loose-fill insulation where indicated, is additionally investigated as to its smouldering tendency in accordance with ULC-S129, ''Standard Method of Test for Smoulder Resistance of Insulation (Basket Method)''.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Loose Fill Insulation.''

Mineral Composition Units (BQJTC)

GENERAL

This category covers mineral composition units, consisting of proprietary mixes of predominately inorganic materials formed into rigid blocks or sheets of various sizes and thicknesses, classified as to their surface burning characteristics.

The classifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Mineral Composition Unit.''

Mineral and Fibre Boards (BQXRC)

GENERAL

This category covers mineral and fibre boards consisting of proprietary mixes of organic or inorganic fibres, or both, and binders formed into various sizes and thicknesses, and supplied with or without surface coatings, classified as to their surface burning characteristics or smoulder resistance, or both, as indicated in the individual certifications.

Thermally-thin materials, whose surface burning characteristics may be affected by the nature of the materials against which they are mounted, are classified as to the surface burning characteristics of the ''combination'' of the mineral and fibre board and the backing material used in the test.

Where a backing material is identified in the individual certifications, use of other backing materials of greater density in the field may be considered acceptable.

Thermally-thick materials or materials whose surface burning characteristics are not sensitive to the nature of their substrate are classified without reference to a substrate.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

Mineral and Fibre Boards (BQXRC)−*Continued*

With mineral and fibre boards that are provided with a facing, the effect of the adhesive is determined by testing the sample with a butt joint seam, by slitting or by using a factory or field joint (if applicable).

The classifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate the surface burning characteristics of products in this category is CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

The basic standard used to investigate the smoulder resistance of products in this category is ULC-S129, ''Standard Method of Test for Smoulder Resistance of Insulation (Basket Method).''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Mineral and Fibre Board.''

Pipe and Equipment Covering (BRERC)

This category covers pipe and equipment covering classified as to its surface burning characteristics.

The classification of pipe and equipment covering is divided into two sections:

1. Pipe and equipment covering materials, containing classifications of individual coverings with or without facings and joint treatments, and
2. Pipe and equipment covering systems, containing those classifications which include all parts required to form a system: covering, facings, joint treatment, surface coatings (for elbows, tees, valves, etc.) and accessories.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

When a covering material is provided with an adhered facing, the effect of the adhesive is determined by testing the sample with a butt joint seam, by slitting the facing or by using a factory or field joint (if applicable). For material employing a field joint covering treatment, the facing is provided with a seam (as above) prior to application of the joint covering treatment.

Materials that would not be self-supporting during the CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies,'' test are supported with metal rods or bars, or 50,000 B7m sieve size wire mesh with metal bars or rods.

The classifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The thermal conductivity, vapour resistance, wash ability, toxicity of products of combustion, structural, and other properties have not been investigated.

Pipe and Equipment Covering Materials (BRGUC)

GENERAL

This category covers pipe and equipment covering materials consisting of proprietary mixes of organic and/or inorganic materials and binders formed into rectangular or circular cross sections, and supplied with or without facings and joint treatments. The covering materials are classified as to surface burning characteristics and maximum service temperature exposure, as indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Pipe and Equipment Covering (BRERC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S102, ''Method of Test for Surface Burning Characteristics of Building Materials and Assemblies,'' and ASTM C411, ''Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of

Pipe and Equipment Covering Materials (BRGUC)−*Continued*

this Directory) together with the word "LISTED," a control number, and the product name "Pipe and Equipment Covering Material."

Plastic Materials (BTLIC)

GENERAL

This category covers various types of plastic materials classified as to their surface burning characteristics as indicated in the individual certifications.

Where ULC certification is promulgated for an intermediate product (such as a plastic resin) which has been investigated as a sheet material, the label will identify that the material is supplied in a particular form (bead, pellet, etc.) and is intended for use only by manufacturers of ULC certified products, and not as a finished product.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate thermosetting plastic materials in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

The basic standard used to investigate thermoplastic plastic materials in this category is CAN/ULC-S102.2, "Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies."

In special instances where thermoplastic sheets with a maximum thickness of 1 mm are intended for use over materials required to be investigated to CAN/ULC-S102, the thermoplastic sheets, together with the backing material, may be investigated to CAN/ULC-S102. Refer to the individual certifications for details.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Plastic Material."

Plastic Fittings and Valves (BTLBC)

GENERAL

This category covers fittings and valves injection-moulded from thermoplastic materials and classified as to their surface burning characteristics as indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

Fittings and valves are tested when solvent-cemented to ULC certified plastic pipe at specified intervals. Unless otherwise indicated in the individual certifications, a single piping system is positioned along the centreline of the tunnel floor.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Plastic Materials (BTLIC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102.2, "Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Plastic Fitting and Valve."

Plastic Lighting Diffusers (BTLFC)

GENERAL

This category covers plastic lighting diffusers or lenses intended for use with lighting fixtures installed in accordance with the "National Building Code of Canada."

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Plastic Materials (BTLIC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

Plastic Lighting Diffusers (BTLFC)−*Continued*

The basic standard used to investigate products in this category is ULC-S102.3, "Standard Method of Fire Test of Light Diffusers and Lenses." Plastic lighting diffusers are required to exhibit the characteristic of falling from their mountings before igniting.

The basic standard used to investigate the surface burning characteristics of products in this category is CAN/ULC-S102.2, "Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies." The lighting diffuser material is required to have a flame spread rating of not more than 250 and a smoke developed rating of not more than 600.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Plastic Lighting Diffuser."

Plastic Pipe and Tubing (BTLPC)

GENERAL

This category covers pipe and tubing extruded from plastic materials and classified as to their surface burning characteristics as indicated in the individual certifications.

The various sizes of pipe and tubing are tested in longitudinal lengths attached to noncombustible boards and spaced as indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Plastic Materials (BTLIC) and Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate pipe and tubing manufactured from thermosetting plastic materials in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

The basic standard used to investigate pipe and tubing extruded from thermoplastic plastic materials in this category is CAN/ULC-S102.2, "Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Plastic Pipe and Tubing."

Plywood (BUBZC)

GENERAL

This category covers plywood treated either by pressure impregnation or a surface coating and classified as to its surface burning characteristics as indicated in the individual certifications.

Thermally-thin materials, whose surface burning characteristics may be affected by the nature of the materials against which they are mounted, are classified as to the surface burning characteristics of the "combination" of the plywood and the backing material used in the test.

Where a backing material is identified in the individual certifications, use of other backing materials of greater density in the field may be considered acceptable.

Thermally-thick materials or materials whose surface burning characteristics are not sensitive to the nature of their substrate are classified without reference to a substrate.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

Plywood identified in the individual certifications as having displayed no evidence of significant progressive combustion in tests of 30 minutes' duration have been subject to the exposure conditions described in CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies," for a period of 30 minutes without propagating a flame front more than 3.20 m beyond the centreline of the test burners.

When the treatment consists of pressure impregnation with water-soluble salts, it will be affected by repeated exposure to water or to conditions that may result in the condensation of water.

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

Authorities Having Jurisdiction should be consulted before installation.

Plywood (BUBZC)−*Continued*

RELATED PRODUCTS

Plywood intended for use as a roof deck construction material is covered under Roof Deck Construction Materials (TGYVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Plywood."

Roof Drains (BVBYC)

GENERAL

This category covers roof drains classified as to surface burning characteristics and/or noncombustibility, as well as to their physical properties, including tensile strength, impact strength, resistance to accelerated weathering, resistance to heat, aging, leakage, freeze-thaw resistance, strainer dome impact, peel strength, corrosion, and low-temperature drop impact.

The classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S102.2, "Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies," and ULC/ORD-C790.4, "Roof Drains."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name "Roof Drain," and the flame spread and smoke developed values applicable to the product.

Sheathing Materials (BVDVC)

GENERAL

This category covers sheathing materials, single or laminated, rigid or flexible, of various types and thicknesses, certified as to their surface burning characteristics as indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The certifications are confined to the materials themselves when attached to various building elements with adhesives or noncombustible mechanical fasteners and do not pertain to the structures of which they may be a part.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies," or CAN/ULC-S102.2, "Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sheathing Material."

Structural Cement-fibre Units (BVRTC)

GENERAL

This category covers structural cement-fibre units consisting of proprietary mixes of processed wood fibres and cementitious binder, formed into slabs or boards of various sizes, shapes and thicknesses, classified as to their surface burning characteristics as indicated in the individual certifications.

Structural Cement-fibre Units (BVRTC)−*Continued*

The surface burning characteristics are derived in comparison with untreated red oak as 100.

With structural cement-fibre units that are provided with a facing, the effect of the adhesive is determined by testing the sample with a butt joint seam, by slitting or by using a factory or field joint (if applicable).

The classifications are confined to the materials themselves and do not pertain to structures in which the materials may be installed.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Structural Cement-Fibre Unit."

Tapes, General Use (BVYSC)

GENERAL

This category covers tapes classified as to their surface burning characteristics when applied to a noncombustible (asbestos-cement board) surface in longitudinal strips at the specific percentages of exposed areas as shown in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The classifications are confined to the materials themselves and do not pertain to their anticipated performance when applied to other than noncombustible surfaces.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "General Use Tape."

Wallboard, Gypsum (BWFRC)

GENERAL

This category covers wallboard of various thicknesses consisting of cores of various compositions, certified as to its surface burning characteristics as indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials are installed.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of

Wallboard, Gypsum (BWFRC)−*Continued*

this Directory) together with the word "LISTED," a control number, and the product name "Wallboard, Gypsum."

Wall Coverings (BWSZC)

GENERAL

This category covers wall coverings classified as to their surface burning characteristics as indicated in the individual certifications.

The surface burning characteristics are derived in comparison with untreated red oak as 100.

The classifications are confined to the materials themselves when applied to the specific surfaces indicated in accordance with directions supplied with the package and do not pertain to the structures in which the materials may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Classification of Materials as to Surface Burning Characteristics (BIKTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wall Covering."

FIRE-RESISTANCE RATINGS (BXUVC)

This category covers fire-resistance ratings assigned to the assemblies of construction materials as illustrated in the individual certifications, which have been established on the basis of the performance of test samples representative of the design of such assemblies when subjected to a fire-endurance test conducted in accordance with the specified standard for the following categories:

1. General Building Construction and Materials. The specimens are tested in accordance with the CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials," and are subjected to a fire exposure defined by the temperature-versus-time relationship depicted by the curve in Figure 1, "Time-Temperature Curve for Controlling Furnace Operation During Fire-Resistance Classification Tests – Standard Exposures."

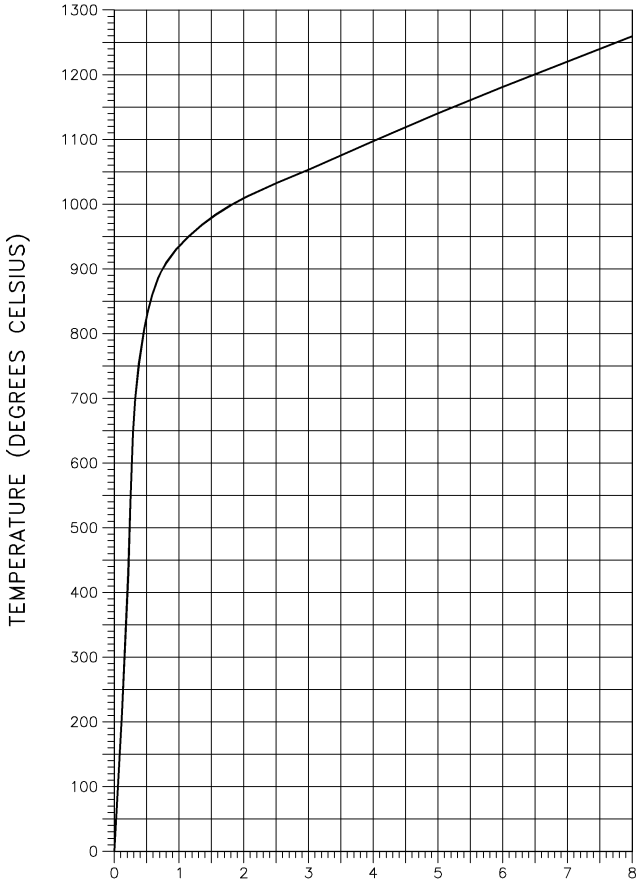


Figure 1
Time-Temperature Curve for Controlling Furnace Operation During Fire-resistance Classification Tests – Standard Exposures

2. Structural Steel Members used in the petrochemical industry or similar environment where a rapid rise in fire temperature is anticipated. The specimens are tested in accordance with ANSI/UL 1709, "Rapid Rise Fire Test of Protection Materials for Structural Steel," and are subjected to a fire exposure defined by the temperature-versus-time relationship depicted by the curve in Figure 2, "Time-Temperature Curve for Controlling Furnace Operation During Fire-Resistance Classification Tests

– Rapid-Rise Fire Exposures.'' Design numbers established as a result of such tests are identified by the notation **"Rapid-Rise Fire Test"** on the design illustration.

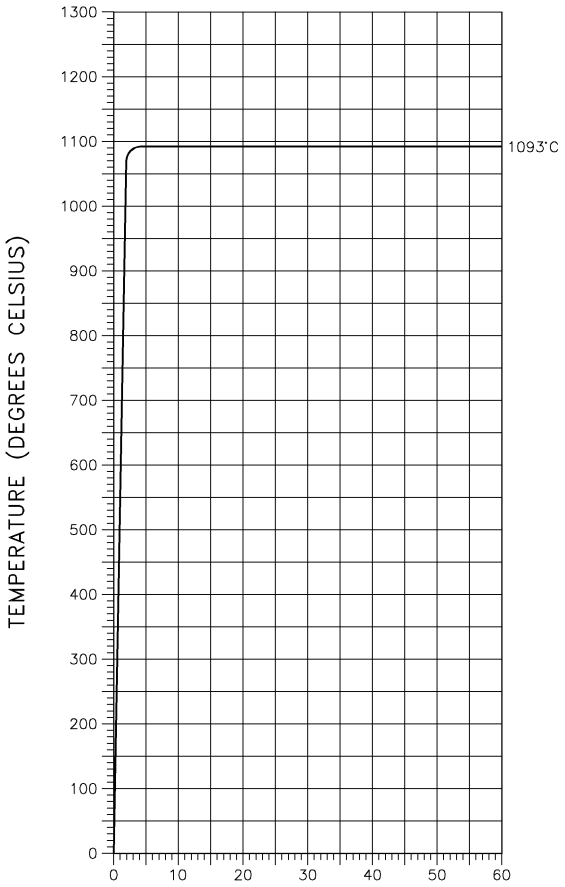


Figure 2
Time-Temperature Curve for Controlling Furnace Operation During Fire-resistance Classification Tests – Rapid-rise Fire Exposures

Essentially, the illustrated designs reflect the precise dimensions and condition of the sample assembly subjected to the fire-endurance test. Within practical limits, and with the exception of the items covered by the sections offering guidance in the variations which may be permitted in actual building construction in order that the anticipated performance of the assembly will not be impaired, a construction must duplicate the illustrated design and the details included in the associated text in order to achieve the indicated fire-resistance rating.

Authorities Having Jurisdiction should be consulted before installation.

Numbered items refer to the descriptive text below each drawing. Individual components of a proprietary nature or over which it is necessary to exercise control at the manufacturing location are certified under the Label Service or other Follow-Up Program of Underwriters Laboratories of Canada. Such items are identified in the text by a black dot thus •. Under these Services, periodic examinations and tests are conducted on samples selected at random from current production and stock. Each certified product bears the label or other identification of Underwriters Laboratories of Canada from which it may be determined that a product is suitable for use as a component in a particular design(s). Components intended for use with these assemblies are covered under Thermal Barrier Components (XCLZC).

It should be noted that the fire-resistance ratings assigned to these designs apply to assemblies in their entirety. Individual components are not assigned a fire-resistance rating but rather are designated for use in a design(s) in order that the assigned fire-resistance rating of the complete assembly may be achieved.

All ratings assigned to floor and ceiling assembly designs, roof and ceiling assembly designs, wall and partition designs and column designs, are based on the assumption that the stability of any structural member supporting these designs is not impaired by the effects of fire on these supports.

Unless specifically described in the individual designs, penetrations through all or a portion of the assembly for piping, electrical access, air distribution, etc., can significantly affect the rating.

As supplementary information, in addition to the requirements of CAN/ULC-S101, a finish rating is established for assemblies containing combustible supports. The finish rating is the time at which the wood stud or joist reaches an average temperature rise of 139°C or an individual temperature rise of 181°C as measured on the plane of the wood nearest the fire.

Illustrated designs are identified by a design number with a letter prefix. The prefix letter designates a type of construction and the first number which follows designates the particular method of protection illustrated by the design with the final two numbers identifying a particular design.

The prefix letters representing the various groups of constructions are:

Prefix Letters	Type of Construction
A, B or C	Floor & Ceiling Designs – Concrete and Cellular Steel Deck
D, E or F	Floor & Ceiling Designs – Concrete and Steel Floor Units
G, H or I	Floor & Ceiling Designs – Concrete and Steel Joists
J or K	Floor & Ceiling Designs – Concrete
L or M	Floor & Ceiling Designs – Wood Joist
N or O	Beam Designs for Floor & Ceiling Assemblies
P, Q or R	Roof & Ceiling Designs
S or T	Beam Designs for Roof & Ceiling Assemblies
U, V or W	Wall & Partition Designs
X, Y or Z	Column Designs

The type of protection employed is allocated to one of three main groups depending upon whether it is employed in the form of a shielding membrane, or directly applied, or the assembly, or components of the assembly are left unprotected. These groups are further subdivided, where appropriate, as follows:

NUMBERING SYSTEM FOR FIRE-RATED ASSEMBLIES

The numbers indicated as ''Spare'' in the above table are for future expansion and to accommodate new types of systems developed in the future.

RESTRICTED-LOAD USE CONDITIONS

When a test assembly complies with the acceptance criteria, a detailed description of the assembly, its performance in the fire test and other pertinent details, such as specifications of materials, certifications coverage and alternate assembly details, are included in a report for the test sponsor. Sponsors may provide copies of the complete test report upon request. The report also contains a summary of important features of the rated assembly.

A complete description of each rated fire-resistive assembly can be found in the ULC Fire Resistance Directory.

CAN/ULC-S101 requires loads applied to test samples be calculated using the limit states design method specified in the ''National Building Code of Canada'' (NBCC). CAN/ULC-S101 also requires fire-resistive assemblies with ratings obtained from samples tested with applied loads less than the maximum calculated value be identified. Load restriction due to the sponsor of the test electing to test the assembly under load less than specified by the limit states design methods are identified as ''Load Restricted.'' Assemblies investigated with loading computed in accordance with working stress design methods are identified as ''Load Restricted – Assembly evaluated in accordance with Working Stress methods, for use under Limit States Design methods refer to information under BXUVC.''

The percent load reductions for typical assemblies in Table 1 are based upon loading calculated in accordance with the working stress design method as compared to loading calculated in accordance with the limit states design method. The calculations were performed for assemblies representing spans and member sizes of typical fire-test assemblies. The esenting spans and member sizes of typical fire-test assemblies. The loads were calculated assuming a span of 4 m for floors and roofs and 3 m for walls.

The NBCC requires that buildings and their structural components be designed to have sufficient strength and stability so that the factored resistance (ϕR) is greater than or equal to the effects of factored loads. The value for ϕ and R are specified in the applicable limit state design methods, for concrete, masonry, steel and timber.

Some fire-resistive designs are specified with a Load Restricted Factor. When using fire-resistive designs with a Load Restricted Factor, the factored resistance (ϕR) of the structural members or components should be reduced by multiplying the factored resistance (ϕR) by the Load Restricted Factor specified in the individual ULC fire-resistance designs.

The Load Restricted Factor should be applied to the factored resistance (ϕR) of all structural members or components, including but not limited

NUMBERING SYSTEM FOR FIRE RATED ASSEMBLIES

TYPES OF PROTECTION										
	Membrane Protection				Direct Applied Protection					Unprotected
Types of Construction	000-099	100-199	200-299	300-399	400-499	500-599	600-699	700-799	800-899	900-999
Floors & Ceilings: A, B, or C Concrete and Cellular lar Steel Deck	Concealed Grid Sys.	(Spare)	Exposed Grid Sys.	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
D, E or F Concrete and Steel Floor Units	Concealed Grid Sys.	(Spare)	Exposed Grid Sys.	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
G, H or I Concrete and Steel Joists	Concealed Grid Sys.	(Spare)	Exposed Grid Sys.	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
J or K Concrete	Concealed Grid Sys.	(Spare)	Exposed Grid Sys	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
L or M Wood Joist	Concealed Grid Sys.	(Spare)	Exposed Grid Sys.	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
Beams: N or O Floor & Ceiling	Concealed Grid Sys.	(Spare)	Exposed Grid Sys.	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
Roof & Ceiling: P, Q or R	Concealed Grid Sys.	(Spare)	Exposed Grid Sys.	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
Beams: S or T Roof & Ceiling	Concealed Grid Sys.	(Spare)	Exposed Grid Sys.	(Spare)	Metal Lath	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	Unprotected
Wall & Partition: U, V or W	Building Partition Panel Units	Insulating Concrete	(Spare)	Wood Stud Gypsum Bd. Lath &/or Plaster	Metal Stud Gypsum Bd. Lath &/or Plaster	Misc. Supp. Gypsum Bd. Lath &/or Plaster	Metal Panels Gypsum Bd. Lath &/or Plaster	Metal Panels or Supports Cemen-titious	Metal Panels or Supports Sprayed Fibre	Masonry
Columns: X, Y or Z	Building Units	Prefab-ricated	Mineral & Fibre Board	(Spare)	Metal Lath & Plaster	Gypsum Board	Miscel-laneous	Cemen-titious	Sprayed Fibre	(Spare)

to, factored moment resistance (M_r), factored shear resistance (V_r), factored tensile resistance (T_r), and factored compressive resistance (C_r).

Table 1

Type of Assembly	Percent Load Reduction (LSD-WSD) / LSD	Load Restricted Factor
W200x42 noncomposite steel beam	12%	0.88
W200x42 composite steel beam	29%	0.71
Floor / Roof supported by open web steel joists	4%	0.96
Floor supported by cold formed steel channels	4%	0.96
Floor supported by 38 by 235 mm wood joists	35%	0.65
Wall supported by 38 by 89 mm wood studs	18%	0.82
Steel columns	0%	None

The ratings for steel columns do not have a "Load Restricted Factor" as these ratings are based on temperature limitations. No loading is applied to steel columns during the fire test.

The engineer of record should be consulted whenever fire-resistive assemblies with "Load Restricted Factors" are selected. The indicated load reductions are based upon Factored Load effects that are governed by the reduced Factored Resistance of the structural elements. The selection of structural elements is, at times, based upon service limits, such as deflection and vibration. These factors and others, such as the change in material strength properties as a function of temperature, should be considered when selecting fire-resistive assemblies with Load Restricted ratings.

The Load Restricted Factors in Table 1 are intended to be used as a guide and are applicable to the specific structural members specified in Table 1.

FLOOR AND ROOF AND CEILING CONSTRUCTIONS AND BEAM PROTECTION

Unless otherwise stated in the individual designs, the load capacity of wide-flange-shaped steel beams assumes that the beams are manufactured from steel with yield strength of 250 MPa.

The time ratings assigned to each illustrated design are given in terms of a restrained or an unrestrained condition, or both. A restrained condition in a fire test is considered to be one in which the expansion at the supports of a load-carrying element resulting from the effects of the fire is resisted by forces external to the element. An unrestrained condition is one in which the load-carrying element is free to expand and rotate at its supports.

Restrained ratings are intended for application to assemblies and structural members considered suitable for use in building construction where the structural members are designed with continuity, or where the construction is otherwise expected to be restrained against thermal expansion under fire conditions. An unrestrained rating is applied to assemblies and structural members considered suitable for use in building construction where the structural members are simply supported and unrestrained against thermal expansion.

Restrained assembly ratings, unrestrained assembly ratings, and unrestrained beam ratings have been assigned to each assembly where appropriate.

The unrestrained beam rating associated with a particular design is applicable to beams protected in the manner described by the design

when used with a floor or roof construction having a comparable or greater capacity of heat dissipation than the floor or roof with which it was tested.

Unless specifically described in the designs, openings penetrating the floor, roof or ceiling for piping, electrical access or air distribution can adversely affect the indicated rating.

WALLS AND PARTITIONS

The wall and partition designs illustrated are identified by a design number and an hourly rating.

In accordance with CAN/ULC-S101, the minimum size of wall fire tested is 9.3 m^2 and the height of the wall is 3050 mm. In the field when walls greater than 3050 mm in height are constructed, the slenderness of the wall constructed in the field should not be less than the slenderness of the 3050 mm high wall specified in the ULC Design. For calculation of slenderness, reference should be made to the material specific structural design standard.

With the exception of support (e.g., studs) and fastener (e.g., nails, screws) spacings, the dimensions indicated in the following designs are intended to be construed as the minimum allowable for each rated assembly. Support and fastener spacings stated are the maximum allowable.

Additional layers of gypsum board are permitted to be added to any design.

Certified and labelled mineral fibre thermal building insulation processed from rock, slag and glass only may be used in ULC nonload-bearing wall assembly designs consisting of wallboard and steel or wood studs with a fire-resistance rating not exceeding two hours when illustrated without insulation, without detracting from the rating assigned to the assembly.

Note: This applies to ULC nonload-bearing wall assemblies that utilize proprietary (certified) gypsum wallboards as specified in the individual designs.

Where reference is made to a specific type of screw for attaching gypsum wallboard, the following specifications apply:

Screw Type	Length	Shaft Dia., mm	Head Dia., mm Min	Head Dia., mm Max
Type S	Nominal length shall be min length	3.6 - 3.9	8.0	9.3
Type G	Nominal length shall be min length	5.3 - 5.5	7.6	9.3
Type W	Nominal length shall be min length	3.6 - 3.9	8.0	9.3

These screws are self-drilling, self-tapping steel screws with a case-hardened surface, corrosion-resistant treated, flat-top head and No. 2 Phillips design driving recess, 2.6 mm minimum depth.

Wood Studs — The size of studs are minimum unless otherwise stated in a design. The spacing of studs is a maximum unless otherwise stated in a design. Spacing between parallel rows of studs are minimums unless otherwise stated in a design.

Steel Studs — The dimensions and gauge of steel studs are minimums. The hourly ratings apply when the steel studs are of a heavier gauge and/or larger dimensions than specified in a design. Spacing between parallel rows of studs are minimums unless otherwise stated in a design.

The superimposed load of bearing walls utilizing steel studs should be based on the capacity of the studs as determined by CSA-S136 (2007), "North American Specification for the Design of Cold-Formed Steel Structural Members."

Where lateral support of studs (by means of straps, channels or similar steel members) is required in the design, the loads applied to steel studs should be based on the steel-braced design. The loads based on sheathing bracing should not be assumed, unless otherwise stated in the design.

The loads applied to steel studs having a yield stress higher than the stated minimum should be based upon the specified minimum yield stress stated in the design.

Non-load-bearing steel studs are produced in accordance with ANSI/AISI S201 (2007), "North American Standard for Cold-Formed Steel Framing – Product Data." In accordance with ANSI/AISI S201, the minimum flange width should be 31.8 mm and the minimum return lip should be 4.8 mm.

EQUIVALENT OPENING FACTOR (F_{EO})

Fire-resistance ratings of wall assemblies can be assigned on the basis of the performance of the assembly when tested and investigated in accordance with CAN/ULC-S101. However, the NBCC allows for an exception from the unexposed surface temperature rise requirements for exterior wall assemblies having a limiting distance of 1.2 m or more, provided correction is made for radiation from the unexposed surface at the desired duration of exposure.

Where the surface temperature on the unexposed surface of an exterior wall assembly exceeds the limitations of the CAN/ULC-S101 test, an allowance can be made for radiation from the hot unexposed wall surface by adding an equivalent area of unprotected opening to the area of actual openings. In order to calculate this equivalent area, an equivalent opening factor (F_{EO}) must be calculated as shown below:

$$F_{EO}=\frac{(T_u+273)^4}{(T_e+273)^4}$$

Where:

T_u = Average temperature in degrees Celsius of the unexposed wall surface at the time the required fire-resistance rating is reached under test conditions, and

T_e = 892°C for a fire-resistance rating of not less than 45 minutes; 927°C for a fire-resistance rating of not less than 1 h, and 1010°C for a fire-resistance rating of not less than 2 h.

F_{EO} = An equivalent opening factor derived from test data.

Where this information is available, it has been provided in the individual designs.

COLUMN PROTECTION

The column designs illustrated are identified by a design number and an hourly rating. The dimensions given in the following designs are intended to be constructed as the minimum allowable for each rated assembly. Where the material applied to the column is likely to be damaged by moving vehicles, handling of merchandise and other sources, the applied material is intended to be protected against such possible damage.

METRIC CONVERSION

This metric edition has been "hard" converted where possible. However, many dimensions were "soft" converted as metric equivalents do not exist.

In floor/ceiling and roof/ceiling designs, the spacings of the structural members have been soft converted (e.g., 48 in. becomes 1220 mm). For walls and partitions, the stud spacings which were most often specified as 16 or 24 in. have been converted to 400 and 600 mm, respectively.

Manufacturers of some certified products, such as gypsum wallboard, acoustical material and steel framing members, are able to provide both metric and yard/pound sizes or modules of the products that are referenced in the illustrated designs. Care should be taken to employ compatible modules, such as in the case of lay-in panels and associated steel framing members. Also, in the case of designs employing gypsum wallboard, particular attention should be given to the location and staggering of joints, as specified in the particular design. Nominal fastener spacings should not be exceeded.

AIR-HANDLING SYSTEMS

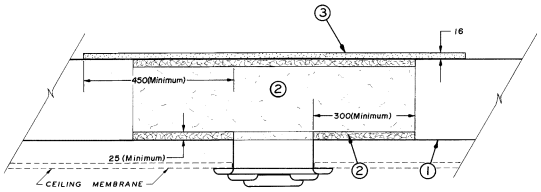
The fire tests are conducted without air movement and, therefore, fire-resistance ratings that have been assigned to floor or roof and ceiling assemblies incorporating provision for such air movement are contingent upon the inclusion of means of effectively stopping the air flow in the event of fire.

Where firestop flaps are specified, it is necessary that they be equipped with spring catches and corrosion-resistant hinges and that flaps designed to close by gravity be installed so as to close in the direction of the airflow. Air duct throat diameters are considered to be the maximum individual diameters appropriate for the design and its assigned fire-resistance ratings and the maximum area of duct given in the designs refers to the aggregate area of supply and return duct openings for each 10 m^2 of ceiling area. Alternative duct outlet protection may be provided by the following illustrated systems when specified in the individual designs. These systems have only been investigated for their comparable effectiveness in retarding the transfer of heat into the plenum area.

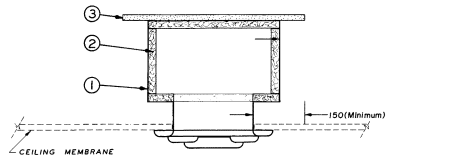
Except where noted, the air diffusers used in the test assemblies were of the surface-mounted type, which also support the surrounding acoustical material by a flange at least 25 mm wide. The use of a lay-in-type air diffuser or return-air grille as an alternative to the surface-mounted type is permitted, provided that, when larger than its associated duct drop, the diffuser or grille pan is of welded or bolted steel construction and is supported on all four sides by steel framing members. The members are supported at their intersection points by hanger wires and the exposed back of the lay-in diffuser or grille pan is protected by labelled batts and blankets specifically certified for that purpose. See Batts and Blankets (BZJZC).

In lieu of ceiling firestop flaps, air-terminal units may be used for the protection of duct outlets in the fire-rated floor and roof and ceiling assemblies. These air-terminal units include the linear slot type, ceiling air diffuser types using flexible Class 1 air duct materials or connectors, and ductless return air grille types. See Air Terminal Units (BZGUC).

Duct Outlet Protection System A



CROSS-SECTION THROUGH LONGITUDINAL CENTERLINE OF DUCT

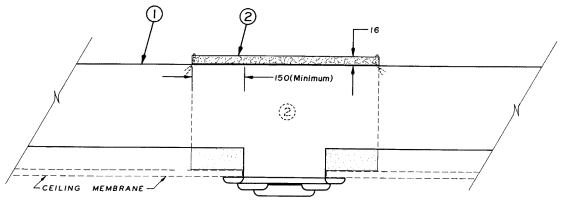


CROSS-SECTION THROUGH TRANSVERSE CENTERLINE OF DUCT OUTLET

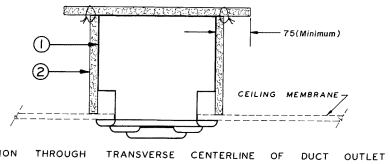
Note: All dimensions are in millimetres.

1. **Steel Air Duct** — Construction and support provisions are specified by the individual fire-resistance designs. Duct outlet intended to be provided with a louvered steel air diffuser, secured with steel fasteners.
2. **Glass-Fibre Duct Lining** — Minimum 25 mm thick, 48 to 80 kg/m^3 density, unfaced or faced with paper, foil, plastic film or asphalt emulsion. Affixed to inside or outside of duct with adhesive or steel fasteners or both. Lining is intended to cover the full perimeter of the duct, extending at least 300 mm beyond the edges of the duct outlet. Lining in bottom of duct is intended to be cut flush with the edges of the duct outlet. The lining is intended to comply with the NBCC for interior linings. Materials that accommodate these requirements are covered under Air Duct Materials (ALLZC) or Mineral and Fibre Boards (BQXRC).
3. **Acoustical Material** — Nominal 16 mm acoustical lay-in panel certified by ULC for use in fire-resistance designs and which has been assigned an appropriate surface burning characteristic. Laid on top of duct, extending at least 75 mm beyond the sides of the duct and 150 mm beyond sides of duct outlet along the width of duct, and extending at least 450 mm beyond sides of duct outlet along length of duct. More than one panel may be butted together to form a panel of the required dimensions. The acoustical material is intended to comply with the requirements of the NBCC for duct outlet coverings. Materials that accommodate these requirements are covered under Acoustical Materials (BIYRC) and Acoustical Materials (BYITC).

Duct Outlet Protection System B
Floor and Ceiling and Beam Assemblies



CROSS-SECTION THROUGH LONGITUDINAL CENTERLINE OF DUCT



CROSS-SECTION THROUGH TRANSVERSE CENTERLINE OF DUCT OUTLET

Note: All dimensions are in millimetres.

1. **Steel Air Duct** — Construction and support provisions as specified in the individual designs. Outlet intended to be provided with a louvered steel diffuser, fastened securely with steel fasteners.
2. **Mineral Wool Batts** — 32 mm thick mineral wool batts, 56 to 88 kg/m^3 density. Top piece extends at least 75 mm beyond the sides of the duct and 150 mm beyond the edges of the duct outlet. Side pieces extend from the lower face of the top piece to the upper face of the ceiling membrane along the entire length of the top piece. Side pieces tied to top piece with 1.2 mm galvanized steel wire, 450 mm OC. The mineral wool batts are intended to comply with the NBCC for duct outer coverings. Materials that accommodate these requirements are covered under Batts and Blankets (BKNVC) and Batts and Blankets (BZJZC).

Light Fixtures

Light-fixture bodies and associated hardware are required to be of steel in order that the assigned fire-resistance rating may not be impaired. It is also necessary that the installed fixtures be without openings into the plenum. Unless otherwise stated in the individual designs, recessed light fixtures are not intended to serve as an outlet and/or inlet for heated ventilating and/or cooled air to a duct, air passage or plenum.

Unless otherwise stated in the section which discusses permissible variations from tested designs and the text related to a particular design, the opening indicated in the individual designs refers to the maximum area of the light fixture for use in each 10 m^2 of ceiling area.

Protection — It is necessary that light fixtures be protected in the precise manner indicated in the illustrated designs with respect to material and form in order that the performance associated with the fire-resistance rating assigned to a design may not be impaired.

Fixtures which do not permit the specified systems of protection and associated suspension details may also impair the fire-resistance rating implied by the design.

Floor and roof and ceiling constructions are tested with a recessed light fixture with sloping sides, 0.68 mm thick painted steel housing, and 0.55 mm thick painted steel ballast cover unless specified otherwise. However, the fire-resistance rating assigned to the assembly is applicable when light fixtures and their corresponding protection systems as specified under Recessed Light Fixtures (CDGAC) are substituted (refer to this category for further information on the requirements for recessed light fixtures and light-fixture protection). In designs where there is no protection box, or a three-sided box, or top protection only is used, the construction of the box specified in the design may be used in lieu of the protection system specified under CDGAC.

Fasteners

In those assemblies employing gypsum wallboard membranes, where reference is made to a specific type of screw for attaching the gypsum wallboard, the following specifications apply:

Screw Type	Length	Shaft Dia., mm	Head Dia., mm Min	Head Dia., mm Max
Type S	Nominal length shall be min length	3.6 - 3.9	8.0	9.3
Type G	Nominal length shall be min length	5.3 - 5.5	7.6	9.3
Type W	Nominal length shall be min length	3.6 - 3.9	8.0	9.3

These screws are self-drilling, self-tapping steel screws with a case-hardened surface, corrosion-resistant treated, flat-top head and No. 2 Phillips design driving recess, 2.6 mm minimum depth.

Steel Floor Units

A small number of designs have two assigned ratings for the unrestrained assembly. This is in consideration of the requirements of CAN/ULC-S101 which, when considering the unrestrained assembly condition, imposes a temperature limit on spans other than those employed in the test assembly. Therefore, there is one unrestrained assembly rating for the tested (or shorter) span, and a lower unrestrained assembly rating for longer spans.

Steel Framing Member Systems

In those assemblies employing steel framing member systems suspended below the structural members, provision for the expansion of the systems under fire conditions is necessary. Such provision may take the form of an expansion joint in each length of main tee, by providing clearance at the ends of each main tee or may be built into the joint design of modular system. When such a condition existed in a fire test, it is indicated in the text of each certified design. In actual building construction the provisions for expansion must be included, even though the length of the main tees may be shorter or longer than that specified by the design.

Roof and Ceiling Constructions

Roof and ceiling constructions are tested with Class C, 3-ply saturated Type 15 felt roof covering applied with hot-mopping asphalt, unless specified otherwise. However, the fire-resistance rating assigned the assembly is applicable when Class A or B built-up roof coverings consisting of alternative layers of felt and asphalt are substituted. See Built-Up Roof Covering Materials (TGFUC) for further information on the requirements for built-up roof coverings.

CONSIDERATION OF VARIATIONS FROM TESTED DESIGNS

This section provides supplementary information that may assist users in relating forms of building construction that are intended to follow the specifications associated with a certified design, but which may, for various reasons, deviate from those specifications.

Size of Assembly and Assembly Components

The fire-resistance ratings established as a result of the application of the test method on structural components protected with materials other than thin-film intumescent and mastic coatings are appropriate for use in building constructions employing structural components having greater size (mass per metre, cross-sectional area or section modulus for lumber or concrete elements) or greater M/D ratios for steel elements; where M is the mass in kilograms per metre and D is the heated perimeter of the steel structural component in metres, than those illustrated in the established designs, thus permitting the extension of test data to structures incorporating spans in excess of those tested. Where an equation is shown, other limitations specific to the individual design are also applicable.

For structural steel elements protected by a thin-film intumescent and mastic coating, the fire-resistance ratings are applicable to structural steel components of the same shape having greater M/D ratios; where M is the mass in kilograms per metre and D is the heated perimeter of the structural component in metres. Where an equation is shown, other limitations specific to the individual design are also applicable.

Where assemblies employ structural members located on more than 1220 mm centres, the data obtained from the fire test and the provisions of the test method accommodate unlimited spacing of the structural members, provided that structural requirements are met, except that, in the case of membrane-protected roof-ceiling assemblies incorporating conventionally designed bridging, the spacing of the structural members is not intended to exceed that employed in the test.

Spacing and Application of Structural Members

Beams (and joists) forming part of an assembly and which are located on more than 1220 mm centres while exposed to standard fire conditions within the limits prescribed by the test method are considered as structural members for the purpose of assigning fire-resistance ratings. Such fire-resistance ratings appear as unrestrained beam ratings in the designs. Where beam designs have been assigned fire-resistance ratings on the basis of their performance when tested together with a section of a representative floor or roof construction rather than as a part of a floor or roof assembly, similar considerations apply with regard to the applicability of the assigned ratings.

Where assemblies employ multiple joists, such that the joists are spaced less than 1220 mm on centres, the temperature and structural performance data obtained from the fire test and the provisions of the test method accommodate spacing of joists in actual building construction up to a maximum of 1220 mm, provided that the structural requirements arising from the increased floor span are met.

Coating Materials

Coating materials include products identified as: 1) Spray-applied Fire-resistive Materials and 2) Thin-film Intumescent and Mastic Coating.

Unless specifically detailed in a design or in the product certification information, the interaction of dissimilar fireproofing materials on the same structural element or at the intersection of structural members, and the adherence of one product to the other, has not been investigated under fire-test conditions.

Unless specifically detailed in a design or in the product certification information, the impact of galvanization applied to structural steel members has not been investigated under fire-test conditions. Galvanization may impact the adhesion of spray-applied fire-resistive materials or mastic and intumescent coatings.

Sprayed-Applied Fire-Resistive Materials

The type of material is specified in each design. Materials that have been investigated for exterior applications are so indicated in the individual designs.

The surfaces on to which the material is intended to be applied must be free of dirt, oil and scale. Mixing and spraying instructions are printed on each bag of material.

The densities shown in the illustrated designs are intended to be considered as the minimum average densities of the material that will provide the performance indicated by the design.

Dry-density measurements may be determined by removing sections of at least 150 x 150 mm randomly selected from the building, subjecting them to 50°C in an oven until constant mass is obtained, followed by accurate weighing, measuring and calculation of the density in kg/m^3. Constant mass is usually obtained after 24 to 48 h exposure within a 50°C oven.

The sprayed-applied fire-resistive material thickness specification given in a design may be considered the minimum average thickness of the individual thickness readings measured in accordance with ANSI/ASTM E605, "Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members." Individual measured thickness, which exceeds the thickness specified in a design by 6 mm or more, is intended to be recorded as the thickness specified in the design plus 6 mm. No individual measured thickness should be more than 6 mm less than the thickness specified in a design.

The thickness of the sprayed-applied fire-resistive material should be corrected by applying additional material at any location where: (1) the calculated average thickness of the material is less than that required by the design, or (2) an individual measured thickness reading is more than 6 mm less than the specified thickness required by the design.

Selected areas of the structural frame and/or floor area are intended to be chosen to obtain representative average thicknesses. Thickness readings on floor or wall areas are intended to be taken symmetrically over the selected area. The average of all measurements should be considered the average thickness of the area. Thickness measurements on beams and/or columns are intended to be made around the member at sections within 300 mm of each other. The average thickness should be considered the average of the readings taken at both sections.

New Requirements for the Use of Sprayed-Applied Fire-Resistive Materials on Primed Steel Surfaces

The surfaces on which the material is intended to be applied must be free of dirt, oil and loose scale. Surfaces may be primed with UL certified primers/paints covered under Primers for Structural Steel (CGJM).

The following method of determining the bond strength of the spray-applied materials only applies to primers or paints not covered under Primers for Structural Steel (CGJM). Unless specifically prohibited in a design, materials identified as Spray-applied Fire-resistive Materials (CHPXC) may be applied to primed or similarly painted wide-flange steel shapes and pipe and tube-shaped columns, provided: (A) the beam flange width does not exceed 305 mm; (B) the column flange width does not exceed 406 mm; (C) the beam or column web depth does not exceed 406 mm; (D) the pipe outer diameter or tube width does not exceed 305 mm; (E) bond tests conducted in accordance with ANSI/ASTM E736, "Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials (SFRM) Applied to Structural Members," should indicate a minimum average bond strength of 80% and a minimum individual bond strength of 50% when compared to the bond strength of the fire-resistive coating as applied to clean uncoated 3.2 mm thick steel plate. The average and minimum bond strength values should be determined based upon a minimum of five bond tests conducted in accordance with ANSI/ASTM E736.

The bond tests need only be conducted when the fire-resistive coating is applied to a primed or similarly painted surface for which acceptable bond strength performance between the primer or other similar material and the fire-resistive coating has not been measured. A bonding agent may be applied to the primed or similarly painted surface to obtain the minimum required bond strength where the bond strengths are found to be below the minimum acceptable values.

As an alternative to the bond test conducted on control samples applied to an uncoated steel plate, the following method may be used for unknown coatings in existing structures. Sections of painted steel are to be coated with a bonding agent compatible with the sprayed material being used on the project. The treated and untreated substrates should be coated with material, cured and subjected to five bond tests each, in accordance with ANSI/ASTM E736. If the failure mode of the sections treated with the bonding agent is 100% cohesive in nature, it will be acceptable to use this bond test value as the control bond strength. The value obtained on the untreated painted section should be compared to the control value using the minimum 80% average, 50% individual bond strength acceptance criteria established in ANSI/ASTM E736.

If condition (E) is not met, a mechanical bond may be obtained by wrapping the structural member with expanded metal lath (minimum 0.927 kg/m^2).

If any of the conditions specified in (A), (B), (C) or (D) are not met, a mechanical break should be provided. A mechanical break may be provided by mechanically fastening one or more minimum 0.927 Kg/m^2 metal lath strips to the flange, web or tube and pipe surface either by weld, screw, or powder-actuated fasteners, on maximum 305 mm centers, on each longitudinal edge of the strip, so that the clear spans do not exceed the limits established in conditions (A), (B), (C) or (D) as appropriate. No less than 25% of the width of the oversize flange or web element should be covered by the metal lath. No strip of metal lath should be less than 90 mm wide.

As an alternative to metal lath, the mechanical break may be provided by the use of minimum 2.5 mm steel studs with minimum 0.36 mm galvanized steel disks if such a system is described in a specific design (usually bottomless trench in an electrified floor design) for the fire-resistive coating being applied. The studs should be welded to the oversize element in rows such that the maximum clear span conforms to conditions (A), (B), (C) or (D) as appropriate. The spacing of studs along each row should not exceed 610 mm and a minimum one stud per 0.165 m^2 should be provided.

Where metal lath strips or steel studs and disks are used, acceptable bond strength as described in item (E) should also be provided. A bonding agent may be applied to the painted surface to obtain the required minimum bond strength where bond strengths to a painted surface are found to be below minimum acceptable values.

Cavities, if any, between the upper beam flanges and open web steel joist (OWSJ) flanges, and the steel floor or roof units are intended to be filled with the fire-resistive coating material applied to the beam and OWSJ flanges, unless specified otherwise in the individual designs.

Adjustment of Thickness of Sprayed-Applied Fire-Resistive Material for Beams of Alternate Size

Alternate-size, W-shape steel beams may be substituted in designs that have been assigned beam ratings and employ sprayed-applied fire-resistive material (700-799, 800-899 and 900-999 designs), provided the thickness of sprayed protection is adjusted accordingly by the following equation: $T_2 = T_1 \times \frac{(M/D)_1 + 38.2}{(M/D)_2 + 38.2}$

Where:

T = Thickness (mm) of spray-applied material

M = Mass of steel beam (kg/m)

D = Heated perimeter of steel section in metres (m), equal to 2d + 3b where d = depth of section and b = flange width

Subscript 1 refers to given beam size and protection thickness specified in the individual designs.

Subscript 2 refers to desired beam size and required protection thickness.

and:

M/D values are not less than 23

T_2 values are not less than 10 mm

Thickness for Thin-Film Intumescent and Mastic Coating

The dry-film thickness of thin-film intumescents and mastic coatings noted in the individual designs should be considered the minimum average thickness of the individual thickness readings measured in accordance with AWCI Technical Manual 12-B, ''Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-Resistive Materials; an Annotated Guide.'' The maximum average dry-film thickness of thin-film intumescents and mastic coatings should not exceed by more than 10% the thickness stated in the established design.

In individual designs consisting of steel columns protected with thin-film intumescent and mastic coatings where such designs include equations for the computation of the fire-resistance ratings or the required dry-film thicknesses of the coatings, the equations are only valid within the limitations specified in the designs. Extrapolation of data outside the specified limitations will invalidate the fire-resistance ratings associated with the designs.

Suspended Membrane Protection

In those assemblies employing membrane protection suspended below the structural members, the depth of the plenum space between the underside of the floor and the top of the ceiling protection may be increased to accommodate deeper structural members without detracting from the indicated performance of the design. However, the minimum dimension between the bottom flange (chord) of the structural member and the protective membrane should be maintained.

Where the spacing of the joists has been increased in a field application beyond that indicated in the illustrated design, and within the 1220 mm limitation referred to above, it may be necessary to provide intermediate suspension points. Such intermediate suspension points are provided by 1.6 mm cold-formed steel channels 51 mm deep with 13 mm flanges, or two 1.2 mm cold-formed steel channels 38 mm deep with 13 mm flanges nested and placed perpendicular to and on top of the lower chords of the joists, and secured to each joist with three loops of 1.2 mm galvanized soft-steel wire. Hanger wire at the intermediate suspension points should be selected on the basis of the requirements in the text of the particular design under consideration.

It should be noted that a ceiling board size or range of sizes is indicated in each design employing suspended membrane protection. The use of ceiling board sizes and suspension system module sizes not covered by the design may impair the performance suggested by the fire-resistance rating assigned to the design.

Steel Floor or Roof Units

In assemblies employing steel floor or roof units in fluted, cellular or blended systems, the variations accommodated by the design have been established on the basis of performance during the fire test. The considerations include structural performance, retention of applied protection or shielding membrane protection and temperature transmission through the units to the unexposed surface of the test assembly. The individual designs provide for a specific type or combination of types of floor or roof units, as well as specifying the minimum depth of section appropriate to the particular design; see the individual certifications under Steel Floor Units (CHWXC) for a detailed breakdown.

The thickness of material specified in the individual designs reflects the actual thickness used in the fire test. Variations other than those provided for in the individual designs or certifications may detract from the indicated fire-resistance rating. Deeper sections consistent with structural requirements may be used as indicated in the individual certifications of floor units.

For constructions that have been subjected to a fire test with steel floor units designed for composite action and loaded so as to develop the theoretical stress contemplated by the design, the list of components associated with the design provides for the use of composite or noncomposite floor units. Conversely, the fire-resistance rating associated with a design may not be maintained if composite units are employed in building construction intended to duplicate the details of an assembly which has been assigned a fire-resistance rating on the basis of its performance when tested with noncomposite floor units.

The connection of the steel floor or roof units to the supporting steel structure is specified in the individual design. For steel floor and roof units when puddle welded connections to the supporting steel beam is specified in the individual design, the puddle welds may be substituted with Power Driven Fasteners that provide equivalent strength capacity.

Roof Insulation

The performance of roof and ceiling assemblies can be significantly affected by the type and thickness of roof insulation employed in the test assembly; a reduction in thickness could lead to prematurely reaching higher temperatures on the unexposed surface, whereas an increase in the thickness could cause early structural failure.

Accordingly, variations from the types and thicknesses of roof insulations provided for in the designs may be expected to detract from the indicated fire-resistance ratings.

Where floor and ceiling assemblies incorporating a concrete topping of 50 mm or more are used as roof constructions, the use of any certified rigid roof insulation and Class A, B or C built-up roof covering on top of the concrete slab would not detract from the assigned fire-resistance ratings.

Transfer of Components from One Design to Another

Structural Members — The standard test method provides for the transfer of structural members from one assembly to another (when selecting a design intended to accommodate the requirements of a particular form of building construction), where:

A. The unrestrained rating of the structural member being transferred is equal to or greater than that of the structural member being replaced.

B. The restrained rating of the structural member being transferred or of the assembly in which that member was tested is equal to or greater than that of the assembly into which the member is being transferred.

C. The capacity for heat dissipation from the structural member in the assembly to which it is being transferred is equal to or greater than that of the assembly in which it was tested.

D. The capacity for heat transfer to the structural member in the assembly to which it is being transferred is equal to or less than that in the assembly in which it was tested.

E. The load deflection characteristics of the assembly to which the structural member is being transferred is equal to or lower than that of the assembly in which it was tested.

In order to transfer structural members, all of the above conditions must be met.

Examples of the specific conditions:

A. **Unrestrained Beam and Restrained Assembly Rating Conditions —** Given an assembly having a 3 h restrained assembly rating and a 2 h unrestrained beam rating, in order to transfer a beam tested as a loaded restrained beam (N and O Series designs), it is necessary to apply the thickness of fire-resistive material sufficient for a 2 h unrestrained beam rating or a 3 h restrained beam rating, whichever is greater. A beam from a ''beam only'' design which does not have a restrained beam rating may only be transferred into assemblies having Restrained Assembly ratings equal to or less than the assembly rating for which that beam is qualified.

In order to transfer a beam tested in another assembly, it is necessary to select an assembly having a 3 h restrained rating and including a 2 h unrestrained beam.

B. **Heat Dissipation Condition —**

Structural members may be transferred into assemblies having an equivalent or greater volume of concrete per unit of floor area.

Structural members may be transferred from an assembly incorporating structural low-density concrete into an assembly incorporating normal-density concrete.

Structural members may be transferred from a roof assembly comprising a metal deck, insulation, and built-up roofing into a protected or unprotected floor assembly utilizing concrete topping.

C. **Heat Transfer Condition —**

Structural members may be transferred from assemblies tested with all cellular or blends of cellular and fluted units into assemblies with all fluted or an equal or lower ratio of cellular to fluted floor units.

Structural members may be transferred from unprotected deck assemblies into protected deck assemblies.

Structural members may be transferred from protected deck assemblies into unprotected deck assemblies, provided that the fire-resistive material is not a thin-film intumescent coating or mastic coating, and the fire-resistive material of the same thickness as is used on the protected deck is applied to the floor construction for a width of 300 mm either side of the top flange.

Structural members may be transferred from protected or unprotected steel deck assemblies into assemblies incorporating soffits of exposed concrete, provided that the fire-resistive material is not a thin-film intumes-

cent coating or mastic coating, and the fire-resistive material is applied to the floor construction to a minimum thickness of 10 mm and for a width of 300 mm either side of the top flange. This requirement is intended to minimize the risk of disruption of the protection to the structural member as a result of spallation of the concrete.

Structural members are not intended to be transferred from protected or unprotected steel deck assemblies into assemblies incorporating soffits of exposed concrete where the fire-resistive material is thin-film intumescent coating or mastic coating.

D. **Load Deflection Condition —**

Noncomposite or composite structural members may be transferred into designs rated with composite structural members.

Only noncomposite structural members may be transferred into designs rated with noncomposite structural members.

It should be noted that these provisions exclude the transfer of structural members tested with floor assemblies to a building construction in the form of a roof construction. The performance of structural members, protected in the same manner, when tested under a floor assembly, is significantly different when tested under an insulated roof assembly, the roof deck assembly representing the more severe test condition upon the structural member.

The foregoing provisions are essentially intended for application to structural members employing directly-applied protection. In floor or roof and ceiling assemblies which incorporate structural members protected with a suspended-ceiling membrane, it is not appropriate to transfer the members to other designs, and a separate fire-resistance rating for the beam is given for information purposes only.

Membrane Protection — The performance and compatibility of certain combinations of components employed in suspended-membrane protection systems have been investigated in connection with the establishment of the designs. Unless specifically indicated in the list of components associated with a design, interchange of components, such as acoustical material employed in the form of ceiling board or tiles and steel framing member suspension systems with those components associated with other certified designs can detract from the indicated fire endurance of the assembly.

The established ratings are not intended to accommodate variations in the design, such as a change of opening sizes per unit area in the ceiling associated with the installation of air ducts, lighting fixtures, etc., on the basis of the apparent performance of these components in assemblies other than the assembly with which they were tested.

Applied Protection — Interchange of forms of applied protection with regard to type, thickness or condition, from one certified assembly to another, may impair the fire-resistance rating implied by the design.

Concrete

Strength — The nominal compressive strength specified in the individual designs may be reduced by 3.5 MPa as a minimum. The maximum compressive strength is not limited. Variations in the strength of the concrete employed in actual building construction will alter the fire endurance of an assembly. The extent of this effect depends on the type of construction and the strength of the concrete.

Thickness — An increase in the thickness of concrete topping will add to the fire endurance of an assembly. Variations in the type of aggregate employed will affect the insulating characteristics of the concrete topping. Where specific data is available concerning such variations, it is usually possible that changes in the fire-resistance rating assigned to a design may be accommodated following engineering studies conducted by ULC during which all factors pertaining to the effect of such changes on the anticipated performance of an assembly can be taken into consideration.

Structural Low-density Versus Normal-density Concrete — Unless specifically noted in a design, the interchange of structural low-density and normal-density concrete is not provided for in certified assemblies. In those cases where provision is made for use of structural low-density and normal-density concrete, such designs have been established on the basis of data obtained from fire tests of specimens employing structural low-density concrete, supplemented by further engineering studies by ULC.

ACOUSTICAL MATERIALS (BYITC)

GENERAL

This category covers acoustical materials intended for use in building assemblies. The fire resistance of these materials relates to the designs covered under Fire Resistance Ratings (BXUVC).

The sound-absorbing qualities, light reflectance, washability and other properties of the materials have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on surface burning characteristics, see Acoustical Materials (BIYRC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

Acoustical Materials (BYITC)−*Continued*

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Acoustical Material."

ADHESIVES (BYWRC)

GENERAL

This category covers adhesives intended for use in building assemblies. The fire resistance of these adhesives relates to the designs covered under Fire Resistance Ratings (BXUVC).

The compatibility of the adhesives with other surfaces and the ability of the adhesives to perform their function in a product, assembly or construction has not been investigated.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Adhesive."

AIR TERMINAL UNITS (BZGUC)

GENERAL

This category covers air terminal units classified as the linear slot type, ceiling air diffuser type, or return air grille type.

Air terminal units are designed to monitor the flow of air through suspended-membrane ceilings and serve as a barrier to heat transmission under fire conditions.

These units may be used for the protection of duct outlets in lieu of ceiling firestop flaps in the fire-rated floor or roof and ceiling assemblies covered under Fire Resistance Ratings (BXUVC). Flexible or rigid duct connectors may be used to affix the units to air-supply or air-return ducts. Where indicated, these units may be eligible for use without ducts.

All air terminal units are intended for installation in accordance with the installation instructions accompanying each unit.

Properties of the units other than those related to fire resistance have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Air Terminal Unit."

BATTS AND BLANKETS (BZJZC)

GENERAL

This category covers batts and blankets intended for use in building assemblies. The fire resistance of these batts and blankets relates to the designs covered under Fire Resistance Ratings (BXUVC).

The thermal conductivity, vapour resistance and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on surface burning characteristics, see Batts and Blankets (BKNVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

Batts and Blankets (BZJZC)−*Continued*

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Batts and Blankets."

BUILDING UNITS (BZXXC)

GENERAL

This category covers building units investigated for use in fire resistance designs as detailed in Fire Resistance Ratings (BXUVC). The building units are composed of proprietary mixes of materials processed into the form of rigid boards, blocks, planks, sheets or slabs and are formed in various sizes, shapes and thickness.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Building Unit."

CAULKING AND SEALANTS (BZYWC)

GENERAL

This category covers caulking and sealants, which are proprietary products used in fire-resistive assemblies. The methods and rates of application are noted in the design illustration and on the container in which the product is furnished.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Caulking and Sealant."

CEILING FIRESTOP FLAP ASSEMBLIES (CABSC)

GENERAL

This category covers ceiling firestop flap assemblies, which may be used for the protection of air-duct openings in lieu of the protection specified in the floor or roof and ceiling construction designs covered under Fire Resistance Ratings (BXUVC) when:

1. Those assemblies incorporate sheet metal air ducts.
2. The individual and total areas of air-outlet openings do not exceed those specified in the individual designs.
3. The ceiling firestop flaps are installed in accordance with the installation instructions accompanying each unit.

RELATED PRODUCTS

The ceiling firestop flaps covered under this category are not intended for use in place of fire dampers. For additional information, see Dampers (EMMEC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S112, "Standard Method of Fire Test of Fire-Damper Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of

Ceiling Firestop Flap Assemblies (CABSC)−*Continued*

this Directory) together with the word "LISTED," a control number, and the product name "Ceiling Firestop Flap Assembly."

COATINGS (CATXC)

This category covers protective, mastic and thin-film intumescent coatings intended for application to steel structural elements and other substrates as indicated in the individual Listings.

Intumescent Coatings, Thin-film (CAVCC)

GENERAL

This category covers thin-film intumescent coatings factory formulated for direct application to building elements utilizing a variety of conventional applications means. The coatings can be either single- or multi-layered, having a total thickness generally within the range of 0.5 mm to 5.0 mm.

The fire resistance of building assemblies using such intumescent coatings relates to the designs covered under Fire Resistance Ratings (BXUVC). Authorities Having Jurisdiction should be consulted before use.

Requirements for Investigation of Environments on Fire-resistive Properties of Intumescent Coatings (These requirements are mandatory as of September 1, 2005)

The influence of various environments on the fire-resistive properties of the coatings has been investigated. These tests were conducted to evaluate the influence of the environments on the intumescent properties of the coatings.

To investigate the influences of environments, the coating material is applied to either steel plates or structural steel shapes and a selected number of samples are subjected to the environments. After the environmental exposures, samples are subjected to the fire exposure defined in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials." The ability of the coating to retain its fire-resistive properties is determined on the basis of a comparative analysis of the fire test data obtained from fire tests on samples that were exposed and fire tests on samples that were not exposed to the simulated environments.

EXTERIOR

Coatings certified in accordance with CAN/ULC-S101 for exterior use are investigated to the following standardized environments: aging, high humidity, carbon dioxide and sulfur dioxide air mixture, ultraviolet light, salt spray, and wet-freeze-dry cycling.

INTERIOR

Coatings certified in accordance with CAN/ULC-S101 for interior use are investigated to the following standardized environments: aging and high humidity. These coatings may be investigated to other environments and the certification information will include the additional environments. Coating certified in accordance with CAN/ULC-S101 for interior use are certified as either Interior General Purpose or for Conditioned Interior Space Purpose.

Interior General Purpose

Coatings certified for Interior General Purpose are subjected to a 180-day high-humidity exposure. For coatings certified as Interior General Purpose, protection of the coating during the application and curing, the construction and the occupancy of the building are intended to be as specified by the manufacturer but limited to interior service.

Conditioned Interior Space Purpose

Coatings certified for Conditioned Interior Space Purpose are subjected to a 250-hour (10-day) high-humidity exposure. Coatings certified for Conditioned Interior Space Purpose are limited to interior climate-controlled spaces having no exposure to condensation, and where the relative humidity and temperature are controlled according to the manufacturer's recommendations or to not more than 75%, whichever is less, during the application and curing of the coating, the construction and the occupancy of the building. Dehumidification or other environmental control equipment or protection may be required to satisfy this condition.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Intumescent Coating, Thin-Film."

Mastic Coatings (CAVNC)

GENERAL

This category covers intumescent mastic coatings that are mixed at the factory and require only the necessary pumping equipment for the application of the materials to building structures. The coatings can be either single- or multi-layered, having a total thickness generally greater than 5.0 mm.

The fire resistance of building assemblies using such intumescent coatings relates to the designs covered under Fire Resistance Ratings (BXUVC).

Authorities Having Jurisdiction should be consulted before use.

Requirements for Investigation of Environments on Fire-resistive Properties of Intumescent Coatings (These requirements are mandatory as of September 1, 2005)

The influence of various environments on the fire resistive properties of the coatings has been investigated. These tests were conducted to evaluate the influence of the environments on the intumescent properties of the coating.

To investigate the influences of environments, the coating material is applied to either steel plates or structural steel shapes and a selected number of samples are subjected to the environments. After the environmental exposures, samples are subjected to the fire exposure defined in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials." The ability of the coating to retain its fire-resistive properties is determined on the basis of a comparative analysis of the fire test data obtained from fire tests on samples that were exposed and fire tests on samples that were not exposed to the simulated environments.

EXTERIOR

Coatings certified in accordance with CAN/ULC-S101 for exterior use are investigated to the following standardized environments: aging, high humidity, carbon dioxide and sulfur dioxide air mixture, ultraviolet light, salt spray, and wet-freeze-dry cycling.

INTERIOR

Coatings certified in accordance with CAN/ULC-S101 for interior use are investigated to the following standardized environments: aging and high humidity. These coatings may be investigated to other environments and the certification information will include the additional environments. Coatings certified in accordance with CAN/ULC-S101 for interior use are certified as either Interior General Purpose or for Conditioned Interior Space Purpose.

Interior General Purpose

Coatings certified for Interior General Purpose are subjected to a 180-day high-humidity exposure. For coatings certified as Interior General Purpose, protection of the coating during the application and curing, the construction and the occupancy of the building are intended to be as specified by the manufacturer but limited to interior service.

Conditioned Interior Space Purpose

Coatings certified for Conditioned Interior Space Purpose are subjected to a 250-hour (10-day) high-humidity exposure. Coatings certified for Conditioned Interior Space Purpose are limited to interior climate-controlled spaces having no exposure to condensation, and where the relative humidity and temperature are controlled according to the manufacturer's recommendations or to not more than 75%, whichever is less, during the application and curing of the coating, the construction and the occupancy of the building. Dehumidification or other environmental control equipment or protection may be required to satisfy this condition.

VAPOUR HAZARD CLASSIFICATION

Mastic coatings may also be classified with respect to vapour hazard due to the presence of solvent or other volatiles. These classifications are based on the following scale:

Ether Rates	100
Gasoline Rates	90 - 100
Alcohol Rates	60 - 70
Kerosene (37.8°C Flash) Rates	30 - 40
Paraffin Oil Rates	10 - 20

In addition, flash point values (closed cup) are given. Where no flash point values appear in the individual certifications, the product shows no flash point in the individual tests.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Mastic Coating."

Mastic Coatings (CAVNC)−*Continued*

Protective Coatings (CAWCC)

GENERAL

This category covers protective coatings intended for use as a means of weather protection when applied to the substrates designated in the individual certifications.

Where indicated in the individual certifications, these coatings have been investigated to determine their resistance to accelerated weathering exposures and to determine their suitability for use as components in fire-rated assemblies.

The fire-rated resistance of building assembly designations incorporating exterior claddings protected by these coatings relates to the designs covered under Fire Resistance Ratings (BXUVC).

Authorities Having Jurisdiction should be consulted before use.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Protective Coating."

Protective Coverings for Foamed Plastic (CAWOC)

GENERAL

This category covers protective coverings for foamed plastic investigated to CAN/ULC-S124, "Standard Method of Evaluation of Protective Coverings for Foamed Plastics."

In order to investigate the effectiveness of these materials for use as protective coverings, the required performance of protective coverings has been related to their insulating capability when exposed to a fire condition represented by the first 10 to 15 minutes of the standard time-temperature curve employed in the conduct of a typical fire endurance test of fire separations for use in buildings as specified in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

The CAN/ULC-S124 test method was developed to respond to the need for a small-scale test to enable the investigation of these protective coverings. It should be noted that no relationship is intended between the performance of samples subjected to this test method and samples subjected to the test described in CAN/ULC-S101 and Listed as Thermal Barriers (XCLAC). Some performance characteristics, such as membrane stability, may differ significantly between these two methods.

Directly-applied protective coverings most often involve the protection of spray-applied thermosetting materials (urethane). The individual Listings restrict their use to these types of plastic unless otherwise indicated.

The following classifications have been included in the current edition of CAN/ULC-S124 in order to accommodate the present requirements of the Authorities Having Jurisdiction, and are not intended to limit the acceptance conditions as they may be specified from time to time by those authorities.

CLASSIFICATION A — If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 15 minutes has not exceeded 140°C average or 180°C at any one thermocouple, the protective cover is accorded a Classification of A.

CLASSIFICATION B — If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 10 minutes has not exceeded 140°C average or 180°C at any one thermocouple, the protective cover is accorded a Classification of B.

CLASSIFICATION C — If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 15 minutes has not exceeded 195°C average or 250°C at any one thermocouple, the protective cover is accorded a Classification of C.

CLASSIFICATION D — If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 10 minutes has not exceeded 195°C average or 250°C at any one thermocouple, the protective cover is accorded a Classification of D.

Authorities Having Jurisdiction should be consulted before use.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufac-

Protective Coverings for Foamed Plastic (CAWOC)−*Continued*

tured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Protective Covering for Foamed Plastic.''

Accessories for Coatings (CAZCC)

GENERAL

This category covers coating accessories intended for installation with certified fire-resistance building assemblies incorporating coatings and as identified in the individual certifications. The accessories have been investigated to determine that, when installed in accordance with the manufacturer's instructions, the accessories do not adversely affect the fire rating of the building assemblies.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Accessory for Coatings.''

CONCRETE BLOCKS (CAZTC)

GENERAL

This category covers solid and hollow concrete blocks intended for use in walls and partitions, constructed of portland cement, fine and coarse aggregates including sand and gravel, cinders, blast furnace slag, burned shale, pumice, etc., using definite cement-aggregate proportions, and of specified compressive strength. They are subject to dimension limitations and are intended for use in bearing and nonbearing walls and partitions.

The fire resistance of building assemblies using concrete blocks relates to the designs covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S120, ''Concrete Masonry Units,'' and CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Concrete Block.''

FIBRE REINFORCEMENT AND CONCRETE ADDITIVES (CBXQC)

GENERAL

This category covers fibre reinforcement and concrete additives investigated for use in fire-resistance designs as detailed in the individual certifications.

Fibre reinforcement is intended to control temperature and shrinkage cracking of structural concrete when proportioned and mixed as specified in the individual certifications. The fibres may be used as an alternative to the welded wire fabric shown in the individual designs. The fibres have not been investigated to increase the structural capacity of the concrete/fibre mixture. The fibres may be used in normal weight or lightweight concrete in the individual designs or series of designs identified in the individual certifications.

For continuous floor spans, CSA A23.3, ''Design of Concrete Structures'', should be consulted if reinforcement is required over the supports for moment loads.

Concrete additives are intended to control temperature and thermal transmission of structural concrete when the mix is proportioned as specified in the individual certifications. The additives have not been investigated to increase the structural capacity of the concrete.

Concrete additives may be added as specified in the individual certifications. CSA A23.3 should be consulted regarding structural design requirements.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

Fibre Reinforcement and Concrete Additives (CBXQC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fibre Reinforcement'' or ''Concrete Additives.''

FACTORY-ASSEMBLED EXTERIOR WALL PANELS (CBZZC)

GENERAL

This category covers factory-assembled exterior wall panels intended to be installed in accordance with the requirements of the ''National Building Code of Canada'' (NBCC), regarding the use of foamed plastics in noncombustible constructions.

These panels do not incorporate an air space and consist of a thermosetting foamed plastic core having a flame spread rating not more than 500, protected on both sides by sheet steel with a thickness of at least 0.38 mm.

The panels are tested in a 3050 mm wide by 3050 mm high wall configuration in accordance with CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.'' These panels have demonstrated the ability to remain in place for a least 10 minutes as required by the NBCC.

The nature of the test specimens is such that:

1. The longest unsupported span of panel joints is 3050 mm, unless otherwise specified in the individual certifications.
2. The minimum spacing between panel joints is 610 mm, unless otherwise specified in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Insulated building units investigated to CAN/ULC-S138, ''Method of Test for Fire Growth of Insulated Building Panels in a Full-Scale Room Configuration,'' are covered under Insulating Building Panels (OERQC).

For information on surface burning characteristics, see Composite Panels (BKRQC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Factory-Assembled Exterior Wall Panels.''

FIRE RESISTANT GLAZING MATERIALS (CCETC)

GENERAL

This category covers fire resistant glazing materials investigated for installation in interior fire resistive wall or partition assemblies as detailed in Fire Resistance Ratings (BXUVC).

The glazing materials have been investigated for use in specified fire resistive wall or partition constructions and information with respect to:

(1) wall construction details and
(2) maximum size of individual glazing panels.

The Standard Test Method does not contain requirements for the aggregate area of glazing panels per of wall unit area or the spatial and structural properties of the dividers between glazing panels. Authorities Having Jurisdiction should be consulted as to the size of the fire resistance glazing that will be acceptable in a given location.

The glazing material provides the insulation properties for compliance with the temperature rise requirement of the Standard Test Method.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Method for Fire Endurance Tests of Building Construction and Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fire Resistant Glazing Materials.''

FLOOR ACCESS DOORS (CCJVC)

GENERAL

This category covers floor access doors intended for installation in concrete or concrete and steel floors to provide service access to areas under the floor, and are intended to be installed in accordance with the installation instructions provided with each floor access door.

Floor access doors are designed for the protection of openings in floors against fire when installed in accordance with ANSI/NFPA 80, "Fire Doors and Other Opening Protectives."

The rating of 1, 1-1/2, 2, 3 or 4 h indicates the duration of exposure to fire. The hourly fire ratings are derived with a superimposed load applied to the door assembly as indicated in the individual certifications.

RELATED PRODUCTS

For information on related products, see Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED", a serial number or issue number, and the following additional information:

FLOOR ACCESS DOOR
FIRE RESISTANCE RATING: ___ h
No. _____

FLOOR-TOPPING MIXTURES (CCOXC)

USE

This category covers proprietary materials that are factory-blended and require the addition of water and other materials to be mixed at the job site in accordance with the manufacturer's instructions shown on the bags. The materials are mixed, placed, and trowelled similar to a concrete topping and are used as nonstructural floor-leveling medium.

Authorities Having Jurisdiction should be consulted before use.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Floor Topping Mixture."

FLOOR MAT MATERIALS (CCQUC)

GENERAL

This category covers floor mat materials used as an underlayment for floor-topping mixtures. These mat materials are intended for use with the floor-topping mixtures identified on the product packaging.

Authorities Having Jurisdiction should be consulted before use.

RELATED PRODUCTS

See Floor-Topping Mixtures (CCOXC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Floor Mat Material."

FOAMED PLASTIC (CCVWC)

GENERAL

This category covers materials in the form of rigid boards, formed units or ingredients for use in forming foamed plastics in the field and intended for use in roof-ceiling or wall and partition designs. The fire resistance of

building assemblies using foamed plastic relates to the designs covered under Fire Resistance Ratings (BXUVC).

The thermal conductivity, vapour resistance and other properties have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Foamed Plastic."

INSULATED CONCRETE FORMS (CDELC)

GENERAL

This category covers insulated concrete forms intended for use in bearing and nonbearing walls and partitions. They are comprised of stackable four-sided foamed plastic shells and integral plastic or metal webs. The webs horizontally span the short dimension of the form at regular intervals. The forms are laid down in multiple courses to create a continuous hollow wall form. The forms are intended to retain freshly mixed concrete with or without reinforcing rods and subsequently to serve as a substrate for various interior and exterior claddings once the concrete core has cured.

The forms have not been investigated for use with cores other than concrete and reinforcing rod (where applicable) as specified in the individual certifications.

Properties of the units other than those relating to fire resistance have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on surface burning characteristics, see Plastic Materials (BTLIC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Insulated Concrete Form."

INSULATION, RIGID ROOF (CDETC)

GENERAL

This category covers rigid board intended for use as insulation material in roof construction.

These materials have been found acceptable for use in hourly-rated, fire-resistant assemblies as detailed in the designs covered under Fire Resistance Ratings (BXUVC).

Properties of the boards other than those related to fire resistance have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials"

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Rigid Roof Insulation."

JOINT COMPOUND (CDFJC)

GENERAL

This category covers joint compounds intended for use in building assemblies. The fire resistance of these compounds relates to the designs covered under Fire Resistance Ratings (BXUVC).

The compatibility of the joint compound with other surfaces and the ability of the joint compound to perform its function in a product, assembly or construction has not been investigated.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Joint Compound."

LIGHT FIXTURES, RECESSED (CDGAC)

GENERAL

This category covers recessed-type light fixtures and their associated protection systems intended for use in membrane-protected, fire-rated assemblies as specified in Fire Resistance Ratings (BXUVC).

There are three groups of light fixtures covered under this category:

1. Those which meet all requirements of the "standard" light fixture and protection system which were actually used in the fire-resistant design.
2. Those light fixtures and associated protection systems which have been tested as specified in "Guide for Tests of Recessed Light Fixtures in Fire Rated Membrane Ceiling Assemblies," and have been found to perform at least as well as the "standard" light fixture and protection system under both Fire Endurance and Normal Operation Test conditions.
3. Those light fixtures peculiar to modular systems, which were actually used in the fire-resistant design.

These light fixtures are suitable for use in fire-resistant assemblies only when installed as specified in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Light Fixture, Recessed."

MAT MATERIALS (CEAVC)

GENERAL

This category covers mat materials investigated for use in fire-resistance designs as detailed in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials." The mat materials are of proprietary composition and intended for use in systems for structural steel members.

Unless specified in the individual designs and certifications as being suitable for exterior-use application, mat materials investigated to CAN/ULC-S101 are intended for interior-use application only.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

The particular test method used to investigate each mat material is specified in the design information.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Mat Material."

MINERAL AND FIBRE BOARDS (CERZC)

GENERAL

This category covers mineral and fibre boards consisting of proprietary mixes of organic and/or inorganic fibres and binders formed into various sizes and thicknesses. The fire resistance of building assemblies using these boards relates to the designs covered under Fire Resistance Ratings (BXUVC).

Properties of the boards other than those related to fire resistance have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on surface burning characteristics, see Mineral and Fibre Boards (BQXRC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Mineral and Fibre Board."

NONCOMBUSTIBLE MATERIALS (CEWAC)

GENERAL

This category covers elementary building materials intended for use as building materials in noncombustible construction, and where the "National Building Code of Canada" stipulates noncombustible materials. The intended use of the product (e.g., insulation) is specified in the individual certifications.

The thermal conductivity, vapour resistance, washability, structural and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S114, "Standard Method of Determination of Non-Combustibility in Building Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Noncombustible Material."

OUTLET BOXES AND FITTINGS CLASSIFIED FOR FIRE RESISTANCE (CEYYC)

GENERAL

This category covers outlet boxes and fittings intended for service penetrations and investigated (1) to determine if their use in already established designs will reduce the fire-resistance rating of the designs covered under Fire Resistance Ratings (BXUVC), or (2) to determine if their use in specific floor or wall constructions will meet the requirements for flame occurrence and temperature rise on the unexposed surface of the assembly when tested in accordance with the time-temperature curve of CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials." When tested in this manner, a fire-resistance rating is assigned to the assembly tested.

Outlet boxes and fittings for service penetrations include those intended for installation in holes drilled in concrete floors to connect to electrical circuits below the floor, and preset inserts which are installed on cellular steel floor units prior to placement of the concrete topping to connect with electrical or telecommunications circuits within the cells of the steel floor units.

Fittings for service penetrations include two types:

(a) Poke-through fittings and cover plates for installation in holes drilled in concrete floors to seal openings when outlet boxes, as described above, are no longer required, or poke-through fittings supplied without proprietary outlet boxes that can be used with generic-type outlet boxes. Fittings also include cover plates, activating rings, grommets, abandonment plates, etc., intended for use with present inserts as described above, to activate the insert or to seal the opening in the event that the outlet is no longer required.

(b) Outlet boxes and fittings only, with no provisions for abandonment.

Outlet Boxes and Fittings Classified for Fire Resistance (CEYYC)−*Continued*

Generally, these outlet boxes and/or fittings are tested in small-scale tests that do not conform with the sample size and loading requirements specified in CAN/ULC-S101. However, the temperatures developed in the furnace and the temperature limits applied to the outlet boxes and/or fittings and the concrete floors are as specified in CAN/ULC-S101. Alternatively, outlet boxes and/or fittings may be tested as part of a full-scale loaded assembly in accordance with CAN/ULC-S101 and, as such, will be restricted for use with those published designs indicated in the specified certifications.

When fittings and/or outlet boxes are tested as described in (2) above, the systems tested are identified by system numbers that begin with the prefix "FOB." These systems are generally intended for installation in floor or wall assemblies as specified in the illustrated systems.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials," and CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name "Fittings and Outlet Box for Service Penetration," and the statement "For Use in Unprotected and Membrane Protected Concrete Floor Assemblies."

PRECAST AUTOCLAVED AERATED CONCRETE (CFMWC)

GENERAL

This category covers autoclaved aerated concrete units, blocks or panels intended for use in floor, roof and wall assemblies. The precast autoclaved aerated concrete is a lightweight, precast building material with a uniform cellular structure. The units are cast at the plant and consist of portland cement, sand or fly ash, lime, gypsum or anhydrite, and a gas-forming agent. The floor and roof units and wall panels are reinforced with corrosion-resistant steel.

The fire resistance of building assemblies using precast autoclaved aerated concrete products relate to the designs covered under Fire Resistance Ratings (BXUVC).

The long-term structural performance of the units has not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Precast Autoclaved Aerated Concrete Block."

PRECAST CONCRETE UNITS (CFTVC)

GENERAL

This category covers precast concrete slabs and planks, hollow or solid, intended for use in bearing walls and floor or roof assemblies of the type indicated in the individual certifications. The units are cast at the plant and consist of portland cement and fine and coarse natural or processed aggregates. The reinforcement may be wire fabric, deformed bars, and/or high tensile strength wire strand. The fire resistance of buildings using precast concrete units relates to the designs covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Precast Concrete Unit."

Precast Concrete Units (CFTVC)−*Continued*

SHEATHING MATERIALS (CHIZC)

GENERAL

This category covers single or laminated materials, rigid or flexible, of various types and thicknesses. The fire resistance of building assemblies using sheathing materials relates to the designs covered under Fire Resistance Ratings (BXUVC).

Properties of the sheathing materials other than those related to fire resistance have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on surface burning characteristics, see Sheathing Materials (BVDVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sheathing Material."

SPRAY-APPLIED FIRE RESISTIVE MATERIAL (CHPXC)

GENERAL

This category covers spray-applied fire-resistive material consisting of proprietary mixes of cementitious materials and fibre or insulative aggregate that are mixed at the factory and require only the addition of water in the field for application of the material to building structures.

Cementitious mixture is spray-applied by mixing the dry formula with water in the correct proportions, whereas sprayed fibre introduces fibre strands during the blending process.

The fire resistance of building assemblies using spray-applied fire-resistive material relates to the designs covered under Fire-resistance Ratings (BXUVC).

Authorities Having Jurisdiction should be consulted before application.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Spray-Applied Fire Resistive Material."

STEEL FLOOR UNITS (CHWXC)

GENERAL

This category covers steel floor units of two types: 1) composite units designed to carry the floor loading in combination with concrete topping, and 2) noncomposite which are, by themselves, designed to carry the floor loading. These units are fabricated at the manufacturer's plant to the proper length and unit design as specified by the purchaser for specific loadings.

These products relate to the designs covered under Fire-resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Steel Floor Unit."

STEEL FRAMING MEMBERS (CIKVC)

GENERAL

This category covers steel framing members designed to function as supporting members for surfacing materials and glazing. The members may be either load-bearing or nonload-bearing. They may be fabricated at the manufacturer's plant to proper length as specified by the purchaser for particular requirements, or cut to length at the construction site.

RELATED PRODUCTS

These products relate to the designs covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Steel Framing Member."

STRUCTURAL CEMENT-FIBRE UNITS (CIYTC)

GENERAL

This category covers structural cement-fibre units consisting of proprietary mixes of processed wood fibres and a cementitious binder molded into forms of various shapes and sizes. The fire resistance of building assemblies using structural cement-fibre units relate to the designs covered under Fire Resistance Ratings (BXUVC).

Properties of the structural cement-fibre units other than those related to fire resistance have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on surface burning characteristics, see Structural Cement-Fibre Units (BVRTC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Structural Cement-Fibre Unit."

STRUCTURAL CONCRETE FIBRE-REINFORCED COMPOSITE SYSTEMS (CIZQC)

GENERAL

This category covers fibre-reinforced composite systems intended for use in conjunction with Mastic Coatings (CAVNC), Intumescent Coatings (CAVCC) and Spray-Applied Fire Resistive Material (CHPXC) in fire-resistive column and beam assemblies. The systems may be used to increase the structural integrity of concrete members in accordance with CAN/CSA-S806, "Design and Construction of Building Components with Fibre-Reinforced Polymers."

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Structural Concrete Fibre-Reinforced Composite System."

STRUCTURAL COMPONENTS (CIZTC)

GENERAL

Structural Components (CIZTC)–*Continued*

This category covers units intended for use in fire-rated assemblies which incorporate proprietary designs of structural components. These units are fabricated at the manufacturer's plant to the proper length and unit design as specified by the purchaser for specific loadings.

These products relate to the designs covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Structural Component."

STRUCTURAL INSULATED PANELS (CIZZC)

GENERAL

This category covers factory-assembled panels consisting of top and bottom skins of oriented-strand board with solid-wood webs and foamed-plastic core material.

Panel thicknesses above the minimum specified in the individual certifications are selected in accordance with the most current edition of CAN/CSA-O86, "Engineering Design in Wood," depending on the span and loading conditions pertinent to the application.

Properties of the structural insulated panels other than those related to fire resistance have not been investigated.

These products relate to the designs covered under Fire Resistance Ratings (BXUVC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Structural Insulated Panel."

UNITS, PARTITION PANEL (CJMRC)

GENERAL

This category covers prefabricated panels consisting of steel facing and framing containing factory or field-applied insulation and gypsum board, or gypsum panels on wood framing with factory or field-applied insulation. These partition panel units are field erected to form interior or exterior bearing or nonbearing walls as shown in the designs in the individual certifications.

See the designs covered under Fire Resistance Ratings (BXUVC).

Properties of the partition panel units other than those related to fire resistance have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Partition Panel Unit."

VERMICULITE AGGREGATE (CJZZC)

GENERAL

This category covers vermiculite aggregate, which is a laminated, micaceous mineral produced by expanding the ore at elevated temperatures, forming a lightweight, laminated, flaky structure predominantly gold in colour.

Upon the addition of water, this aggregate, when proportioned and mixed with the material or materials as specified in the individual designs, forms a plastic mass for use in building structures.

Vermiculite Aggregate (CJZZC)−*Continued*

The finish rating, where indicated in the individual designs, is established on the basis of the length of time that the aggregate affords protection to one face of the combustible studs or joists.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Vermiculite Aggregate."

WALLBOARD (CKNXC)

GENERAL

This category covers wallboard made with cores of various compositions, and intended to be applied to steel or wood joists to form the interior ceilings, and to wood or steel studs to form the finish on interior bearing or nonbearing walls as shown in the individual designs.

See the designs covered under Fire Resistance Ratings (BXUVC).

The finish rating indicated in the individual designs is established on the basis of the length of time that the material affords protection to the face of the combustible joists or studs.

RELATED PRODUCTS

For information on surface burning characteristics, see Wallboard, Gypsum (BWFRC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wallboard."

WALL AND PARTITION FACINGS AND ACCESSORIES (CLBVC)

GENERAL

This category covers facings and accessories intended for use in walls and partitions.

The fire resistance of building assemblies using wall and partition facings and accessories relates to the designs covered under Fire Resistance Ratings (BXUVC).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wall and Partition Facings and Accessories."

THERMAL BARRIERS (XCLAC)

GENERAL

This category covers thermal barriers intended to delay the involvement of foamed plastic in a fire and to protect it from stray ignition sources in accordance with the "National Building Code of Canada," regarding the use of foamed plastics in noncombustible constructions.

In order to investigate the effectiveness of these materials, their performance has been related to their insulating capability and ability to resist falloff and disintegration when a representative assembly is exposed to a condition of fire exposure represented by the standard time-temperature curve, as specified in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

Thermal Barriers (XCLAC)−*Continued*

The requirements for certification are such that when an assembly of the size specified by CAN/ULC-S101 is exposed to the standard test fire, temperatures on the unexposed side of the thermal barrier material should not exceed an average rise of 140°C and individual of 180°C after a period of 10 minutes, and there should be no evidence of falloff or disintegration.

For assemblies that do not exceed an average temperature rise of 140°C and individual of 180°C for a duration greater than 10 minutes with no evidence of falloff or disintegration for the test duration, the individual certifications show the appropriate duration.

Assemblies tested under thermal barriers are also deemed to meet the requirements of Classification B, when tested in accordance with CAN/ULC-S124, "Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic."

Directly-applied thermal barriers most often involve the protection of spray-applied thermosetting materials (urethane). The individual certifications restrict their use to these types of plastic unless otherwise indicated.

Unless otherwise indicated in the individual certifications, thermal barriers are eligible for use in both vertical and horizontal applications and have been qualified accordingly on the basis of their test performance in the horizontal position.

Authorities Having Jurisdiction should be consulted before use.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Thermal Barrier."

THERMAL BARRIER ASSEMBLIES (XCLFC)

GENERAL

This category covers assemblies of materials intended to delay the involvement of foamed plastic in a fire and to protect it from stray ignition sources in accordance with the "National Building Code of Canada," regarding the use of foamed plastics in noncombustible construction.

In order to investigate the effectiveness of these assemblies of materials, their performance has been related to their insulating capability and ability to resist falloff and disintegration when a representative assembly is exposed to a condition of fire exposure represented by the standard time-temperature curve, as specified in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

The requirements for certification are such that when an assembly of the size specified by CAN/ULC-S101 is exposed to the standard test fire, temperatures on the unexposed side of the thermal barrier material should not exceed an average rise of 139°C during the rating period, and there should be no evidence of falloff or disintegration.

Essentially, the illustrated designs reflect the precise dimensions and condition of the sample assembly which has been subjected to the fire endurance test. Within practical limits, a construction must duplicate the illustrated design and the details included in the associated text in order to achieve the indicated fire-resistance rating.

Unless otherwise indicated in the individual certifications, thermal barrier assemblies are suitable for use in the position indicated in the designs (i.e., horizontal or vertical).

Authorities Having Jurisdiction should be consulted before installation.

Numbered items refer to the descriptive text below each drawing. Individual components of a proprietary nature or over which it is necessary to exercise control at the manufacturing location are certified under the Listing and Follow-Up Service of Underwriters Laboratories of Canada. Such items are identified in the text by a black dot thus •. Under these Services, periodic examination and tests are conducted on samples selected at random from current production and stock. Each certified product bears the label or other identification of ULC from which it may be determined that a product is suitable for use as a material in a particular assembly or assemblies.

RELATED PRODUCTS

Components intended for use with thermal barriers are covered under Thermal Barrier Components (XCLZC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

Thermal Barrier Assemblies (XCLFC)−*Continued*

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Thermal Barrier Assembly.''

THERMAL BARRIER COMPONENTS (XCLZC)

USE

This category covers thermal barrier components intended for use in specific assemblies covered under Thermal Barrier Assemblies (XCLFC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Thermal Barrier Component.''

LUMINAIRES AND LUMINAIRE ASSEMBLIES LISTED FOR FIRE RESISTANCE (CDHWC)

USE

This category covers luminaires and luminaire assemblies investigated for use in fire-resistance designs. The fire resistance of building assemblies using luminaires covered by the following certifications relates to the design illustrations under Fire-resistance Ratings (BXUVC). The luminaires and luminaires assemblies are intended for recessed installation in ceilings in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' They have been shown to provide a degree of fire resistance with the floor or roof assemblies with which they have been tested.

These luminaires and luminaire assemblies have been separately investigated and found to comply with applicable electrical requirements and are so labeled.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on a product is the only evidence provided by ULC to identify products that have been produced or serviced under its Listing and Follow-Up Service. The Listing Mark of these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product or service name.

NONMETALLIC PLUMBING SYSTEM COMPONENTS LISTED FOR FIRE RESISTANCE (CEYDC)

GENERAL

This category covers nonmetallic tubing intended for use in fire-resistive assemblies. Certified products and materials are intended to be used and installed in accordance with the applicable Canadian plumbing codes.

The fire resistance of building assemblies using nonmetallic tubing relates to the designs covered under Fire Resistance Ratings (BXUVC).

Physical and other properties of the nonmetallic tubing have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Nonmetallic Plumbing System Component Listed for Fire Resistance.''

BURGLAR ALARM SYSTEMS (CPHZC)

This category covers burglar alarm systems classified as to the type of facility in which they are installed: Financial, Commercial or Residential. They are further grouped according to the type of service provided: Central Station, Monitoring Station or Local. Each central station, monitoring station or local burglar alarm system is also identified as to the type of installation as a premises, safe or vault. The function of these types of burglar alarm systems and the level of service provided are:

CENTRAL STATION SYSTEMS

A central station system is one in which the operations of electrical protection circuits and devices are signalled automatically to, recorded in, maintained and supervised from a central station having trained operators and guards in attendance at all times. Guards are dispatched to make immediate investigation of unauthorized entry or opening of protected properties from which signals are received.

Unless otherwise specified on the certificate issued to a protected property, the central station holds all keys necessary to permit entrance and search of the interior of the property by guards responding to alarms and troubles. The operating force is required to be adequate to allow a two-guard response to all alarms. It is intended that one guard be an employee of the operating company or the local police.

Central station systems may be of the dedicated-line type or multiplex type and the line security may be Level I, Level II or Level III depending on the equipment provided. See CAN/ULC-S304, ''Central and Monitoring Station Burglar Alarm Units,'' for the definition of levels of line security.

The service response time for central station systems may be specified as Level I (1 hour), Level II (2 hours) or Level III (3 hours) and the guard response time may be specified as Level I (15 minutes), Level II (20 minutes) or Level III (30 minutes). See CAN/ULC-S304 for additional information concerning these service response and guard response levels.

MONITORING STATION SYSTEMS

A monitoring station system is one in which the operations of electrical protection circuits and devices are signalled automatically to, recorded in, maintained and supervised from a monitoring station having trained operators in attendance at all times. Operators notify police headquarters to make immediate investigation of unauthorized entry or opening of protected properties from which signals are received.

Monitoring station systems may be of the dedicated-line type or multiplex type and the line security may be Level I, Level II or Level III depending on the equipment provided. See CAN/ULC-S304 for the definition of levels of line security.

The service response time for monitoring station systems may be specified as Level I (2 hours), Level II (4 hours) or Level III (8 hours). See CAN/ULC-S301, ''Central and Monitoring Station Burglar Alarm Systems,'' for additional information concerning these service response levels.

LOCAL ALARM SYSTEMS

A local alarm system is one in which the protective circuits and devices are connected to an enclosed tamper-protected loud-sounding device attached to an outside wall of the building in which the property is situated. Disturbance of the protective devices or unauthorized entry through wired portions of the property automatically causes the sounding device to operate until it is stopped by key control in the possession of the owner, by exhaustion of the power supply, or by a timing element set for a definite period of operation.

Local burglar alarm systems for financial and high-risk commercial institutions may be connected by means of a dedicated line to a remote station facility, such as a local police station for remote registration of an alarm condition. Low-risk commercial institutions and residential systems may be connected to a remote signal-receiving station by means of a digital communicator that may provide opening and closing signals as well as alarm signals for commercial systems.

The installing company is required to respond to troubles or calls for service no later than the business day following the report of trouble by the user for financial and commercial systems and not less than two business days for residential systems. The operation of a local alarm system is under the control of the owner or others interested in the protected property. It is required, however, that certificated local systems be maintained under the care and inspection service of the installing company. Inspections are made at intervals of one year or less for financial and commercial systems and two years or less for residential systems depending on power requirements of the local alarm gong. It is the responsibility of the owner to switch the protection on and off and to report improper functioning of the systems to the installing company.

Representative burglar alarm systems are investigated to determine the suitability of design and construction, circuit arrangements, installation methods, and maintenance service, as these several items have a bearing upon reliability of operation and protection against tampering and/or compromise.

Extent of Protection — Regardless of their class or type, burglar alarm systems installed on individual properties may vary according to the extent of protection provided. The definitions covering the extent of protection available for premises, vaults and safes are given under the respective classification headings.

Property owners should consult underwriting authorities or others having jurisdiction regarding the type of system, line security level and extent of protection recommended for a given hazard or locality.

ALARM RESPONSE GUARD COMPANIES (CPVAC)

GENERAL

This category covers guard companies that process alarm signals and take appropriate action in response to the type of signals received.

Under ULC's Burglar Alarm Service Certificate Program, burglar alarm system installations are certified to provide evidence that the alarm system has been installed, monitored and maintained in accordance with CAN/ULC-S301, "Central and Monitoring Station Burglar Alarm Systems." In addition, these certified systems can be provided with an alarm response certificate from a ULC Listed Alarm Response (Guard) Service Company.

Alarm Response (Guard) Service companies are Listed under the Certificate Service of Underwriters Laboratories of Canada. Under this Service, ULC's representative conducts periodic examinations of the service centres of the Listed guard companies to verify the handling of subscribers' keys, the adequacy of the centre's personnel, and records in accordance with CAN/ULC-S301. Records at each service centre are reviewed for representative periods on certificated systems with respect to items such as elapsed time in responding to alarms, the number of guards dispatched, and any other irregularities occurring on certificated systems.

The alarm response levels for certified alarm systems range from Level 1 to Level 4, with Level 4 being the highest.

Reference should be made to CAN/ULC-S301 for a more detailed description of these response levels.

The locations at which the guard companies maintain service centres are shown in the individual Listings.

ADDITIONAL INFORMATION

For additional information, see Burglar Alarm Systems (CPHZC).

REQUIREMENTS

The basic standard used to investigate the services in this category is CAN/ULC-S301, "Central and Monitoring Station Burglar Alarm Systems."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

COMMERCIAL TYPE SIGNAL RECEIVING CENTRES, FULL AND SHARED SERVICE (CPVXC)

GENERAL

This category covers full and shared service commercial-type signal receiving centres.

Burglar alarm systems classified as commercial type are installed in the premises, vaults or safes of commercial institutions, such as jewellery stores and warehouses. The main function of such systems is to protect the contents of the premises, vaults or safes from burglarious attack. The contents vary over a wide range of materials, such as jewellery, antiques, furniture, appliances, clothes, tires, and general merchandise. A hold-up alarm function may also be incorporated as part of the burglar alarm system.

Commercial signal receiving centre companies are Listed under the Certificate Service of Underwriters Laboratories of Canada. Under this Service, ULC's representative conducts periodic examinations and tests on representative installations in the field to determine the correctness of installations of protective devices and wiring, quality of workmanship, operability of circuits, maintenance, and extent of protection provided in accordance with CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults."

In addition to the above, ULC's representative conducts periodic examinations and tests at signal receiving centres to verify the condition, adjustment and operability of electrical equipment, the handling of subscribers' keys, and the adequacy of the centre's personnel and records in accordance with CAN/ULC-S301, "Central and Monitoring Station Burglar

Commercial Type Signal Receiving Centres, Full and Shared Service (CPVXC)–*Continued*

Alarm Systems." Records at each signal receiving centre are reviewed for representative periods on certificated installations with respect to items such as elapsed time in responding to alarms, and for central station systems, the number of guards dispatched, supervision of subscribers' daily openings and closings, re-openings, and any other irregularities occurring on certificated installations.

The extent of protection provided for premises ranges from Installation Level 1 to Installation Level 4, with Level 4 being the highest. Vaults and safes are provided with Complete Protection. Reference should be made to CAN/ULC-S302 for a more detailed description of these protection levels.

Commercial-type burglar alarm systems fall into one of four categories depending on the type of service provided by the Listed signal receiving centre on behalf of the owner or tenant. The type of service is noted on the Certificate that is issued by the Listed signal receiving centre and may be either Central Station, Full Service Monitoring Station, Shared Service Monitoring Station or Local.

Where a Listed signal receiving centre issues a "Full Service Monitoring Station Certificate" to a commercial-type burglar alarm system installation, the Listed signal receiving centre is expected to provide the installation, maintenance and signal monitoring service associated with the particular installation.

Where a Listed signal receiving centre issues a "Shared Service Monitoring Station Certificate" to a commercial-type burglar alarm system that has been installed by a Listed alarm installing company, a contract exists between the two companies to share the installation, maintenance and monitoring services associated with the particular installation. It is the responsibility of the Listed signal receiving centre to cancel any certificate where the contracted obligations of the Listed alarm installing company are not upheld.

Companies Listed as providing commercial-type central station service are eligible to provide commercial-type monitoring station service (full or shared) and commercial-type local alarm service, and may issue certificates on each of these types of systems.

Companies Listed as providing commercial-type full monitoring station service are also eligible to provide commercial-type shared monitoring station service and commercial-type local alarm service, and may issue certificates on each of these types of systems.

Where commercial-type monitoring station service is shared between two companies, the Listed signal receiving centre is eligible to issue the certificate and both company names are indicated on the certificate.

The locations at which signal receiving equipment and facilities are maintained by Listed alarm companies are shown in the individual Listings.

ADDITIONAL INFORMATION

For additional information, see Burglar Alarm Systems (CPHZC).

REQUIREMENTS

The basic standards used to investigate the services in this category are CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults," and CAN/ULC-S301, "Central and Monitoring Station Burglar Alarm Systems."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

COMMERCIAL TYPE INSTALLATION COMPANIES, SHARED AND LOCAL SERVICE (CPWFC)

GENERAL

This category covers local and shared service installation companies of commercial-type burglar alarm systems.

Burglar alarm systems that are installed in the premises, vaults or safes of commercial institutions, such as jewellery stores and warehouses are classified as commercial-type systems. The main function of such systems is to protect the contents of the premises, vaults or safes from burglarious attack. The contents vary over a wide range of materials, such as jewellery, antiques, furniture, appliances, clothes, tires, and general merchandise. A hold-up alarm function may also be incorporated as part of the burglar alarm system.

Commercial installation companies are Listed under the Certificate Service of Underwriters Laboratories of Canada. Under this Service, ULC's representative conducts periodic examinations and tests on representative installations in the field to determine the correctness of installations of protective devices and wiring, quality of workmanship, operability of circuits, maintenance, and extent of protection provided in accordance with CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults."

Commercial Type Installation Companies, Shared and Local Service (CPWFC)−*Continued*

The extent of protection provided for premises ranges from Installation Level 1 to Installation Level 4, with Level 4 being the highest. Vaults and safes are provided with Complete Protection. Reference should be made to CAN/ULC-S302 for a more detailed description of these protection levels.

Shared commercial-type burglar alarm systems fall into two categories, depending on the type of service provided by the Listed alarm company on behalf of the owner or tenant. The type of service is noted on the Certificate that is issued by the Listed signal receiving centre (for Shared Service Monitoring Station) or by the installation company (for Local Systems).

Where a Listed signal receiving centre issues a "Shared Service Monitoring Station Certificate" to a commercial-type burglar alarm system that has been installed by a Listed alarm installing company, a contract exists between the two companies to share the installation, maintenance and monitoring services associated with the particular installation. It is the responsibility of the Listed signal receiving centre to cancel any certificate where the contracted obligations of the Listed alarm installing company are not upheld.

Where commercial-type monitoring station service is shared between two companies, the Listed signal receiving centre is eligible to issue the certificate and both company names are indicated on the certificate.

Companies Listed as providing commercial-type local alarm service are only eligible to issue certificates on this type of system.

The locations at which the installing companies maintain service centres are shown in the individual Listings.

ADDITIONAL INFORMATION

For additional information, see Burglar Alarm Systems (CPHZC).

REQUIREMENTS

The basic standard used to investigate the services in this category is CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

FINANCIAL TYPE SIGNAL RECEIVING CENTRES, FULL AND SHARED SERVICE (CRXXC)

GENERAL

This category covers full and shared service financial-type signal receiving centres.

Burglar alarm systems classified as financial type are installed in the premises, vaults and safes of financial institutions, such as banks, credit unions or trust companies. The primary function of such systems is to protect the monetary or safety deposit box contents of the vaults or safes from burglarious attack. In many installations, a hold-up alarm function is also provided as part of the burglar alarm system.

Financial signal receiving centre companies are Listed under the Certificate Service of Underwriters Laboratories of Canada. Under this Service, ULC's representative conducts periodic examinations and tests on representative installations in the field to determine the correctness of installations of protective devices and wiring, quality of workmanship, operability of circuits, maintenance, and extent of protection provided in accordance with CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults."

In addition to the above, ULC's representative conducts periodic examinations and tests at signal receiving centres to verify the condition, adjustment, and operability of electrical equipment, the handling of subscribers' keys, and the adequacy of the centre's personnel and records in accordance with CAN/ULC-S301, "Central and Monitoring Station Burglar Alarm Systems." Records at each signal receiving centre are reviewed for representative periods on certificated installations with respect to items such as elapsed time in responding to alarms, and for central station systems, the number of guards dispatched, supervision of subscribers' daily openings and closings, re-openings, and any other irregularities occurring on certificated installations.

The extent of protection provided for premises ranges from Installation Level 1 to Installation Level 4, with Level 4 being the highest. Vaults and safes are provided with Complete Protection. Reference should be made to CAN/ULC-S302 for a more detailed description of these protection levels.

Financial-type burglar alarm systems fall into one of four categories depending on the type of service provided by the Listed signal receiving centre on behalf of the owner or tenant. The type of service is noted on the Certificate that is issued by the Listed signal receiving centre and may be Central Station, Full Service Monitoring Station, Shared Service Monitoring Station or Local. Where a Listed signal receiving centre issues a "Central Station Certificate" or a "Full Service Monitoring Station Certificate" to a financial-type burglar alarm system installation, the Listed signal receiving centre is expected to provide the installation, maintenance and signal monitoring service associated with the particular installation.

Financial Type Signal Receiving Centres, Full and Shared Service (CRXXC)−*Continued*

Where a Listed signal receiving centre issues a "Shared Service Monitoring Station Certificate" to a financial-type burglar alarm system that has been installed by a Listed alarm installing company, a contract exists between the two companies to share the installation, maintenance and monitoring services associated with the particular installation. It is the responsibility of the Listed signal receiving centre to cancel any certificate where the contracted obligations of the Listed alarm installing company are not upheld.

Companies Listed as providing financial-type central station service are eligible to provide financial-type monitoring station service (full or shared) and financial-type local alarm service, and may issue certificates on each of these types of systems.

Companies Listed as providing financial-type monitoring station service (full or shared) are also eligible to provide financial-type local alarm service, and may issue certificates on each of these types of systems.

The locations at which signal receiving equipment and facilities are maintained by Listed alarm companies are shown in the individual Listings.

ADDITIONAL INFORMATION

For additional information, see Burglar Alarm Systems (CPHZC).

REQUIREMENTS

The basic standards used to investigate the services in this category are CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults," and CAN/ULC-S301, "Central and Monitoring Station Burglar Alarm Systems."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

FINANCIAL TYPE INSTALLATION COMPANIES, SHARED AND LOCAL SERVICE (CRYHC)

GENERAL

This category covers local and shared service installation companies of financial-type burglar alarm systems.

Burglar alarm systems that are installed in the premises, vaults and safes of financial institutions such as banks, credit unions or trust companies are classified as financial-type systems. The primary function of such systems is to protect the monetary or safety deposit box contents of the vaults or safes from burglarious attack. In many installations, a hold-up alarm function is also provided as part of the burglar alarm system.

Financial installation companies are Listed under the Certificate Service of Underwriters Laboratories of Canada. Under this Service, ULC's representative conducts periodic examinations and tests on representative installations in the field to determine the correctness of installations of protective devices and wiring, quality of workmanship, operability of circuits, maintenance, and extent of protection provided in accordance with CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults."

The extent of protection provided for premises ranges from Installation Level 1 to Installation Level 4, with Level 4 being the highest. Vaults and safes are provided with Complete Protection. Reference should be made to CAN/ULC-S302 for a more detailed description of these protection levels.

Shared financial-type burglar alarm systems fall into two categories, depending on the type of service provided by the Listed alarm company on behalf of the owner or tenant. The type of service is noted on the Certificate that is issued by the Listed signal receiving centre (for Shared Service Monitoring Station) or by the installation company (for Local Systems).

Where a Listed signal receiving centre issues a "Shared Service Monitoring Station Certificate" to a financial-type burglar alarm system that has been installed by a Listed alarm installing company, a contract exists between the two companies to share the installation, maintenance and monitoring services associated with the particular installation. It is the responsibility of the Listed signal receiving centre to cancel any certificate where the contracted obligations of the Listed alarm installing company are not upheld.

Where financial-type monitoring station service is shared between two companies, the Listed signal receiving centre is eligible to issue the certificate and both company names are indicated on the certificate.

Financial Type Installation Companies, Shared and Local Service (CRYHC)−*Continued*

Companies Listed as providing financial-type local alarm service are only eligible to issue certificates on this type of system.

The locations at which the installing companies maintain service centres are shown in the individual Listings.

ADDITIONAL INFORMATION

For additional information, see Burglar Alarm Systems (CPHZC).

REQUIREMENTS

The basic standard used to investigate the services in this category is CAN/ULC-S302, "Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

BURGLARY-RESISTING GLAZING MATERIAL (CVYUC)

GENERAL

This category covers burglary-resisting glazing material intended for use principally as a substitute for, or in combination with, plate-glass show-window panels.

The material, as indicated in the individual certifications, may be a factory-produced clear or translucent laminated assembly of glass and plastic; a manufactured plastic panel; or a plastic film intended for field installation to form a laminated assembly of glass and plastic.

When applied and installed in accordance with the manufacturer's instructions, the material is designed to resist burglary attacks of the hit-and-run type.

Burglary-resisting glazing material is suitable for indoor, outdoor, or indoor/outdoor use as indicated in the individual certifications.

Indoor use is defined as installation of the glazing material where both sides of the panel are in the interior of a climate-controlled area.

Outdoor use is defined as installation of the glazing material where one or both sides of the panel are exposed to the exterior ambient conditions.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S332, "Burglary Resisting Glazing Material."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Burglary-Resisting Glazing Material."

GAS DETECTORS (CZHAC)

GAS ALARMS AND ACCESSORIES (CZHFC)

GENERAL

This category covers gas alarms intended for use in ordinary indoor locations, mobile homes or recreational vehicles. Some gas alarms, as identified in the individual certifications, may utilize certified accessories to supplement the unit's application. The individual certifications identify the type of gas each unit detects.

Each unit incorporates means for both detection and alarm sounding and may be single-station type or multiple-station type as identified in the individual certifications. A single-station type device is a self-contained unit not arranged for interconnection with other units. A multiple-station type device is a self-contained unit designed for interconnection with other units of the same model designation or other compatible devices within an individual dwelling unit, and functionally arranged so that actuation of one results in alarm sounding by all interconnected units.

Gas alarms are not intended for use in a fire alarm system. In addition, the acceptability of units equipped with ancillary features or interconnections is subject to approval by the Authority Having Jurisdiction.

REQUIREMENTS

The basic standard used to investigate products in this category is CSA 6.19, "Residential Carbon Monoxide Alarming Devices."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gas Alarm and Accessory."

Gas Alarms and Accessories (CZHFC)−*Continued*

FIRE PROTECTIVE SIGNALLING SYSTEMS, SIGNAL RECEIVING CENTRES, FULL AND SHARED SERVICE (DAYIC)

GENERAL

This category covers signal receiving centres that provide fire protective signalling services.

A fire protective signalling system is one in which the operations of electrical fire protection circuits and devices are signalled to, recorded in, maintained and supervised from a fire signal receiving centre having trained operators in attendance at all times whose duty it is, upon receipt of a signal, to notify the subscriber and the local fire department in the event a fire alarm signal is received.

Fire protective signalling system signal receiving centre companies are Listed under the Certificate Service of Underwriters Laboratories of Canada. Under this Service, periodic inspections are made at the signal receiving centres and at certificated installations to determine compliance with CAN/ULC-S561, "Installation and Services for Fire Signal Receiving Centres and Systems."

Where a Listed fire protective signalling system signal receiving centre issues a "Full Service Central Station Fire Protective Signalling System Certificate," the Listed company is expected to provide the installation, maintenance and signal monitoring service associated with the particular installation.

Where a Listed fire protective signalling system signal receiving centre issues a "Shared Service Central Station Fire Protective Signalling System Certificate" to a system that has been installed by a Listed fire protective signalling system installation company, a contract exists between the two companies to share the installation, maintenance and signal monitoring services associated with the particular installation.

The locations at which signal receiving centre companies provide fire protective signalling services are shown in the individual Listings.

REQUIREMENTS

The basic standard used to investigate the services in this category is CAN/ULC-S561, "Installation and Services for Fire Signal Receiving Centres and Systems."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

CENTRAL STATION FIRE ALARM SYSTEM UNITS (DAYRC)

GENERAL

This category covers fire alarm signal receiving, recording and automated station units or systems intended for use within a central signal receiving station or satellite station and associated signal transmitters, subscribers' control units and the like, to be installed within protected premises.

These units are either of the individual-line type, multiplex system type, or are for connection over McCulloh loop circuits for code transmitter operation and are suitable for central station systems for signalling service.

ADDITIONAL INFORMATION

For additional information, see Fire Protective Signalling Systems, Signal Receiving Centres (DAYIC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S559, "Equipment for Fire Signal Receiving Centres and Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Central Station Fire Alarm System Unit," "Fire Alarm Equipment," "Fire Alarm Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

FIRE PROTECTIVE SIGNALLING SYSTEMS, INSTALLATION COMPANIES, SHARED SERVICE (DAYYC)

GENERAL

This category covers signal receiving centres that provide shared service fire protective signalling services.

A fire protective signalling system is one in which the operations of electrical fire protection circuits and devices are signalled to, recorded in, maintained and supervised from a signal receiving centre having trained operators in attendance at all times whose duty it is, upon receipt of a signal, to notify the subscriber and the local fire department in the event a fire alarm signal is received.

Fire protective signalling system installation companies are Listed under the Certificate Service of Underwriters Laboratories of Canada. Under this Service, periodic inspections are made at the signal receiving centres and at certificated installations to determine compliance with CAN/ULC-S561-2003, ''Central Station Fire Protective Signalling Systems and Services.''

Where a Listed signal receiving centre company issues a ''Shared Service Fire Protective Signalling System Certificate'' to a system that has been installed by a Listed fire protective signalling service installation company, a contract exists between the two companies to share the installation, maintenance and signal monitoring services associated with the particular installation.

The locations at which the installation companies maintain service centres are shown in the individual Listings.

ADDITIONAL INFORMATION

For additional information, see Fire Protective Signalling Systems, Signal Receiving Centres (DAYIC).

REQUIREMENTS

The basic standard used to investigate the services in this category is CAN/ULC-S561-2003, ''Installation and Services for Fire Signal Receiving Centres and Systems.''

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

FIRE ALARM SYSTEMS (UWJJC)

This category covers alarm service companies authorized to issue ULC certificates with respect to installed fire alarm systems classified as to type or principle of operation as Central Station, Local, Auxiliary, Remote Station or Proprietary.

The Underwriters Laboratories of Canada Certificate Service for Fire Alarm Systems, which entails a periodic audit of an alarm service company's certification practices, applies only to those systems that are covered by an active unexpired certificate. Systems not covered by a certificate do not necessarily comply with ULC's requirements for certification, and are not subject to ULC audit.

Certificated fire alarm installations are required to be maintained under the care and inspection service of the issuing alarm service company.

Listed companies maintain specially trained personnel and have demonstrated their ability to inspect and test installed fire alarm systems in accordance with CAN/ULC-S536, ''Inspection and Testing of Fire Alarm Systems.''

MISCELLANEOUS DEVICES, FIRE ALARM (UXKVC)

GENERAL

This category covers miscellaneous devices, such as remote alarm relay modules, directional sounders, cellular control channel signal transceiver units, etc., intended for use in fire alarm service equipment.

ADDITIONAL INFORMATION

For additional information, see Fire Protective Signalling Systems, Signal Receiving Centres (DAYIC).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/ULC-S525, ''Audible Signal Devices for Fire Alarm Systems, Including Accessories''

CAN/ULC-S526, ''Visible Signal Devices for Fire Alarm Systems, Including Accessories''

ULC-S527, ''Fire Alarm Control Units''

CAN/ULC-S541, ''Speakers for Fire Alarm Systems, Including Accessories''

CAN/ULC-S559, ''Equipment for Fire Signal Receiving Centres and Systems''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Fire Alarm Device, Miscellaneous,'' ''Fire Alarm Equipment,'' ''Fire Alarm Subassembly,'' ''Fire Alarm and Security Equipment,'' ''Fire Alarm and Security Subassembly,'' or other appropriate product name as shown in the individual Listings.

Miscellaneous Devices, Fire Alarm (UXKVC)−*Continued*

CHIMNEYS, VENTS, FIREPLACES, SPACE HEATERS AND ASSOCIATED EQUIPMENT (DCBRC)

This category covers only those products of the factory-made type not requiring field fabrication, and intended for installation in accordance with the ''National Building Code of Canada.''

These products are investigated to determine the suitability of their construction and performance for the service for which they are intended. It is determined that combustible walls and surfaces adjacent to or in contact with the assembly will not attain unsafe temperatures when the product is installed and used as directed.

CHIMNEYS (DCOZC)

This category covers chimneys consisting entirely of factory-made parts. The parts of each model of chimney are designed to be assembled only with the other parts of that model without requiring field fabrication.

Industrial Chimneys (DCPKC)

GENERAL

This category covers industrial chimneys intended for use in venting industrial process equipment and building heating equipment where the flue gas temperatures do not normally exceed the temperature indicated in the individual certifications and shown on the label. They are also suitable for venting appliances requiring a low-heat-appliance chimney where acceptable to the Authority Having Jurisdiction (AHJ).

Industrial chimneys consist of a factory-furnished support assembly, a number of chimney sections, and wall, ceiling or floor guides or additional supports.

Industrial chimneys are not intended to be enclosed with combustible material, but a chimney that extends through any storey of a building above that on which the connected appliance is located is intended to be enclosed in a noncombustible shaft having a fire-resistant rating of not less than one hour or as required by the AHJ.

ADDITIONAL INFORMATION

For additional information, see Chimneys (DCOZC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C959, ''540°C and 760°C Industrial Chimneys.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Industrial Chimney.''

Medium-heat Type Chimneys (DDQVC)

GENERAL

This category covers factory-built, medium-heat-type chimneys intended for use in venting medium-heat and low-heat appliances.

Medium-heat appliances normally include devices such as alabaster gypsum kilns, annealing furnaces (glass or metal), charcoal furnaces, cold-stirring furnaces, feed driers (direct-fire heated), fertilizer furnaces (cherry to pale red), lehrs and glory holes, lime kilns, linseed oil-boiling furnaces, porcelain biscuit kilns, pulp driers (direct-fire heated), steam boilers operating at over 340 kPa except pressing machine boilers, water-glass kilns, wood distilling furnaces, and wood gas retorts. Medium-heat-type chimneys are also suitable for industrial and commercial-type incinerators.

Each chimney assembly consists of one or more chimney sections and factory-furnished base plates and guy bands for use if needed. Chimney sections are intended to be supported on foundations of masonry or reinforced concrete or other noncombustible material.

These chimneys are intended to be installed with clearance from walls of wood frame construction and from any combustible material as specified on each chimney section and in the individual certifications.

These chimneys are not intended to be enclosed within combustible construction, but an interior chimney is intended to be enclosed in a fire-resistive or noncombustible shaft of appropriate size where the chimney extends through any storey of a building above that on which the connected appliance is located.

Medium-heat Type Chimneys (DDQVC)−*Continued*

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Chimneys (DCOZC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C959, "540°C and 760°C Industrial Chimneys."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Medium-heat Type Chimney."

650 Degree-celsius Factory-built Chimneys (DDTZC)

GENERAL

This category covers 650°C chimneys suitable for use with gas, oil and solid-fuel-fired residential appliances and building heating equipment. When so specified in individual certifications, these chimneys may be used with masonry fireplaces.

Residential appliances include cook ranges, space heaters, warm air furnaces, water heaters, hot water heating boilers, low-pressure steam heating boilers (not over 100 kPa), and domestic incinerators. Building heating equipment includes steam boilers operating at not over 340 kPa, and boilers operating at any pressure over 340 kPa if not over 28 m^3 in size.

Except for installation in single- and two-family dwellings, 650°C chimneys that extend through any storey above that on which the connected appliance is located should be provided with enclosures having a fire-resistance rating equal to or greater than that of the floor or roof assemblies through which they pass.

Each 650°C chimney consists of one or more chimney sections, one or more support assemblies to be employed if the chimney is supported by roof, floor or ceiling joists, a clean-out tee, firestop spacers (where required) to be employed at each floor and ceiling penetrated if a support is not installed at that location, and a roof assembly. Chimneys certified as suitable for masonry fireplaces are intended to employ, when so used, the appropriate fireplace adapter specified in the individual certifications.

Certification of a 650°C chimney is based on the use of ULC labelled components specifically certified for the particular chimney and manufacturer. The performance of the assembly may be affected if the combination of these parts is not used in actual building construction.

These chimneys are intended to be installed to provide clearances to combustible material not less than specified in the individual certifications, on the master label, and in the installation instructions. Clearances at floors, joists and ceilings are intended to be those established by the installation of factory-furnished support and firestop spacers. Unless otherwise indicated in the individual certifications, these chimneys may extend from the basement or first floor through the floors, ceilings, and roof of the building. Portions of the chimney that may extend through accessible spaces should be enclosed in all cases to avoid personal contact with, and damage to, the chimney. Installation instructions are provided with each assembly.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Chimneys (DCOZC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S629, "650°C Factory-Built Chimneys."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "650 Degree-Celsius Factory-built Chimney."

Chimney Connectors and Accessories (DDCYC)

GENERAL

This category covers chimney connectors consisting entirely of factory-made parts designed to be assembled without field fabrication.

These connectors are suitable for use with gas, oil or solid-fuel-fired appliances normally producing flue gases of 650°C or less. Chimney connectors should not penetrate combustible walls or ceilings and are not intended to be enclosed.

Chimney connector wall thimbles consist of a metal flue gas conveying conduit section, protected insulation and/or radiation shields. These wall thimbles are suitable for completion of connections through a combustible wall to a masonry chimney inlet. They are suitable for use with gas, oil and solid-fuel-fired residential appliances.

Chimney Connectors and Accessories (DDCYC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Chimneys (DCOZC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S641, "Factory-Built Chimney Connectors and Wall Pass-Through Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Chimney Connectors and Accessories."

Low-heat Appliance Chimneys (DDXUC)

GENERAL

This category covers low-heat appliance chimneys suitable for use with residential appliances and building heating equipment which burn liquid fuel, natural gas or propane. They may also be used where Type B gas vents are permitted.

Residential appliances include ranges, space heaters, warm air furnaces, water heaters, hot water heating boilers and low-pressure steam heating boilers (not over 100 kPa). Building heating equipment includes steam boilers operating at not over 340 kPa, and boilers operating on any pressure over 340 kPa if not over 28 m^3 in size.

Except for installation in single- and two-family dwellings, factory-built chimneys that extend through any storey above that on which the connected appliance is located should be provided with enclosures having a fire-resistance rating equal to or greater than that of the floor or roof assemblies through which they pass.

Each chimney consists of one or more chimney sections, one or more support assemblies to be employed if the chimney is supported by roof, floor or ceiling joists, a clean-out tee, firestop spacers (where required) to be employed at each floor and ceiling penetrated if a support is not installed at that location, and a roof assembly.

Certification of a factory-built chimney is based on the use of ULC labelled components specifically certified for the particular chimney and manufacturer. The performance of the assembly may be affected if the combination of these parts is not used in actual building construction.

These chimneys are intended to be installed to provide clearances to combustible material not less than that specified in the individual certifications, on the Master label, and in the installation instructions. Clearances at floors, joists and ceilings are intended to be those established by the installation of factory-furnished support and firestop spacers. Unless otherwise indicated in the individual certifications, these chimneys may extend from the basement or first floor through the floors, ceilings, and roof of the building. Portions of the chimney that may extend through accessible spaces should be enclosed in all cases to avoid personal contact with, and damage to, the chimney. Installation instructions are provided with each assembly.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Chimneys (DCOZC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S604, "Factory-Built Type A Chimneys."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Low-heat Appliance Chimney."

Lining Systems for Masonry Chimneys, Factory-built Chimneys and Vents (DDZRC)

GENERAL

This category covers lining systems for installation in new or existing masonry chimneys, factory-built chimneys and vents as indicated in the individual certifications. Chimneys and vents equipped with these lining systems are suitable for the venting of combustion products from residential appliances burning gas, oil, or solid fuel as indicated in the individual certifications.

Residential appliances include fireplaces, space heaters, and central-heating furnaces and boilers.

Each lining system consists of a conduit, either continuous or in sections, designed to be installed as an integral part of a new chimney, or to be

Lining Systems for Masonry Chimneys, Factory-built Chimneys and Vents (DDZRC)−*Continued*

inserted as a retrofit in an existing chimney together with components such as inlet tees, roof flashings and raincaps, as indicated in the individual certifications.

Certification of the lining system is based on the use of ULC labelled components specifically certified for the particular lining system and manufacturer. The performance of the assembly may be affected if the combination of these parts is not used. Installation instructions are provided with each assembly. Installation of lining systems designed for new chimney use should be performed only by skilled masons in chimneys conforming to the requirements of the ''National Building Code of Canada.''

ADDITIONAL INFORMATION

For additional information, see Chimneys (DCOZC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S635, ''Lining Systems for Existing Masonry or Factory-Built Chimneys and Vents,'' and CAN/ULC-S640, ''Lining Systems for New Masonry Chimneys.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lining System for Masonry Chimneys, Factory-built Chimneys and Vents.''

FIREPLACES (DEETC)

GENERAL

This category covers factory-built fireplaces, which consist of a fire chamber assembly, chimney sections, a roof assembly, and other parts, such as 15 and 30° elbows, as designated in the individual certifications. The label on the fire chamber identifies the chimney and other parts which are certified for use with that unit. The use of other chimneys or parts, whether certified or not, may be hazardous and automatically voids the certification. Firestops or firestop spacers are included and are intended to be employed at joist areas where the fireplace chimney extends through floors and ceilings. These parts are designed to be assembled with their companion parts of the same make and model or as certified. Fireplaces are intended for installation in buildings to burn solid fuels commonly used in fireplaces.

Each factory-built fireplace which, in addition, is designed for installation in mobile homes, is similar to an assembly for use in conventional construction with the addition of means for securing to the mobile home structure and for obtaining combustion air from outside of the living space. Such fireplaces are supplied with doors or screens which can effectively close the fireplace opening.

These fireplaces are intended for installation at the clearances indicated in the individual certifications and may be located at any floor level (with the exception of mobile homes) with the chimney extending essentially vertically upward through the floors, ceilings and roof to a height not greater than that indicated in the individual certifications. Elbows (offsets) are intended to be used only as shown in the individual certifications. The minimum height of the chimney outlet above the base of the fireplace for installation in conventional construction should not be less than 4.5 m and for mobile home installation not less than 3.2 m unless otherwise indicated in the individual certifications.

The fire chamber assembly is designed to be installed directly upon and adjacent to combustible building construction. Unless installed with labelled wall shields, the minimum distance from the edge of the fireplace opening to any adjacent combustible wall at right angles to the face of the fireplace should not be less than 900 mm. Where the floor in front of the fireplace is of combustible construction, labelled hearth extensions supplied by the manufacturer are intended to be employed unless exempted in the individual certifications. Noncombustible surface materials may be installed over the hearth extensions. The chimney sections are to be installed to provide clearance to combustible material not less than that specified in the individual certifications and on the chimney sections. If the fireplace chimney is designed to extend through floors and ceilings, the clearances to the floor and ceiling constructions are intended to be those established by the installation of the designated factory-furnished firestops or firestop spacers. Portions of the chimney that may extend through spaces used for living quarters or storage should be enclosed to avoid personal contact with, and damage to, the chimney.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

Fireplaces (DEETC)−*Continued*

The basic standard used to investigate products in this category is CAN/ULC-S610, ''Factory-Built Fireplaces.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fireplace.''

Fireplace Inserts (DEAZC)

GENERAL

This category covers fireplace inserts, which are appliances intended for installation within the fire chamber spaces of masonry fireplaces. They may incorporate complete fire chambers or utilize parts of the fireplace chamber.

These inserts are intended to be installed only in fireplaces complying with the ''National Building Code of Canada,'' and vented by masonry chimneys or 650°C factory-built chimneys. Modifications to the fireplace may be required to achieve the necessary hearth extension and clearances to combustible material specified in the individual certifications.

Optional blowers and glazed screens may be fitted as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Fireplaces (DEETC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S628, ''Fireplace Inserts.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fireplace Insert.''

Liners for Masonry Fireplaces (DEHXC)

GENERAL

This category covers liners intended for use in masonry fireplaces. Each completed liner consists of a back wall, side walls and dome to form the interior portion of a masonry fireplace. A damper, if incorporated, is intended to be a part of the liner. Where air circulation is used to cool the fire chamber, inlet and outlet grilles form part of the certified product. A label on the fire chamber describes the chimney and other parts that are required to complete the installation. The use of parts other than those indicated on the label may be hazardous and will void the certification. Fireplace liners are intended for installation in buildings to burn solid fuels commonly used in fireplaces.

The minimum height of the chimney outlet above the base of the fireplace should not be less than 4.5 m unless otherwise indicated in the individual certifications.

The steel liner assembly is designed for inclusion only in masonry fireplaces conforming to the ''National Building Code of Canada.'' The chimney may be of either conventional tile-lined masonry or a suitable factory-built chimney. Unless installed with labelled wall shields, the minimum distance from the edge of the fireplace opening to any adjacent combustible wall at right angles to the face of the fireplace should not be less than 900 mm. Where the floor in front of the fireplace is of combustible construction, labelled hearth extensions supplied by the manufacturer are to be employed unless exempted in the individual certifications. Noncombustible surface materials may be installed over the hearth extensions.

ADDITIONAL INFORMATION

For additional information, see Fireplaces (DEETC) and Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S639, ''Steel Liner Assemblies for Solid-Fuel Burning Masonry Fireplaces.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Liner for Masonry Fireplaces.''

GAS VENTS (DFFZC)

GENERAL

This category covers vents consisting entirely of factory-made parts. The parts of each model of vent are designed to be assembled with other parts of that model without requiring field fabrication.

Except for installation in single- and two-family dwellings, gas vents that extend through any storey above that on which the connected appliance is located should be provided with enclosures having a fire-resistance rating equal to or greater than that of the floor or roof assembly through which they pass.

Each vent consists of one or more vent sections, a support assembly, firestop spacers to be employed as indicated below, and a roof or termination assembly. Draft hood adapters, elbows and other special fittings may also be provided.

Certification of a gas vent is based on the use of ULC labelled components specifically certified for that particular vent and manufacturer. The performance of the assembly may be affected if the combination of these parts is not used in actual building construction.

Unless otherwise indicated in the individual certifications, these vents are certified only for installation within buildings where they may extend from the basement or first floor through the floors, ceilings, and roof of the building. Portions of the vent that may extend through accessible spaces should be enclosed to avoid personal contact with, and damage to, the vent. That part of the vent which extends above the roof line and those vents certified for exterior use are inherently corrosion resistant or specially coated to resist corrosion. Installation instructions are provided with each assembly.

Vent Types

Gas vents are classified as ''Type B,'' ''Type BW'' or ''Type BH,'' and are so marked on the ULC Master and Material labels.

Type B gas vents are only for venting approved gas appliances with draft hoods as permitted by the Authority Having Jurisdiction, but are not intended for venting recessed heaters, incinerators and appliances required to be connected to chimneys. Unless otherwise indicated in the individual certifications, Type B gas vents are for single- and multi-storey buildings.

Type B gas vents are intended for installation with clearances to combustible construction not less than that specified in the individual certifications and on the ULC Master label and installation instructions. Also, oval Type B gas vents may be installed centrally within a wall space between 50 mm by 100 mm or 50 mm by 150 mm studs, spaced at 400 mm centres. When so installed, the clearance, when less than 25 mm, is intended to be as established by the integral spacers at each vent pipe joint and by the firestop spacers furnished with the vent. The firestop spacers should be placed at the level of each ceiling or floor penetrated by the vent.

Type BW gas vents are only for venting approved vented recessed heaters having inputs not greater than that specified in the individual certifications. These vents are intended to be installed with a solid header plate to serve as a firestop at that point. These vents include provision for direct attachment to the header plate flue outlet of the heater and are suitable for installation in walls and partitions of buildings when the vents are centrally located directly above vented recessed heaters within the space between two studs, 50 mm by 100 mm or larger, and 400 mm on centres. The clearance between the vent and interior surfaces of the wall or partition should not be less than that determined by the header plate, ceiling plate-spacers, firestop spacers, and the integral spacers at each vent pipe joint. The stud space in which the vent is installed should be ventilated at the first ceiling level penetrated by the vent by installation of the ceiling plate-spacers furnished with vent.

Firestop spacers are intended to be placed at each subsequent ceiling or floor level penetrated by the vent. Type BW gas vents should be installed only in the vertical plane. Elbows and horizontal runs are prohibited. Type BW gas vents may be continued through the roof by properly installed Type B gas vents or may be connected to chimneys.

Type BH gas vents are only for venting approved gas appliances intended for negative or positive pressure venting producing flue gases having temperatures specified below.

Class I venting systems are suitable for gas-fired appliances producing flue gas temperatures of more than 135°C but not more than 245°C.

Class II venting systems are suitable for gas-fired appliances producing flue gas temperatures of 135°C, or less, and are classified into four temperature ratings:

A – Up to and including 65°C
B – Up to and including 90°C
C – Up to and including 110°C
D – Up to and including 135°C

Type BH gas vents are intended for installation with clearances to combustible construction not less than that specified in the individual certifications and on the ULC label and installation instructions.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

CHIMNEYS, VENTS, FIREPLACES, SPACE HEATERS AND ASSOCIATED EQUIPMENT (DCBRC)

Gas Vents (DFFZC)−*Continued*

The basic standards used to investigate products in this category are CAN/ULC-S605, ''Gas Vents,'' and ULC-S636, ''Type BH Gas Venting Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas Vent.''

LOW-TEMPERATURE TYPE L VENTS (DFTXC)

GENERAL

This category covers low-temperature Type L vents, which consist entirely of factory-made parts. The parts of each model of each vent are designed to be assembled with the other parts of that model without requiring field fabrication.

Each Type L vent consists of one or more sections, a support assembly, a cleanout tee, firestop spacers to be employed at each floor and ceiling penetrated if a support assembly is not provided at that location, and a roof assembly.

Certification of a Type L vent is based on the use of ULC labelled components specifically certified for the particular system and manufacturer. The performance of the assembly may be affected if the combination of these parts is not used in actual building construction.

Type L vents are intended for use with gas and oil appliances certified as suitable for venting with Type L vents. They may also be used where Type B gas vents are permitted.

Unless otherwise indicated in the individual certifications, these vents may extend from the basement or first floor through the floors, ceilings and roof of the building. Portions of the vent that may extend through accessible spaces should be enclosed in all cases to avoid personal contact with, and damage to, the vent. Except for installation in single- and two-family dwellings, Type L vents that extend through any storey above that on which the connected appliance is located should be provided with enclosures having a fire-resistance rating equal or greater than that of the floor and roof assemblies through which they pass. Installation instructions are provided with each assembly.

Type L vents should be installed to provide clearances to combustible construction not less than that specified in the individual certifications, on the ULC Master label and on the installation instructions. Clearances at floors, joists and ceilings are intended to be those established by the installation of factory-furnished support and firestop spacers.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S609, ''Low Temperature Type L Vents.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Low-temperature Type L Vent.''

PELLET VENTS (DFVAC)

GENERAL

This category covers pellet vents suitable for connection to ULC certified automatically fuelled, particulate-solid-fuel-burning residential appliances where the flue gas temperatures do not exceed 300°C.

Except for installation in single- and two-family dwellings, pellet vents that extend through any storey above that on which the connected appliance is located should be provided with enclosures having a fire-resistance rating equal to or greater than that of the floor or roof assemblies through which they pass.

Each pellet vent consists of one or more vent sections, one or more support assemblies to be employed if the vent is supported by roof, floor or ceiling joists, a clean-out tee, firestop spaces (where required) to be employed at each floor and ceiling penetrated if a support is not installed at that location, and a roof assembly.

Pellet vents certified as suitable for penetration of a combustible exterior wall incorporate a specific use labelled wall thimble assembly.

Certification of a pellet vent is based on the use of ULC labelled components specifically certified for the particular vent and manufacturer. The performance of the assembly may be affected if the combination of these parts is not used in actual building construction.

These pellet vents should be installed to provide clearances to combustible material not less than specified in the individual certifications, on the

Pellet Vents (DFVAC)−*Continued*

master label, and in the installation instructions. Clearances at floors, joists and ceilings are intended to be those established by the installation of factory-furnished support and firestop spacers. Unless otherwise indicated in the individual certifications, these pellet vents may extend from the basement or first floor through the floors, ceilings and roof of the building. Portions of the vent that may extend through accessible spaces should be enclosed to avoid personal contact with and damage to the vent. Installation instructions are provided with each assembly.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C441, ''Pellet Vents.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Pellet Vent.''

MISCELLANEOUS EQUIPMENT (DFVMC)

Heat Shields for Heat-producing Appliances (DFVTC)

USE AND INSTALLATION

This category covers heat shields intended for use with heat-producing appliances and flue connectors for the reduction of required clearances to combustible construction.

Heat shields are intended to be attached to the combustible construction or to the flue connector, as indicated in the individual certifications.

Floor protectors are intended to provide an alternate to 9 mm-thick noncombustible material (or 6 mm covered with sheet metal), as required for ember protection beneath appliances certified for installation on combustible floors.

If indicated in the individual certifications, heat shields may also be employed as floor protectors.

Heat shields and floor protectors are intended to be installed in accordance with the instructions provided with each product.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S632, ''Heat Shields.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Heat Shield for Heat Producing Appliances.''

Solid-fuel-burning-appliance Accessories (DGOUC)

USE AND INSTALLATION

This category covers solid-fuel-burning-appliance accessories consisting of factory-made parts, components or products designed to be assembled, installed or used without field fabrication or modification.

These accessories are intended for use with designated solid-fuel-fired appliances, such as space heaters and fireplaces, as indicated in the individual certifications. The accessories are intended to be installed or used in accordance with the installation or use instructions provided with the product.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C127, ''Composite Fire-Logs.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Solid Fuel Burning Appliance Accessory.''

SPACE HEATERS (DGPVC)

Solid-fuel-fired Space Heaters (DGQBC)

GENERAL

This category covers solid-fuel-fired space heaters, which encompass a variety of freestanding appliances designed for heating their immediate surroundings by radiation and convection without the use of ducting or other supplementary distribution equipment. Those appliances also designed for cooking purposes may be designated in the individual certifications as stoves.

These heaters are designed to operate with their combustion zone normally enclosed. They are designed to burn wood, coal or other solid fuels and may be provided with accessories for the burning of liquid or gaseous fuels as indicated in the individual certifications. They are intended to be connected to separately installed factory-built chimneys or masonry chimneys. Unless otherwise indicated in the individual certifications, the overall chimney height, from the base of the heater, should not be less than 4.5 m. These heaters are suitable for installation at any floor level and are to intended be placed on noncombustible floors or combustible floors provided with noncombustible pads of a type and size described in the individual certifications. The clearances to combustible construction are as indicated for each heater in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Vents, Fireplaces, Space Heaters and Associated Equipment (DCBRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S627, ''Space Heaters for Use with Solid Fuels.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Solid Fuel Fired Space Heater.''

PROTECTIVE COATINGS (DSMZC)

PROTECTIVE COATINGS FOR UNDERGROUND STEEL TANKS (DSNQC)

USE

This category covers paint-like compounds for application, as indicated in the individual certifications, to the exterior surfaces of new steel tanks for the storage of flammable and combustible liquids. They are intended for application to specially prepared surfaces in accordance with the manufacturer's instructions. The use of these coatings is intended to reduce corrosion of the tanks to a low level and, in consequence, reduce the potential fire and environmental hazards associated with the seepage of flammable liquids into the surrounding soil. Coatings certified for application to exterior surfaces of underground tanks are used in conjunction with cathodic protection.

REQUIREMENTS

The basic standard used to investigate products in this category is Part 1 of CAN/ULC-S603.1, ''External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Protective Coating for Underground Steel Tanks.''

COMPUTER PROGRAMS (DVQAC)

SIGNAL RECEIVING CENTRE AUTOMATION SOFTWARE (DAXWC)

GENERAL

This category covers signal receiving centre automation computer programs used by Listed fire and burglar alarm signal-receiving centres to automate the processing of various types of signals received from certificated fire and burglar alarm installations.

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S301, ''Central and Monitoring Station Burglar Alarm Systems,'' and CAN/ULC-S561, ''Installation and Services for Fire Signal Receiving Centres and Systems.''

Signal Receiving Centre Automation Software (DAXWC)−*Continued*

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

CONTAINMENT PRODUCTS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS (ECPRC)

This category covers specially designed receptacles intended for flammable liquids, hazardous waste, etc.

BULK CONTAINERS, NONMETALLIC, FOR COMBUSTIBLE AND NON-COMBUSTIBLE LIQUIDS (ECQQC)

USE AND INSTALLATION

This category covers nonmetallic containers of the non-pressure type intended to bulk store and dispense combustible (such as new lubricating oil) or non-combustible (such as windshield washer, anti-freeze, etc.) liquids. These containers may be of single-wall construction or with secondary containment that dispense liquids by means of gravity or by a non-pressure hand or air-operated pump.

The containers are intended for aboveground stationary installation only and may be covered under Part 4 of the ''National Fire Code of Canada,'' or the regulations of the Authority Having Jurisdiction.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C142.14, ''Nonmetallic Bulk Containers for the Storage and Dispensing of Combustible and Non-Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Nonmetallic Bulk Container for Combustible and Non-Combustible Liquids.''

CARGO TANKS, FLAMMABLE LIQUID (ECSTC)

Accessories, Cargo Tank, Flammable Liquid (ECSWC)

Emergency Valves (ECSZC)

USE

This category covers valves intended for use in product discharge piping of flammable liquid cargo tanks to prevent accidental escape of the tank contents when the piping is subjected to impact. A shear section located outboard of the emergency valve seat is designed to break away, leaving the valve closed or, if it is open, resulting in its closure and containment of the product.

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B621, ''Selection and Use of Highway Tanks, Portable Tanks, Cargo Compartments, and Containers for the Transportation of Dangerous Goods, Classes 3, 4, 5, 6.1, 8, and 9.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Emergency Valve.''

Emergency Vents (ECTEC)

USE

This category covers closures for road transport cargo tanks designed to provide positive venting of a tank compartment during underbody loading and discharging. They also serve as emergency vents in the event of upset and external fire exposure.

Emergency Vents (ECTEC)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B620, ''Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Emergency Vent.''

Manhole Cover and Vent Assemblies (ECTLC)

USE

This category covers closures for the compartments of flammable and combustible liquid cargo tanks. Primarily, they afford access to the tank compartment for filling, cleaning and inspection operations. When closed, they provide venting of the compartment to accommodate changes in temperature and barometric pressure. In the event of vehicle upset, they are intended to prevent excess spillage of the product; but, should the compartment become involved in a fire, they are capable of venting the compartment contents at pressures between 21 and 35 kPa at the maximum flow rate indicated in the individual certifications.

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B620, ''Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Manhole Cover and Vent Assembly.''

PORTABLE TANKS, CONTAINERS AND CANS (ECTXC)

This category covers metallic and nonmetallic portable cans, containers and tanks, typically of smaller size and intended for the short-term storage and transport of fuels, chemicals, or similar flammable and/or combustible liquids. Reusable types are intended for continuous fill/withdraw cycles with the general liquids as indicated in the individual Listings.

Portable tanks are typically in a capacity range of 60 – 660 gal (228 – 2500 L), are not transportable without the use of equipment, and may have integral wheels, hand pumps or other accessories. Portable tanks are primarily intended to store and/or transfer flammable and combustible liquids in commercial applications, and are reusable.

Portable containers are typically in a capacity range of 8.0 – 60 gal (30 – 228 L), are transportable without the use of equipment, and may have integral wheels, handles, or other accessories. Containers are primarily intended to store and/or transfer flammable and combustible liquids in commercial applications, and are reusable.

Portable cans are typically in a capacity range of 1.0 – 8.0 gal (3.8 – 30 L) and are hand-held products with integral closures and spouts. Cans are primarily intended to transport fuel between a supply source and point of use, may be for general consumer use or special commercial use.

This category does not cover bulk containers, portable tanks or similar products intended for the commercial transport of liquid commodities by truck, rail or ship (as defined by Section 4.2.3 of the ''National Fire Code of Canada,'' in accordance with TC SOR/2008-34, ''Transportation of Dangerous Goods Regulations (TDGR),'' CSA B620, ''Highway Tanks and TC Portable Tanks for the Transportation of Dangerous Goods,'' or the ''UN Recommendations on the Transport of Dangerous Goods,'' Part 6, ''Requirements for the Construction and Testing of Packagings, Intermediate Bulk Containers (IBCs), Large Packagings, Tanks and Bulk Containers'').

This category does not cover intermediate bulk containers (IBCs) or similar products Classified for fire resistance and intended for storage in flammable liquid storage warehouses with fire-suppression systems.

Consumer-use Fuel Cans (ECYTC)

GENERAL

This category covers portable, reusable, metal and plastic consumer-use cans intended for the containment and handling (filling, temporary transport, protected storage and dispensing) of up to 25 L (6.6 gal) of general-use fuels for consumer-type motor vehicles, equipment powered by small engines, and portable heaters.

The basic product construction consists of a single- or dual-compartment body with integral handle, openings, and removable closures/spout. Dual-compartment cans are intended to store fuel in the larger compartment, and oil in the smaller compartment.

Consumer-use Fuel Cans (ECYTC)−*Continued*

These products are intended only for CAN/CGSB fuels dispensed at commercial fueling stations as identified under **TYPES AND RATINGS** below, and where filled in accordance with Part 4 of the "National Fire Code of Canada," the regulations of the Authority Having Jurisdiction, and the manufacturer's instructions.

These products have not been investigated for hazards associated with vehicle transport between fueling stations and point of use. These products have also not been investigated for effectiveness of child-resistant closures, or measured for vapor-permeation rates associated with air-quality regulations.

These products are not intended for regular transport, outdoor storage, or for use as marine fuel cans, special-purpose cans or safety cans that may have different applications and/or liquid ratings.

TYPES AND RATINGS

Petroleum fuel (red) — Investigated to CSA B376, "Portable Containers for Gasoline and Other Petroleum Fuels," and intended for one of the following petroleum fuel Class and Types.

Flammable-spark-ignition automotive fuels such as gasoline and low-blend ethanol (max E10) compliant with CAN/CGSB 3.511, "Oxygenated Automotive Gasoline Containing Ethanol," and gas/oil mixtures for 2-cycle engines. Dual-compartment cans are intended for separate storage of gas and oil.

Combustible-compression-ignition automotive fuels such as diesel and low-blend biodiesel (max B5) compliant with CAN/CGSB 3.517, "Automotive (On-Road) Diesel Fuel," CAN/CGSB 3.520, "Automotive Diesel Fuel Containing Low Levels of Biodiesel (B1 – B5)," or CAN/CGSB 3.6, "Off-Road Diesel Fuel." Dual-compartment cans are intended for separate storage of diesel and oil.

Kerosene (blue) — Investigated to CSA B376 and intended only for combustible heating-appliance fuels such as K1 or K2 compliant with CAN/CGSB 3.3, "Kerosene."

RELATED PRODUCTS

Safety-type flammable and combustible liquids cans investigated to ULC/ORD-C30, "Safety Containers," are covered under Safety Cans (EDBYC).

ADDITIONAL INFORMATION

For additional information, see Portable Tanks, Containers and Cans (ECTXC) and Containment Products for Flammable and Combustible Liquids (ECPRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B376 (1980), "Portable Containers for Gasoline and Other Petroleum Fuels."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Metal Container for Petroleum Fuels" or "Portable Plastic Container for Petroleum Fuels."

Portable Plastic Containers for Petroleum Fuels (EDOWC)

GENERAL

This category covers portable plastic or metal containers up to 25 L capacity, intended for the storage and handling of small quantities of petroleum fuels. These containers are not intended to be used as a substitute for metal safety cans.

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B376, "Portable Containers for Gasoline and Other Petroleum Fuels."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Plastic Container for Petroleum Fuels."

Manual Pumps for Use with Portable Containers for Petroleum Fuels (EDOZC)

USE

This category covers manual pumps for use with portable containers intended to be used with liquid petroleum fuels, such as gasoline, diesel or kerosene. The intended use of this pump is to transfer petroleum fuel from a certified portable container, with a maximum capacity of 25 L, to equipment such as chain saws, lawn mowers, lawn tractors and yard maintenance equipment that would normally be refueled from a portable gasoline container.

Manual Pumps for Use with Portable Containers for Petroleum Fuels (EDOZC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Portable Plastic Containers for Petroleum Fuels (EDOZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C79.1-04, "Manual Pumps for Use with Liquid Petroleum Fuels."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Manual Pump for Use with Portable Containers for Petroleum Fuels."

Aboveground Nonmetallic Tanks for Combustible and Noncombustible Liquids (EDXWC)

GENERAL

This category covers stationary nonmetallic, atmospheric-type tanks intended for the indoor aboveground storage of up to 2500 L (660 gal) of Class IIIB combustible liquids or noncombustible liquids (as identified under **TYPES AND RATINGS** below) typically used in commercial or industrial applications.

The basic product construction consists of a plastic single-compartment vessel provided with openings (fill, vent, dispensing, etc.), dispensing system (hand- or air-operated pump, or gravity-feed valve/hose) and other optional accessories (supports, gauges, filters, drip pan, transfer can, etc.) as identified in the individual Listings.

These products are intended to be used in accordance with Part 4 of the "National Fire Code of Canada," regulations of the Authority Having Jurisdiction, and the manufacturer's instructions.

These products are not intended for use as process vessels, bulk shipping containers or portable transfer tanks that have different applications and/or liquid ratings.

TYPES AND RATINGS

($) Gravity-flow Type — Tank provided with a shutoff valve with hose or nozzle to control dispensing of combustible liquids[#] or noncombustible liquids* from the bottom of the tank.

($) Hand- or Air-pump Type — Tank provided with a hand- or air-operated pump with hose or nozzle to control dispensing of combustible liquids[#] or noncombustible liquids* from the top of the tank.

($) Containment Type — "Primary" or "Secondary" as applicable, where:

Primary = Single-wall construction that provides primary containment of, and emergency venting for, the stored liquid.

Secondary = Double-wall construction (primary within an additional shell) that provides secondary containment of, emergency venting for, and monitoring of any leaks from the primary into the interstitial space.

[#] Combustible liquids = Limited to Class IIIB combustible liquids such as processed petroleum oils (new or used lube, hydraulic, machine, or similar oils), processed plant oils (new or used soy, canola, palm, or similar oils), or other oils chemically similar to the representative test liquids.

* Noncombustible liquids = Limited to noncombustible liquids that were specifically investigated under the individual Listings. These can include, but are not limited to, windshield washer fluid, diesel exhaust fluid, detergent solutions, brine solutions, or antifreeze.

RELATED PRODUCTS

Medium-size plastic and composite nonmetallic tanks for oil-burner fuels and other combustible liquids are covered under Aboveground Nonmetallic Tanks for Oil Fuel (EFNIC).

ADDITIONAL INFORMATION

For additional information, see Portable Tanks, Containers and Cans (ECTXC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C142.14, "Nonmetallic Bulk Containers for the Storage and Dispensing of Combustible and Non-Combustible Liquids."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic Bulk Container for Combustible and Noncombustible Liquids."

SAFETY CANS (EDBYC)

GENERAL

This category covers portable, reusable metal or plastic safety cans intended for containment and handling (filling, temporary transport, protected storage and dispensing) of up to 25.0 L (6.6 gal) or hazardous liquids (as identified under **TYPES AND RATINGS** below), typically used in commercial applications. The basic product construction consists of a single-compartment body with integral handle, pressure relief, openings, lids, spouts, strainers, and other features identified under **TYPES AND RATINGS** below.

These products are intended for filling and use in accordance with Part 4 of the ''National Fire Code of Canada,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' regulations of the Authority Having Jurisdiction, and the manufacturer's instructions.

These products have not been investigated for hazards associated with vehicle transport and commercial operations or processes. These products have also not been investigated for effectiveness of child-resistant closures, or measured for vapor-permeation rates associated with air-quality regulations.

These products are not intended for regular transport, outdoor storage, or use as TC safety cans, consumer fuel cans, marine fuel cans or special-purpose cans that may have different applications and/or liquid ratings.

TYPES AND RATINGS

Type I — Cans from 0.5 L to 25 L provided with a single combined opening with short-valved spout and self-closing cap adapted for both pour and fill operations.

Type II — Cans from 5.0 L to 25 L provided with separate openings for fill (with self-closing vent cap) and pour (with self-closing nozzle) operations.

Plastic — Intended only for general-use fuels[#] for motor vehicles, equipment powered by engines, and portable heaters.

Metal — Intended for general-use fuels[#] and similar liquids* used in commercial applications.

[#] General-use fuels = Commercially available fuels covered by and compliant with CAN/CGSB fuel specifications for general-purpose commercial engines (SI or CI) and heating/burning appliances, including CAN/CGSB 3.511 gasoline and gasohol blends (max E10); CAN/CGSB 3.517 on-road diesel, CAN/CGSB 3.520 low-sulfur diesel or CAN/CGSB 3.520 low-sulfur diesel with biodiesel (max B5); CAN/CGSB 3.2 heating oil; and CAN/CGSB 3.3 kerosene.

* Similar liquids = Any stable flammable or combustible liquid with chemical properties similar to the general-use fuels described and having generally accepted chemical compatibility with the metals used in the product, such as heptane, naptha, turpentine, acetone, ketone, etc.

RELATED PRODUCTS

General-use fuel cans investigated to CSA B376, ''Portable Containers for Gasoline and Other Petroleum Products,'' are covered under Consumer-use Fuel Cans (ECYTC).

ADDITIONAL INFORMATION

For additional information, see Portable Tanks, Containers and Cans (ECTXC) and Containment Products for Flammable and Combustible Liquids (ECPRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C30, ''Safety Containers.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Safety Can.''

Lighting Devices, Decorative (EDOAC)

USE

This category covers liquid- and solid-fuelled illuminating products, such as oil lamps and candles.

The lamps are typically designed to operate on oil contained in a pressureless can supplied with each lamp. Unless otherwise indicated in the individual certifications, such containers are nonrefillable. These lamps are intended for installation in public places as a decorative fixture.

The fuel containers are intended for storage in accordance with Part 10 of the ''National Fire Code of Canada.'' The candles, which are intended for outdoor use only, have been investigated for tip-over hazard only.

ADDITIONAL INFORMATION

For additional information, see Safety Cans (EDBYC).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lighting Device, Decorative.''

PORTABLE CONTAINERS (EDOQC)

TANKS FOR FLAMMABLE LIQUIDS (EDQXC)

Aboveground Tanks (EEEVC)

GENERAL

This category covers steel containers of the nonpressure type intended for the aboveground storage of flammable and combustible liquids, such as gasoline, fuel oil, and similar products. These tanks may be of single- or double-wall construction.

The following types of aboveground tanks are covered in this category:

- Horizontal Cylindrical
- Vertical Cylindrical
- Rectangular

Rectangular tanks include ''Workbench Tanks'' for the combined use as a working surface and storage of lubricating oils, and ''Generator Base Tanks'' incorporated into the support structure of diesel engine generators for the storage of the generator's fuel supply.

Provision is made for monitoring the interstitial space of double-wall tanks by vacuum or mechanical (sump) means, and for emergency relief of excess pressure in the interstitial space.

These tanks are intended for aboveground stationary installation only. Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S601, ''Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Aboveground Tank.''

Contained Aboveground Tank Assemblies (EEFLC)

GENERAL

This category covers contained and integral contained aboveground tank assemblies consisting of steel aboveground primary tanks intended for the storage of flammable and combustible liquids within steel secondary containments.

This category also covers secondary containments for aboveground primary tanks for the storage of flammable and combustible liquids intended as retrofit assemblies for existing tanks having maximum 5000 L capacities. They consist of vented steel enclosures having capacities of not less than 110% of the total capacities of the primary storage tanks, maximum 5000 L, for which they are designed.

The design of the contained and integral contained-tank assemblies and secondary containment are such that they are capable of accommodating most forms of leakage from the tanks. The use of such a tank assembly or secondary containment to substitute for conventional dyking requirements is dependent on the appropriate installation code and the Authority Having Jurisdiction.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Aboveground Tanks (EEEVC).

REQUIREMENTS

The basic standard used to investigate contained tank assemblies in this category is CAN/ULC-S653, '' Aboveground Steel Contained Tank Assemblies for Flammable and Combustible Liquids.''

The basic standard used to investigate integral contained tank assemblies in this category is CAN/ULC-S601, ''Standard for Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids.''

The basic standard used to investigate secondary containments for aboveground primary tanks in this category is ULC/ORD-C142.20, ''Secondary Containments for Aboveground Flammable and Combustible Liquid Storage Tanks.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Contained Aboveground Tank Assembly.''

Encased Aboveground Tank Assemblies (EEFQC)

USE

Encased Aboveground Tank Assemblies (EEFQC)−*Continued*

This category covers concrete-encased aboveground tank assemblies intended for the outdoor storage of flammable and combustible liquids. The design provides a containment that is capable of accommodating most forms of leakage from the tanks and, in addition, affords a degree of protection against impact, vandalism and external fire. The use of such an assembly to substitute for conventional dyking requirements is dependent on the appropriate installation code and the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Aboveground Tanks (EEEVC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C142.5, ''Aboveground Concrete Encased Tank Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Encased Aboveground Tank Assembly.''

Protected Aboveground Tank Assemblies (EEGLC)

GENERAL

This category covers protected aboveground tank assemblies intended for the outdoor storage of flammable and combustible liquids. The design provides a secondary containment that is capable of containing most forms of leakage from the tanks and, in addition, an encasement that affords a degree of protection against vehicle impact, small arms attack, and external fire.

In assessing resistance to fire, tests are conducted in a furnace environment where the temperatures are controlled on either a standard time temperature curve (1010°C after 2 h) or a rapid rise temperature curve (1093°C after 3 minutes). Compliance is indicated in the individual Listings.

The use of such an assembly to substitute for conventional dyking requirements is dependent on the appropriate installation code and the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Aboveground Tanks (EEEVC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S655 (1998), ''Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Protected Aboveground Tank Assembly.''

Special-purpose Aboveground Tanks (EFVTC)

USE

This category covers tanks intended for specific applications as described in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Aboveground Tanks (EEEVC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C142.17, ''Special Purpose Relocatable Aboveground Vertical Tanks for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Special Purpose Aboveground Tank.''

Oil-water Separators, Aboveground (EGZIC)

GENERAL

This category covers oil/water separators intended to separate oil and other liquid and solid hydrocarbons from water by the influence of gravity screens and baffles. The devices are similar in materials and methods of construction to tanks and are intended for aboveground installations in accordance with the requirements of the Authority Having Jurisdiction.

Oil/water separators are coated internally with a ULC labelled corrosion retardant and fuel-resistant coating.

The effectiveness of the oil/water separation function has not been investigated except when specifically referenced in the individual certifications.

Oil-water Separators, Aboveground (EGZIC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Aboveground Tanks (EEEVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S656, ''Oil-Water Separators.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Oil-Water Separator, Aboveground.''

Utility Tanks, Aboveground (EEGXC)

GENERAL

This category covers steel tanks of the nonpressure type that are intended for the aboveground storage of flammable and combustible liquids, such as gasoline, fuel oil and similar products. These tanks are designed to allow for relocation as required by their intended service. They have individual capacities up to 5000 L.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S601, ''Shop Fabricated Steel Abveground Tanks for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Utility Tank, Aboveground.''

Tanks for Used Oil (EEINC)

GENERAL

This category covers tanks intended for the storage, collection and removal of used oil and other similar products. These tanks may be of single, double wall, contained or integral construction. They may be provided with means for manual filling and incorporate lockable fill openings.

These tanks are of a nonpressure type and are intended for stationary installation in accordance with the requirements specified by the Authority Having Jurisdiction.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S652, ''Tank Assemblies for the Collection, Storage and Removal of Used Oil.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Tank for Used Oil.''

Tanks for Fuel Oil and Lubricating Oil, Aboveground Steel (EFGRC)

USE AND INSTALLATION

This category covers aboveground steel tanks of the nonpressure type having capacities not exceeding 2,500 L, intended for the storage of fuel oil and lubricating oil.

These tanks are intended for installation inside or outside buildings. Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S602, ''Aboveground Steel Tanks for Fuel Oil and Lubricating Oil.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Aboveground Steel Tank for Fuel Oil and Lubricating Oil.''

Aboveground Nonmetallic Tanks for Oil Fuel (EFNIC)

GENERAL

Aboveground Nonmetallic Tanks for Oil Fuel (EFNIC)−*Continued*

This category covers aboveground nonmetallic tanks of the nonpressure type intended for installation inside or outside buildings for the storage and supply of fuel oil. They are intended for stationary installations and use in accordance with Part 4 of the ''National Fire Code of Canada,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' and regulations of the Authority Having Jurisdiction.

They may be constructed either as single wall or tanks with secondary containment.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C80.1, ''Aboveground Non-Metallic Tanks for Fuel Oil.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Aboveground Non-Metallic Tank for Oil Fuel.''

Underground Tanks (EGHXC)

GENERAL

This category covers shop-fabricated horizontal cylindrical tanks intended for the fixed underground storage of noncorrosive, stable, flammable and combustible liquids at atmospheric pressure in capacities of up to 250,000 L (66,045 U.S. gal) and diameters of up to 4.0 m (13.1 ft). The combinations of construction materials, containment types, designs, options and liquid ratings are described under **TYPES AND RATINGS** below.

These tanks are intended for installation and use in accordance with Part 4 of the ''National Fire Code of Canada,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' API 1615, ''Installation of Underground Petroleum Storage Systems,'' ''CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products,'' and/or other requirements of the Authority Having Jurisdiction, and the manufacturer's instructions.

These tanks are provided with one or more containment shells and/or compartments, top openings for pipe connections (for fill, withdraw, monitor, etc.), striker plates, and may optionally be provided with manway openings, connecting rings and lift lugs. Access risers, sumps, piping and other accessories that may be connected to the tank are not covered under this category.

These tanks are not provided with an internal-corrosion-protection, upgrade or lining system investigated by UL, and do not cover field erected or refurbished types, pressure vessels or processing applications that may occur in tanks.

TYPES AND RATINGS

The tank materials, containment types, designs, options and liquid ratings, as indicated in the individual Listings, are defined as follows:

(+) ''Steel'' or ''Fiberglass'' tank material identification as applicable, and

(++) ''Secondary Containment'' or ''Double Wall'' as applicable per the appropriate standard's engineering markings.

Steel Tanks

These are all-steel tanks constructed and investigated to ULC-S603, ''Steel Underground Tanks for Flammable and Combustible Liquids,'' and are not provided with an external corrosion-protection system investigated by UL. These tank constructions may be primary (single wall) or secondary (double wall) types, and are suitable for containment of general fuels and similar flammable and combustible liquids, as identified in the **(*)** liquid ratings:

(+) underground tank for (*) — A steel primary-containment (single wall) tank with one or more compartments.

(+) (++) underground tank for (*) — A steel primary-containment tank directly (in contact with primary) or indirectly (separated by standoffs from primary) wrapped in a secondary-containment (double wall) steel shell to at least 300° and 100% of the heads. The external shell provides both secondary containment and interstitial monitoring.

Fiberglass Tanks

These are all-fiberglass tanks constructed and investigated to ULC-S615, ''Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids.'' These tank constructions may be primary (single wall) or secondary (double wall) types, and are suitable for containment of general fuels and similar flammable and combustible liquids, as identified in the **(#)** liquid ratings:

(+) underground tank for (#) — A fiberglass primary-containment (single wall) tank with one or more compartments.

(+) (++) underground tank for (#) — A fiberglass primary-containment tank directly (in contact with primary) or indirectly (separated by standoffs from primary) wrapped in a secondary-containment (double wall) fiberglass shell to at least 300° and 100% of the heads. The external shell provides both secondary containment and interstitial monitoring.

Underground Tanks (EGHXC)−*Continued*

Corrosion-resistant Tanks

These are base steel tanks (ULC-S603 primary or secondary types) provided with an external corrosion-protection system constructed and investigated in accordance with CAN/ULC-S603.1, ''External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids.'' These tank constructions may be Cathodic (Section 5), Composite (Section 6), Jacketed (Section 7) or Coated (Section 8) types, and are suitable for containment of general fuels and similar flammable and combustible liquids, as identified in the **(*)** liquid ratings:

Cathodically protected underground tank for (*) — A steel primary (single wall) tank with a pre-engineered, galvanic-type cathodic protection system (anode pack with connecting wires and dielectric coating and bushings) that provides external corrosion protection.

Cathodically protected (++) underground tank for (*) — A steel secondary containment (double wall) tank with a pre-engineered, galvanic-type cathodic protection system (anode pack with connecting wires and dielectric coating and bushings) that provides external corrosion protection.

Coated underground tank for (*) — A steel primary (single wall) tank covered directly (bonded) with a thin nonmetallic cladding (min 1.8 mm PUR) which provides external corrosion protection.

Coated (++) underground tank for (*) — A steel secondary-containment (double wall) tank covered directly (bonded) with a thin nonmetallic cladding (min 1.8 PUR) which provides external corrosion protection.

Composite underground tank for (*) — A steel primary (single wall) tank covered directly (bonded) with a thick nonmetallic cladding (min 2.5 FRP) which provides external corrosion protection.

Composite (++) underground tank for (*) — A steel secondary-containment (double wall) tank covered directly (bonded) with a thick nonmetallic cladding (min 2.5 FRP) which provides external corrosion protection.

Jacketed underground tank for (*) — A steel single-wall primary tank completely contained within a nonmetallic external tank jacket (min 2.5 mm FRP, PUR, PE or Polyurea) which provides secondary containment, interstitial leak monitoring and external corrosion protection.

Liquid Ratings

The above tank types are additionally rated in the individual Listings for either one or more general fuel blend ranges, or flammable liquids as follows:

(#) Petroleum Products, Oxygenated Fuel Blends and Oxygenates — Combines all of the following ratings for commercially available fuels covered by CGSB fuel regulations and compliant with CGSB fuel specifications for general-purpose commercial engines (SI or CI) and heating/burning appliances:

Petroleum Products — Includes petroleum hydrocarbon fuels without bio-blends CGSB 3.511 gasoline (E0), CGSB 3.517 diesel (B0), CGSB 3.2 fuel oil (B0), CGSB 3.3 kerosene (K1 and K2); and similar flammable or combustible liquid petroleum derivatives, such as fuel components (cetane, hexane, heptane, iso-octane, etc.), and oils (lube, hydraulic, machine, etc.).

Oxygenated Fuel Blends — Includes all ''Petroleum Products'' liquids; plus petroleum hydrocarbon fuels with low-biofuels blends, such as CGSB 3.511 gasoline and ethanol blends (max E10), CGSB 3.520 diesel and biodiesel blends (max B5), CGSB 3.2 fuel oil and bioheat blends (max B5).

Oxygenates — Includes all ''Oxygenated Fuel Blends'' liquids; plus higher-blend oxygenated fuels mixing CGSB 3.511 gasoline and ethanol, such as E85, and common-fuel-blend stocks and components, such as pure or denatured methanol and ethanol.

(*) Flammable Liquids — Includes all liquids in the three ''General Fuels'' ratings above; plus other stable flammable or combustible liquids with chemical properties similar to the general fuels and liquids described above having generally accepted chemical compatibility with the materials used in the product, such as other alcohols and solvents (pentane, hexanol, acetone, ketone, etc.), or other petroleum derivatives (xylene, toluene, naphtha, turpentine, etc.).

RELATED PRODUCTS

See Underground Tank Lining Systems (EGAYC) for nonmetallic internal tank lining and coating systems.

See Underground Tank Upgrade Systems (EGSJC) for nonmetallic internal tank containment and rating upgrade systems.

REQUIREMENTS

The basic standard used to investigate products in this category is one or more of the following:

Steel tanks: ULC-S603, ''Steel Underground Tanks for Flammable and Combustible Liquids''

Fiberglass tanks: ULC-S615, ''Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids''

Corrosion-resistant tanks: CAN/ULC-S603.1, ''External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids,'' with specific requirements for:

Cathodic systems per Section 5, ''Cathodically Protected Tanks''

Coated tanks per Section 8, ''Coated Tanks''

Composite tanks per Section 6, ''Composite Tanks (Clad)''

Underground Tanks (EGHXC)−*Continued*

Jacketed tanks per Section 7, ''Jacketed Tanks''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate tank construction for the individual Listings as indicated in **TYPES AND RATINGS** above.

The standard number(s) for the applicable tank type as indicated under **REQUIREMENTS** above may also be identified in the ULC Mark.

Underground Tank Upgrade Systems (EGSJC)

GENERAL

This category covers nonmetallic pre-engineered secondary containment upgrade systems intended to be field installed inside of existing atmospheric-type underground horizontal cylindrical fuel storage tanks. These upgrade systems form an internal structural shell that is bonded directly to the existing tank, provide both secondary containment and interstitial monitoring, and may provide additional features, such as minor repairs of the core tank. The combinations of system types, materials and liquids ratings are described under **TYPES AND RATINGS** below.

Upgraded tanks are intended for installation and use in accordance with Part 4 of the ''National Fire Code of Canada,'' ANSI/NFPA 30, ''Flammable and Combustible Liquid Code,''CSA B139, ''Installation Code for Oil-Burning Equipment,'' API 1615, ''Installation of Underground Petroleum Storage Systems,'' ''CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products,'' and/or other requirements of the Authority Having Jurisdiction, and the manufacturer's instructions.

Since upgrade systems are intended for field installations that require special equipment, training and procedures not covered by ULC's normal Follow-Up Service inspections at a factory, these products are Listed by Report. The factory Follow-Up Service only includes inspection of the component liner material(s), and markings and instructions packaged with each field lining kit.

Under this form of Listing, a ULC Report is prepared which describes the complete upgrade system process and detailed instructions for proper installation including but not limited to the minimum core tank design and condition criteria, cleaning and internal surface preparation, upgrade application and curing, and upgrade property and leak testing. Copies of the Report are available from the Listee.

TYPES AND RATINGS

The tank upgrade system types, materials, features and liquid ratings, as indicated in the individual Listings, are defined as follows:

(*) Underground Tank Upgrade System Suitable for (#) — Nonmetallic upgrade systems of thick composite layers or panels directly applied (bonded) to the internal wall of an underground tank that provides secondary containment and interstitial monitoring. Upgrade systems additionally provide internal corrosion protection for steel tanks.

(*) Underground Storage Tank Type — Investigated for use in steel, fiberglass, or steel and fiberglass underground tanks.

(#) Petroleum Products, Oxygenated Fuel Blends and Oxygenates — Combines all of the following ratings for commercially available fuels covered by CGSB fuel regulations and compliant with CGSB fuel specifications for general-purpose commercial engines (SI or CI) and heating/burning appliances:

Petroleum Products — Includes petroleum hydrocarbon fuels without bio-blends CGSB 3.511 gasoline (E0), CGSB 3.517 diesel (B0), CGSB 3.2 fuel oil (B0), CGSB 3.3 kerosene (K1 and K2); and similar flammable or combustible liquid petroleum derivatives, such as fuel components (cetane, hexane, heptane, iso-octane, etc.), and oils (lube, hydraulic, machine, etc.).

Oxygenated Fuel Blends — Includes all ''Petroleum Products'' liquids; plus petroleum hydrocarbon fuels with low-biofuels blends, such as CGSB 3.511 gasoline and ethanol blends (max E10), CGSB 3.520 diesel and biodiesel blends (max B5), CGSB 3.2 fuel oil and bioheat blends (max B5).

Oxygenates — Includes all ''Oxygenated Fuel Blends'' liquids; plus higher-blend oxygenated fuels mixing CGSB 3.511 gasoline and ethanol, such as E85, and common-fuel-blend stocks and components, such as pure or denatured methanol and ethanol.

FACTORS NOT INVESTIGATED

This category is not intended to evaluate or cover the manufacturer's installation instructions pertaining to the safety of the applicator (the person who applies the tank upgrade materials) for compliance with worker safety regulations, such as the Provincial Health and Safety Acts, nor any environmental emissions or disposal regulations, such as the Canadian Environmental Protection Act.

These tank upgrade materials have not been investigated for their physiological effects, if any, nor the manufacturer's specifications for the safety of the applicator during the upgrade process and the potential risks associated with the opening, entering, purging, cleaning, inspecting, sandblasting, upgrading, closing and testing of a tank that has been used to store flammable liquids. Questions concerning these and other safety, environmental or other regulatory issues should be referred to the manufacturer.

Underground Tank Upgrade Systems (EGSJC)−*Continued*

RELATED PRODUCTS

Nonmetallic internal lining systems for underground tanks are covered under Underground Tank Lining Systems (EGAYC).

Steel, fiberglass, and external corrosion-resistant underground tanks are covered under Underground Tanks (EGHXC).

REQUIREMENTS

The requirements used to investigate products in this category are based on:

Steel underground tank upgrade systems — UL 1746, ''External Corrosion Protection Systems for Steel Underground Storage Tanks,'' and ULC/ORD-C58.4, ''Double Containment Fibre Reinforced Plastic Linings for Flammable and Combustible Liquid Storage Tanks''

Fiberglass underground tank upgrade systems — UL 1316, ''Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures,'' and ULC/ORD-C58.4

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate upgrade system type and liquid rating for the individual Listings as indicated under **TYPES AND RATINGS** above followed by the statement ''When Installed and Used in Accordance with ULC Report, Reference No. ____, Dated ____.''

The Listing Mark is affixed to a component of the tank upgrade system (typically around the tank-entry manway or collar).

Accessories, Flammable Liquid Tank (EGVVC)

This category covers accessories intended for use with tanks for flammable liquids, such as gasoline, naphtha, kerosene, fuel oils, etc.

Anode Assemblies, Underground Tank Assemblies (EEJAC)

GENERAL

This category covers anode assemblies, which consist of zinc or magnesium plates or other forms, packaged with gypsum moisture-absorbing encasement. They are used as sacrificial anodes in conjunction with coated steel underground tanks, constructed in accordance with CAN/ULC-S603.1, ''External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids.''

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S618, ''Magnesium and Zinc Anodes and Zinc and Copper/Copper Sulfate Reference Electrodes.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Anode Assembly, Underground Tank Protection.''

Buoyant Decks for Flammable and Combustible Liquid Tanks (EGWDC)

USE AND INSTALLATION

This category covers decks intended to be installed in aboveground bulk storage tanks containing petroleum products at temperatures not above ambient (maximum 50°C), for purposes of fuel conservation and reduction of fire hazards.

Authorities Having Jurisdiction should be consulted before installation.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Buoyant Deck for Flammable and Combustible Liquid Tanks.''

Emergency Vents (EGWXC)

GENERAL

This category covers tank vents and interstitial-space vents intended for installation in steel aboveground tanks.

Emergency Vents (EGWXC)−*Continued*

Emergency aboveground tank vents are designed to provide adequate venting should the vapour pressure inside the tank exceed the atmospheric pressure. Such vents may also incorporate normal venting features.

Emergency interstitial space vents for double-wall aboveground tanks are designed to provide adequate venting of that space in the event that such tanks be exposed to an external fire.

Emergency interstitial-space vents are suitable for the relief of pressure in the interstice of aboveground double-wall tanks up to 125,000 L capacities.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Emergency Vent."

Galvanic Corrosion Monitoring Devices (EGXDC)

GENERAL

This category covers devices designed for use in monitoring the cathodic protection of underground storage tanks and pipelines for flammable and combustible liquids.

These devices consist of a monitoring unit and may incorporate warning lights and an audible alarm and are supplied as a completely assembled system. Some remote monitoring equipment may be connected to a PC computer by the use of telephone lines.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S603, "Steel Underground Tanks for Flammable and Combustible Liquids," and CAN/ULC-S603.1, "External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Galvanic Corrosion Monitoring Device."

Isolating Bushings (EGXHC)

USE

This category covers bushings intended for installation in protected underground tanks for the purpose of isolating the tank from its associated piping to preserve the integrity of the corrosion-protection system.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S631, "Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Isolating Bushing, Flammable Liquid Tanks."

Miscellaneous Tank Accessories for Flammable and Combustible Liquid Tanks (EGXPC)

USE AND INSTALLATION

This category covers accessories consisting of factory-made parts, components, or products designed to be assembled, installed, or used with aboveground or underground storage tanks for flammable and combustible liquids.

These accessories are intended to be installed or used in accordance with the installation or use instructions provided with the product.

PRODUCT TYPES AND REQUIREMENTS

The basic standards used to investigate fill adapters, vapor adapters, float-valve extractors and monitoring-well manholes in this category are CAN/ULC-S601, "Shop Fabricated Steel Aboveground Tanks for Flammable and/or Combustible Liquids," and ULC-S603, "Steel Underground Tanks for Flammable and Combustible Liquids."

The basic standard used to investigate oil-supply pipe in this category is CAN/ULC-S660, "Nonmetallic Underground Piping for Flammable and Combustible Liquids."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of

Miscellaneous Tank Accessories for Flammable and Combustible Liquid Tanks (EGXPC)−*Continued*

this Directory) together with the word "LISTED," a control number, and the product name "Miscellaneous Tank Accessory for Flammable and Combustible Liquid Tanks."

Overfill Protection Devices (EGXYC)

GENERAL

This category covers devices intended to prevent overfilling during normal filling operations of aboveground or underground flammable liquid storage tanks. They are of the following categories as described in ULC/ORD-C58.15, "Overfill Protection Devices for Flammable Liquid Storage Tanks."

A. Automatic Sensing Device — A device for interconnection with shut-off equipment at the supply vehicle. It will result in termination of delivery, at a maximum level of 95% of the tank contents.
B. Automatic Overfill Shutoff Device — An in-tank device of a float valve or other mechanical type providing shutoff of the fill pipe at a maximum level of 95% of the tank contents.
C. Vent Restriction Device — At a 95% or lower tank capacity level, a device that will cause flow to be reduced by at least 99% of the flow rate from a delivery vehicle.
D. Alarm Device — This may be of the audible or visual type. An overfill alarm device signals an overfill condition at 90% of the tank capacity.

Note: Type B devices are also designated for pressure or gravity fill. Pressure-fill devices may be used in aboveground and underground applications, whereas gravity-fill devices are typically only used in underground storage tanks.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C58.15, "Overfill Protection Devices for Flammable Liquid Storage Tanks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Overfill Protection Device."

Secondary Containment Liners (EGYCC)

GENERAL

This category covers secondary containment liners for use below and around underground and aboveground flammable and combustible liquid and specific chemical storage tanks facilities, intended to contain overflow or spills of stored product for a long enough period to allow removal and clean-up without release of spilled material to the environment.

These liners are of the following designations as described in ULC/ORD-C58.9, "Secondary Containment Liners for Underground and Aboveground Flammable and Combustible Liquid Tanks," having suffix "A" for aboveground tank use, having a minimum tensile strength of 500 N, and "B" for below ground (underground) tank applications, having a minimum tensile strength of 1000 N, where:

Class I Liners — Suitable for use as the secondary containment of underground tanks or earthen dikes surrounding aboveground tanks containing petroleum-derived flammable or combustible liquids, including oxygenated fuels.

Class IIP Liners — Suitable for use as the secondary containment of underground tanks or earthen dikes surrounding aboveground tanks containing petroleum-derived flammable and combustible liquids only (excluding oxygenated fuels).

Class II Liners — Suitable for use as the secondary containment of underground tanks or earthen dikes surrounding aboveground tanks containing petroleum-derived combustible liquids only.

Class III Liners — Suitable for use as the secondary containment of underground tanks or the lining of earthen dikes surrounding aboveground tanks containing specific chemicals.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C58.9, "Secondary Containment Liners for Underground and Aboveground Flammable and Combustible Liquid Tanks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Secondary Containment Liner."

Spill Containment Devices for Flammable Liquid Storage Tanks (EGYHC)

USE

This category covers containment devices intended to capture the small amount of product that may spill around the fill opening during normal filling operations of aboveground and underground storage tanks. Spill-containment devices for underground tanks may be of the grade or guarded installation type.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C58.19, "Spill Containment Devices for Underground Flammable Liquid Storage Tanks," and ULC/ORD-C142.19, "Spill Containment Devices for Aboveground Flammable and Combustible Liquid Storage Tanks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Spill Containment Device for Flammable Liquid Storage Tanks."

Under-dispenser Sumps and Underground Tank Risers (EGYIC)

USE

This category covers nonmetallic and metallic under-dispenser sumps and underground tank risers intended for the containment of any possible leakage from dispensing devices or submersible pumps for flammable liquids or their connections.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C107.21, "Under-Dispenser Sumps."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Under-Dispenser Sump" or "Underground Tank Riser."

Leak Detection Equipment (EQXXC)

GENERAL

This category covers devices, assemblies or systems that measure product leak rates utilizing in-tank or in-piping methods to measure changes in contained product volumetrically or nonvolumetrically by acoustical or other means, and equipment and methods exterior to the tank or piping that detect product leakage in liquid or vapour form.

As the repeatability of leak detection can be affected by a number of ambient variables, the stated minimum leak-detection rates have been determined as being accurate with a 95% probability, and with a corresponding probability of error or false alarm of 5% under specific conditions of application.

The performance of leak-detection equipment is further classified using the following categories as defined in the "CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products":

PRECISION — Capable of detecting a tank or pipe leak rate of 0.38 L/h within a period of 24 hours.

LEVEL 1 — Identical to **PRECISION** but in a time period that may exceed 24 hours.

LEVEL 2 — Capable of detecting a tank leak rate of 0.76 L/h.

LEVEL 3 — Capable of detecting a leak rate of 12 L/h in pressure piping, and that will operate when the product pump starts.

LEVEL 4 — Capable of detecting a contained tank interstice or sump leak (a) before the monitoring sump or interstitial space fills to 50% of its capacity by volume, or (b) before 600 L has leaked, whichever occurs first.

REQUIREMENTS

The basic standard used to investigate leak-detection equipment in this category is ULC/ORD-C58.12, "Leak Detection Devices (Volumetric Type) for Underground Flammable Liquid Storage Tanks," or ULC/ORD-C58.14, "Leak Detection Devices (Non-Volumetric Type) for Underground Flammable Liquid Storage Tanks."

The basic standard used to investigate line-leak-detection equipment in this category is ULC/ORD-C107.12, "Line Leak Detection Devices for Flammable Liquid Piping."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Leak Detection Equipment."

Leak Detection Equipment (EQXXC)−*Continued*

products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Leak Detection Equipment."

Detonation Flame Arresters (IIBLC)

GENERAL

This category covers in-line devices intended to prevent transmission of a detonation or deflagration that may arise within a piping system.

These devices are intended to arrest the passage of flame fronts in piping systems associated with processes such as the recovery of vapour from flammable liquid storage tanks. They are intended to arrest flame fronts travelling at sub- and supersonic speeds. They are intended to be used only with chemicals of the group specified.

Authorities Having Jurisdiction should be consulted before installation.

Chemical Groups

The chemical groups referenced in the individual certifications are as follows:

Group A	Group B	Group C
acetylene	butadiene	acetaldehyde
	ethylene oxide	cyclopropane
	hydrogen	diethyl ether
	manufactured gases containing more than 30% hydrogen (by volume)	ethylene
	propylene oxide	unsymmetrical dimethyl hydrazine

Group D		
acetone	gasoline	petroleum naptha
acrylonitrile	heptanes	octanes
ammonia	hexanes	pentanes
benzene	isoprene	1-pentanol (amyl alcohol)
butane	methane (natural gas)	propane
1-butanol (butyl alcohol)	methanol (methyl alcohol)	1-propanol (propyl alcohol)
2-butanol (secondary butyl alcohol)	3-methyl-1-butanol	2-propanol (isopropyl alcohol)
n-butyl acetate	(isoamyl alcohol)	propylene
isobutyl acetate	methol isobutyl ketone	styrene
ethane	2-methyl-1 propanol	toluene
ethanol (ethyl alcohol)	(isobutyl alcohol)	vinyl acetate
ethyl acetate	2-methyl-2 propanol	vinyl chloride
ethylene dichloride	(tertiary butyl alcohol)	xylenes

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 525, "Flame Arresters."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Detonation Flame Arrester."

Combustible Liquid-level Gauges and Tank-filling Signals (JYJZC)

USE

This category covers devices intended for use primarily in small fuel and lubricating oil tanks for indicating the liquid level and to signal an approaching full condition during filling.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C180, "Liquid Level Gauges and Indicators for Fuel Oil and Lubricating Oil Tanks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flammable Liquid, Liquid-Level Gauge," "Combustible Liquid-Level Gauge" or "Tank Filling Signal."

Miscellaneous Components for Underground Tanks (EGXQC)

Oil-water Separators, Underground (EEJEC)

GENERAL

This category covers underground oil-water separators intended to collect and separate nonsoluble, nonemulsified hydrocarbons from water by gravity separation. The containment portion of these devices is similar in materials and methods of assembly to underground storage tanks.

These oil-water separators and are intended for underground installations in accordance with requirements of the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Underground Tanks (EGHXC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S656, ''Oil-Water Separators.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Oil-Water Separator, Underground.''

Resin Systems Used with Underground Tanks for Flammable and Combustible Liquids (EGXRC)

GENERAL

This category covers systems that are incomplete in certain constructional features or restricted in performance capabilities, and intended for use as components of complete products submitted for investigation rather than for direct separate installation and use. The final acceptance of the component is dependent upon its application and use in complete assemblies of underground tanks submitted for examination and tests to Underwriters Laboratories of Canada.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S615, ''Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Resin System Used with Underground Tanks for Flammable and Combustible Liquids.''

Jacketed Underground Tanks (EGYJC)

USE AND INSTALLATION

This category covers tanks that incorporate steel underground tanks constructed in accordance with ULC-S603 (2000), ''Steel Underground Tanks for Flammable and Combustible Liquids,'' with a nonmetallic outer jacket providing corrosion protection and a means of secondary containment.

These tanks are intended for installation underground in accordance with requirements specified by the Authority Having Jurisdiction.

REQUIREMENTS

The basic standard used to investigate products in this category is Part 3 of CAN/ULC-S603.1, ''External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Jacketed Underground Tank.''

Storage Vaults (EHMBC)

GENERAL

This category covers specifically designed buildings used for the storage, collection and dispensing of small quantities of the stored product in and from containers and portable tanks, as permitted by the relevant sections of the ''National Fire Code of Canada,'' and ''National Building Code of Canada.''

These are secondary-containment buildings intended for outdoor installation that are capable of containing most forms of leakage from the stored containers and portable tanks. They are not more than one story in height and not greater than 100 m^2 in floor area.

The storage vaults are tested to determine ability to withstand a small controlled explosion of the stored containers, followed by a 30-minute fire, without releasing spilled product into the environment.

Storage Vaults (EHMBC)−*Continued*

The storage vaults covered under this category are likely to constitute a Group F Division 1 Occupancy.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C142.6, ''Storage Vaults.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Storage Vault.''

* *

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STORAGE CABINETS FOR FLAMMABLE LIQUID CONTAINERS (EHCUC)

GENERAL

This category covers cabinets intended for the storage of flammable liquid as permitted by the relevant sections of the ''National Fire Code of Canada.'' The cabinets are tested to determine their ability to withstand a 10-minute standard fire exposure without developing an internal temperature rise in excess of 139°C above ambient.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1275, ''Storage Cabinets for Flammable Liquid Containers.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Storage Cabinet for Flammable Liquid Containers.''

DISPENSING DEVICES (EPWRC)

This category covers dispensing devices and accessories intended for use with flammable liquids. Flammable liquids include the common gasoline and diesel engine fuels and the lighter heating oils, but not LP-gas.

These devices are intended for use in accordance with ANSI/NFPA 30, ''Flammable and Combustible Liquids Code.''

DISPENSING DEVICE ACCESSORIES (EQJZC)

This category covers accessories designed specifically for use in conjunction with dispensing devices.

Hose Connectors (ERZAC)

GENERAL

This category covers hose connectors, including those for use in vapour-recovery systems, designed to connect the gasoline hose with the automatic valves, and the dispensing device with the gasoline hose. The connectors may be of a straight, swivel, or breakaway type.

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices (EPWRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S634, ''Hose Swivel Connectors for Flammable and Combustible Liquids,'' or ULC-S644, ''Emergency Breakaway Fittings for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Hose Connector.''

Valves (ERZTC)

Hose Nozzle Valves (ESNRC)

Flammable Liquid Hose Nozzle Valves (ETAZC)

GENERAL

This category covers flammable liquid hose nozzle valves of the self-closing type, intended for use with dispensing devices for flammable liquids.

Hose nozzle valves are designated in the individual certifications as "automatic-closing type with latch-open device" or "automatic-closing type without latch-open device."

The automatic-closing type with latch-open device are intended for use in service stations where the dispensing of flammable liquids is only done by the service-station attendant.

The automatic-closing type without latch-open device are intended for use in self-service stations where the dispensing of flammable liquids is done by a person other than the service-station attendant.

REBUILT PRODUCTS

This category also covers hose nozzle valves that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt hose nozzle valves are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt hose nozzle valves are subject to the same requirements as new hose nozzle valves.

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices (EPWRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S620, "Hose Nozzle Valves for Flammable and Combustible Liquids."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flammable Liquid Hose Nozzle Valve."

For rebuilt products, the word "Rebuilt" precedes the product name.

Shut-off Valves, Emergency and Emergency Shut-off Valve Containment Assemblies (EUCVC)

GENERAL

This category covers emergency shutoff valves intended for use with power-operated dispensing devices handling flammable liquids (other than LP-gas). Unless otherwise indicated in the individual certifications, they are designed to safeguard against discharge of liquid under both fire exposure and accident conditions.

Emergency shutoff valve containment assemblies are intended for installation under the flammable liquid dispensing devices to collect any product leakage and, upon its accumulation, to shut down the dispensing device. Provision may be made to simultaneously initiate an alarm.

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices (EPWRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S651, "Emergency Valves for Flammable and Combustible Liquids."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Shut-Off Valve, Emergency and Emergency Shut-Off Valve Containment."

Dispensing Device Accessories, Miscellaneous (EUQTC)

USE

This category covers miscellaneous devices intended for use in conjunction with dispensing devices for flammable liquids, such as gasoline.

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices (EPWRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S634, "Hose Swivel Connectors for Flammable and Combustible Liquids."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED, "a control number, and the product name "Dispensing Device Accessory, Miscellaneous."

ELECTRICAL CIRCUIT INTEGRITY SYSTEMS (FHITC)

GENERAL

This category covers electrical circuit integrity systems consisting of components and materials intended for installation as protection for specific electrical wiring systems, with respect to the disruption of electrical circuit integrity upon exterior fire exposure.

Ratings apply only to the entire system assembly, constructed using the combination of components and materials specified in the individual system. Components and materials are designated for use in a specific individual system for which corresponding ratings have been developed, and are not intended to be interchanged between systems. Ratings are not assigned to individual system components or materials.

Electrical circuit integrity systems are intended to be fastened to a concrete or masonry wall or a concrete floor-ceiling assembly. The fire rating of the wall or floor-ceiling assembly is intended to be equal to or greater than the rating of the electrical circuit integrity system. This is to ensure that the complete electrical circuit integrity system will survive during fire and hose stream exposure. At the option of the manufacturer, the samples may be subjected to an optional hose stream test following fire exposure, after which circuit integrity is reconfirmed.

SYSTEMS CONSTRUCTED WITH FIRE-RESISTIVE CABLE

These electrical circuit integrity systems are investigated with respect to fire exposure and water hose stream performance. Performance criteria are based on functionality of the cable during the fire and after the water hose stream (if the hose stream test is conducted).

These systems are intended to be installed in accordance with all provisions of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and as amended by the details of each individual system (such as type of supports).

Authorities Having Jurisdiction should be consulted as to the specific requirements covering the installation and use of these systems.

RELATED PRODUCTS

See Fire-resistive Cable (FHJRC).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate systems constructed with fire-resistive cable in this category is CAN/ULC-S139, "Standard Method of Fire Test for Evaluation of Integrity of Electrical Power, Data and Optical Fibre Cables."

ULC MARK

System components identified by an (*) in the description text are Listed under the Listing and Follow-Up Service of ULC. Such components and names of manufacturers who are authorized to apply the Listing Mark are identified under the specific product category.

FIRE-RESISTIVE CABLE (FHJRC)

GENERAL

This category covers fire-resistive cable, which is insulated electrical cable intended for installation as specified in the individual electrical circuit integrity systems. This cable has been investigated for its ability to remain electrically functional during a fire exposure and, as indicated in the individual Listings, after the impact, erosion and cooling effect of a water hose stream test (in the event the optional hose stream test is conducted).

This cable is required to comply with Canadian national requirements for electrical safety in addition to requirements related to its continued operation under fire exposure.

The cable, as used in the specified systems, has been investigated and found to comply with applicable electrical requirements.

The cable is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," where indicated in the system, and the manufacturer's installation instructions.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Electrical Circuit Integrity Systems (FHITC) and Fire-resistance Ratings (BXUVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S139, "Standard Method of Fire Test for Evaluation of Integrity of Electrical Power, Data and Optical Fibre Cables."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," and the following additional information:

Fire-resistive Cable (FHJRC)−*Continued*

FIRE-RESISTIVE CABLE
FOR USE IN ELECTRICAL CIRCUIT INTEGRITY SYSTEMS
SYSTEM NO. ___
SEE ULC FIRE RESISTANCE DIRECTORY
Control No.

EXITS AND EXIT APPLIANCES (FUDQC)

CONTROLLED EXIT TYPE PANIC HARDWARE (FULAC)

GENERAL

This category covers devices that comply with the requirements for panic hardware but are modified by the addition of an electrically operated mechanism that may be engaged to inhibit the egress function of the device for up to 15 seconds. The conditions of operation are similar to those noted under Egress Door Securing and Releasing Devices (FUPLC); however, these devices are not designed to be functionally integrated with a fire-alarm system.

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S132, "Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware," and CAN/ULC-S533, "Egress Door Securing and Releasing Devices."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Controlled Exit Type Panic Hardware."

EGRESS DOOR SECURING AND RELEASING DEVICES (FUPLC)

GENERAL

This category covers devices intended for use on exit doors for the purpose of locking these doors against unauthorized egress under non-emergency conditions.

Where such devices are functionally integrated with a fire alarm system, they are intended to be installed in accordance with CAN/ULC-S524, "Installation of Fire Alarm Systems."

The use of these devices is limited to buildings having supervisory staff in attendance at all times the building is occupied. These devices are intended for installation in accordance with the "National Building Code of Canada." The conditions of operation are as follows:

(a) The locking device releases immediately
  (i) upon activation of a fire alarm signal,
  (ii) in the event of a power failure, and
  (iii) upon actuation of a manually-operated switch accessible only to authorized personnel;
(b) A force of not more than 90 N applied to the door-opening hardware initiates an irreversible process that will release the locking device within 15 s and not relock until the door has been opened;
(c) Upon release, the locking device must be activated manually by the actuation of the switch in Subclause (a) (iii); and
(d) A legible sign is permanently mounted on the exit door to indicate that the locking device will release within 15 s of applying pressure to the door-opening hardware.

These devices include door frame mounting hardware and control units.

RELATED PRODUCTS

Assemblies intended to facilitate safe egress of persons in case of emergency are covered under Controlled Exit Type Panic Hardware (FULAC) and Panic Hardware (FVSRC).

These assemblies have not been investigated with reference to fire protection classification. Devices so classified are covered under Fire Exit Hardware (GXHXC).

These assemblies have not been investigated with reference to burglary protection classifications. Devices so classified are included in the Burglary Protection Equipment List of Equipment and Materials.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S533, "Egress Door Securing and Releasing Devices."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Egress Door Securing and Releasing Device."

Egress Door Securing and Releasing Devices (FUPLC)−*Continued*

Subassemblies, Egress Door Securing and Releasing Device (FUPPC)

USE

This category covers electromagnets, power supplies, annunciators, primary releasing devices and keyswitch/controls intended for use on outward-swinging exit doors, security doors and fire doors, when so tested, and, if needed, to be installed in addition to the primary latching mechanism. The devices are not intended to be functionally integrated with a fire alarm system.

The power supply may also be used with exit devices or electric strikes.

The electromagnets are intended for use only with compatible certified power supplies.

ADDITIONAL INFORMATION

For additional information, see Egress Door Securing and Releasing Devices (FUPLC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S533, "Egress Door Securing and Releasing Devices."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Subassembly, Egress Door Securing and Releasing Device."

EXIT CONTROL DEVICES (FUQHC)

USE

This category covers assemblies intended for mounting on outward-swinging doors for the purpose of locking such exit doors against unauthorized egress.

RELATED PRODUCTS

Assemblies intended to facilitate safe egress of persons in case of emergency are covered under Controlled Exit Type Panic Hardware (FULAC) and Panic Hardware (FVSRC).

These assemblies have not been investigated with reference to fire resistance classification. Devices so classified are covered under Fire Exit Hardware (GXHXC).

These assemblies have not been investigated with reference to burglary protection classifications. Devices so classified are included in the Burglary Protection Equipment List.

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S132, "Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware," and CAN/ULC-S533, "Egress Door Securing and Releasing Devices."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Exit Control Device."

PANIC HARDWARE (FVSRC)

USE

This category covers assemblies intended for mounting on or integral with outward-swinging doors to facilitate the safe egress of persons in case of emergency.

RELATED PRODUCTS

These assemblies have not been investigated from a fire protection standpoint and are not intended for use on labelled fire doors. Related devices so classified are covered under Fire Exit Hardware (GXHXC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S132, "Emergency Exit and Fire Exit Hardware."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Panic Hardware."

EXIT SIGNS, SELF-LUMINOUS AND PHOTOLUMINESCENT (FWBXC)

USE

This category covers exit signs that utilize a nonelectrical illumination power source. It includes exit signs containing self-luminous gases or with a photoluminescent surface that relies on external illumination. These signs are intended for installation in accordance with the "National Building Code of Canada," and other codes governing the marking of the means of egress.

DRY LOCATION

These exit signs have been investigated only for dry, indoor locations unless otherwise marked. They are intended to be installed and operated in accordance with the product markings and installation instructions provided.

VIEWING DISTANCE

These exit signs have been investigated for visibility from 100 feet unless marked with a maximum viewing distance of 50 or 75 feet.

EXTERNAL ILLUMINATION

Exit signs whose visibility is dependent on external illumination (such as photoluminescent signs) are intended for installation only where such external illumination is deemed reliable and sufficient by the Authority Having Jurisdiction and where the lighting controls are accessible only to authorized personnel. Where compliance with the visibility requirements requires external illumination greater than 1 ft-c, these signs are marked, where visible after installation, for a minimum 5 ft-c illumination, measured on the face of the sign. If specific type(s) of lighting are needed to achieve the required visibility, the lighting type is also marked on the sign.

REPLACEMENT DATE

Exit signs whose visibility is expected to decline over time (such as those containing self-luminous gases) are marked, where visible after installation, with a replacement date.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C924, "Photoluminescent and Self-Luminous Exit Signs."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Self-Luminous Exit Sign" or "Photoluminescent Exit Sign," or other appropriate product name as shown in the individual Listings.

EXTERIOR WALL SYSTEMS (FWFFC)

This category covers systems intended for use as external cladding for walls. The systems are divided into two categories:

1. Combustible Exterior Wall Cladding Systems (FWFJC), consisting of combustible cladding materials in the form of prefabricated panels or field-applied coatings. The system numbers are prefixed by the designation "CW."
2. Exterior Wall Insulation and Finish Systems (FWFOC), consisting of insulation protected by noncombustible finish materials in the form of field-applied coatings. The system numbers are prefixed by the designation "EW."

COMBUSTIBLE EXTERIOR WALL CLADDING SYSTEMS (FWFJC)

GENERAL

Combustible Exterior Wall Cladding Systems (FWFJC)–*Continued*

This category covers combustible exterior wall cladding systems that are attached to the outside of building walls and intended to be used on buildings required to be of noncombustible construction in accordance with the "National Building Code of Canada" (NBCC).

In order to be eligible for certification, combustible exterior cladding is required to:

1. restrict flaming on or in the wall assembly so that it does not spread more than 5 m above an opening 2.5 m±0.1 m wide by 1.4 m±0.1 m high, located in the middle of and not more than 3 m above the lowest edge of a wall assembly that is not less than 5 m wide and not less than 10 m high, and
2. have the heat flux during the flame exposure on the wall assembly be such that it does not exceed 35 kW/m^2 at a height of 3.5 m above the opening (noted in Item 1 above),

when tested in accordance with CAN/ULC-S134, "Standard Method of Fire Test of Exterior Wall Assemblies," and in consideration of the conditions defined in the NBCC (1990 Edition), under Article 3.1.5.5, sentences (1) through (8).

This method enables an assessment of fire hazard characteristics of exterior wall assemblies containing combustible elements, such as cladding, sheathing and insulation. The primary purpose of the test is to determine the comparative burning characteristics of cladding on exterior wall assemblies by evaluating, under full scale conditions, the flame spread over the exterior surface, the incremental heat flow to the exterior surface resulting from the burning of the assembly, and the damage to the assembly following exposure to the test fire.

Typically, the illustrated designs reflect the precise dimensions and condition of the sample assembly which has been subjected to the fire-endurance test. Within practical limits, a construction must duplicate the illustrated design and the details included in the associated text in order to achieve the indicated assembly rating.

Authorities Having Jurisdiction should be consulted before installation.

Numbered items refer to the descriptive text below each drawing. Individual components of a proprietary nature or over which it is necessary to exercise control at the manufacturing location are certified under the certification and Follow-Up Service of Underwriters Laboratories of Canada. Such items are identified in the text by a black dot thus•. Under this Service, periodic examination and tests are conducted on samples selected at random from current production and stock.

Each certified product bears the label or other identification of Underwriters Laboratories of Canada from which it may be determined that a product is suitable for use as a material in a particular assembly or assemblies.

RELATED PRODUCTS

Components intended for use with combustible exterior wall cladding systems are covered under Components for Combustible Exterior Wall Cladding Systems (FWFLC).

ADDITIONAL INFORMATION

For additional information, see Exterior Wall Systems (FWFFC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S134, "Standard Method of Fire Test of Exterior Wall Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Combustible Exterior Wall Cladding System."

Components for Combustible Exterior Wall Cladding Systems (FWFLC)

USE

This category covers components for combustible exterior wall cladding systems designated for use in specific assemblies covered under Combustible Exterior Wall Cladding Systems (FWFJC).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Combustible Exterior Wall Cladding Systems (FWFJC) and Exterior Wall Systems (FWFFC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S134, "Standard Method of Fire Test of Exterior Wall Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of

Components for Combustible Exterior Wall Cladding Systems (FWFLC)−*Continued*

this Directory) together with the word "LISTED," a control number, and the product name "Component for Combustible Exterior Wall Cladding Systems."

EXTERIOR WALL INSULATION AND FINISH SYSTEMS (FWFOC)

GENERAL

This category covers exterior wall insulation and finish systems, which are attached to the outside of building walls and intended to provide an insulated exterior building envelope in accordance with the "National Building Code of Canada" (NBCC).

In order to evaluate the effectiveness of these materials, their performance has been related to their ability to resist fall-off and disintegration when a representative assembly is exposed to a condition of fire exposure represented by the Standard Time-Temperature Curve of CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

The requirements of the NBCC for foamed plastic insulation used in exposing building faces, in buildings exceeding 3 storeys in building height, are that the foamed plastic shall be protected on the exterior surface by noncombustible material that will remain in place for at least 15 minutes when tested in conformance with CAN/ULC-S101.

Typically, the illustrated designs reflect the precise dimensions and condition of the sample assembly which has been subjected to the fire-endurance test. Within practical limits, a construction must duplicate the illustrated design and the details included in the associated text in order to achieve the indicated fire-resistance rating.

The illustrated designs which show assemblies that have been subjected to the Standard Fire Endurance Test are prefixed by the letters "EW."

Authorities Having Jurisdiction should be consulted before installation.

Numbered items refer to the descriptive text below each drawing. Individual components of a proprietary nature or over which it is necessary to exercise control at the manufacturing location are certified under the certification and Follow-Up Service of Underwriters Laboratories of Canada. Such items are identified in the text by a black dot thus •. Under this Service, periodic examination and tests are conducted on samples selected at random from current production and stock.

Each certified product bears the label or other identification of Underwriters Laboratories of Canada from which it may be determined that a product is suitable for use as a material in a particular assembly or assemblies.

RELATED PRODUCTS

Components intended for use with exterior wall insulation and finish systems are covered under Components for Exterior Wall Insulation and Finish Systems (FWFXC).

ADDITIONAL INFORMATION

For additional information, see Exterior Wall Systems (FWFFC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Exterior Wall Insulation and Finish System."

Components for Exterior Wall Insulation and Finish Systems (FWFXC)

USE

This category covers components for exterior wall insulation and finish systems designated for use in specific assemblies covered under Exterior Wall Insulation and Finish Systems (FWFOC).

ADDITIONAL INFORMATION

For additional information, see Exterior Wall Insulation and Finish Systems (FWFOC) and Exterior Wall Systems (FWFFC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Component for Exterior Wall and Finish Systems."

EXTINGUISHERS AND EXTINGUISHING SYSTEM UNITS (FWFZC)

This category covers extinguishers, extinguishing agents and extinguishing system units.

The relative fire-extinguishing potential of extinguishers is expressed by a NUMERAL and LETTER designation. The LETTER designation refers to the general class of fire for which the extinguisher is suitable.

Class A fires are defined as fires in ordinary combustible materials such as wood, cloth and paper, where the "quenching-cooling" effect of quantities of water or solutions containing large percentages of water is most effective in reducing the temperature of the burning material below the ignition temperature and is, therefore, of first importance.

Class B fires are defined as fires in flammable petroleum products or other flammable liquids, greases, etc., where the "blanketing-smothering" effect of oxygen-excluding media is most effective.

Class C fires are defined as fires involving electrical equipment where the electrical nonconductivity of the extinguishing media is of first importance.

The NUMERAL is indicative of the approximate relative fire-extinguishing potential of the first-aid fire appliances. For example, a 4-A extinguisher possesses approximately twice the potential of a 2-A extinguisher.

Authorities Having Jurisdiction should be consulted as to the conditions under which the various extinguishers will be accepted. Subject to approval by the Authorities Having Jurisdiction, the extinguishers are intended to be located on the basis of floor area, or extinguishing potential of the appliances, or specific hazard, or other conditions involved.

Extinguishing agents are classified according to the general class of fire for which the agent is suitable, expressed by LETTER designation, where applicable.

Extinguishing system units are classified according to the types of extinguishing systems in which they are intended to be used.

AEROSOL-GENERATING FIRE EXTINGUISHING SYSTEM UNITS (FWSAC)

GENERAL

This category covers aerosol-generating extinguishing -system units, which are devices that, when assembled into a system, are designed to generate and discharge fine potassium carbonate particles and inert gases for the extinguishment of fires. Each system consists of one or more aerosol generators, actuating assemblies for automatic or manual operation, and miscellaneous subsidiary devices. The units are suitable for use over a temperature range of -40°C to +54°C or as otherwise noted in the individual certifications.

The units are intended for total flooding use where there is a fixed enclosure about the hazard to enable the required concentration to be achieved and maintained for the required period of time to ensure the effective extinguishment of a fire within the enclosure. They are intended for normally unoccupied applications. The aerosol generated may create a potential hazard for personnel and equipment in the protected area. In generating aerosol, there are high-temperature products of the extinguishing media discharged; this characteristic should be investigated before the units are installed. The potential effects of the agent discharge residue on sensitive equipment and other objects have not been investigated.

These units are intended for protection against fires that fall under the Class B and C categories. Aerosol generators, where indicated in the individual certifications, are also suitable for the protection of limited quantities of Class A materials. It should be noted that fires involving densely packed fibrous materials are special hazards which cannot be protected by the units covered under this category.

These units and systems are intended to be designed, installed, operated, tested and maintained in accordance with ANSI/NFPA 2010, "Aerosol Fire-Extinguishing Systems."

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is UL 2127, "Inert Gas Clean Agent Extinguishing System Units," in addition to the requirements contained in ULC Subject C1500, "Aerosol Generating Fire Extinguishing System Units." The following is a list of the requirements from ULC Subject C1500 that are added to the applicable requirements in UL 2127: Temperature Cycling (10 cycles), High Humidity Exposure, Fire Exposure, Hydrogen Sulfide Exposure, Hydrogen Sulfide/Carbon Dioxide Exposure, Discharge Temperature Measurement, Rough Usage, Explosive Atmosphere, a Modified Class A Crib Fire Test and Accelerated Aging of Solid Aerosol.

ULC MARK

Aerosol-Generating Fire Extinguishing System Units (FWSAC)−*Continued*

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Aerosol Generating Fire Extinguishing System Unit."

ANTIFREEZE SOLUTION EXTINGUISHERS (FWTXC)

GENERAL

This category covers expellent-gas-operated, antifreeze solution extinguishers, which are special-type, first-aid fire appliances designed for operation at temperatures as low as -40°C. They are intended for use in locations where low-temperature conditions make water-type extinguishers unsuitable. Unless otherwise indicated in the individual certifications, they are intended for use on Class A fires.

The fire-extinguishing certifications of these extinguishers are developed at normal ambient temperatures (approximately 21°C) and may be reduced at lower temperatures.

Antifreeze solution extinguishers are of two basic types: one employing a cartridge that retains the expellant gas until it is punctured, and the other type employing a shut-off valve that retains the gas in the same single chamber with the extinguishing solution.

Chemical Charges — Extinguishers of this type employ special charges. Reliability of operation may be endangered by use of charges other than those furnished by the manufacturer. The extinguishing agents are either calcium chloride solutions or alkali-metal salt solutions (loaded stream). Care must be taken to follow the charging and maintenance directions on the extinguisher nameplate or recharging package. When the directions do not specify discharge, cleaning, and recharging annually, Authorities Having Jurisdiction should be consulted as to the acceptable procedure in ensuring operative condition.

ULC requires that original charges be supplied by the manufacturer of the device.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S507, "Water Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Antifreeze Solution Extinguisher."

CARBON DIOXIDE EXTINGUISHERS (FXHVC)

GENERAL

This category covers carbon dioxide extinguishers, which are portable appliances designed and tested for operation over a temperature range of -40°C to 49°C.

The fire extinguishing classifications of these extinguishers are developed at normal ambient temperature (approximately 21°C) and may be reduced at lower temperatures.

CO_2 is a nonconductor and its properties are such that when air is displaced by it or mixed with it in suitable proportions it is effective on Class B and C fires.

In using extinguishers of this type, especially in unventilated places such as small rooms, closets or confined spaces, operators and others should take precautions to avoid breathing the vapours or gases liberated or produced by the extinguishers.

Extinguishers utilize CO_2 stored in TC-3A or -3AA shipping containers, which are equipped with special cutter or seated-type valves permitting release of CO_2 gas through hand hose and nozzle (or tanks constructed in compliance with ASME Unfired Pressure Vessel Code Requirements). TC shipping containers (cylinders) for CO_2 are required to be designed for 12400 kPa or higher pressure and are so marked.

The small sizes are provided with a handle or strap for portability and a wall hook for mounting, whereas the large sizes are mounted on two-wheel trucks. Cylinders in service should be weighed semi-annually to detect loss of liquid by leakage, tampering or use.

These appliances do not need to be protected against freezing. The extinguishers are capable of complete uninterrupted discharge at temperatures down to -40°C. If the discharge of the extinguisher is interrupted during an attack on a fire by closing the valve one or more times when the temperature of the extinguisher contents is below -18°C, blockage of the discharge may occur, thereby rendering the extinguisher useless for any further use on the fire being attacked. This condition corrects itself without any damage to the extinguisher after a period of time dependent upon the ambient temperature. Therefore, use of carbon dioxide extinguishers at temperatures lower than -18°C should not contemplate intermittent discharge.

Carbon Dioxide Extinguishers (FXHVC)−*Continued*

MARINE USE

All ULC certified CO_2 extinguishers have been approved for use within the jurisdiction of Canadian marine authorities where the extinguisher is of an appropriate size and classification. Compliance with the requirements of other marine jurisdictions is indicated on the extinguisher label.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S503, "Carbon-Dioxide Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Carbon Dioxide Extinguisher."

CARBON DIOXIDE EXTINGUISHING SYSTEM UNITS (FXVTC)

This category covers carbon dioxide extinguishing system units intended for use in carbon dioxide extinguishing systems, installed in accordance with ANSI/NFPA 12, "Standard on Carbon Dioxide Extinguishing Systems," with additional limitations as specified in the individual Listings. When so installed they may form manual or combined manual and automatic systems, with or without remote operation. Such systems in their simplest form consist of one or more storage containers with discharge valves, control heads, piping and discharge nozzles. The system thus formed uses high pressure (approximately 5850 kPa storage) carbon dioxide. The high-pressure storage containers are either TC-3A or -3AA shipping containers (cylinders).

Authorities Having Jurisdiction should be consulted before installation.

Carbon Dioxide Extinguishing System Units, General Use (FYJRC)

GENERAL

This category covers devices that may be used in all types of carbon dioxide extinguishing systems, such as cylinders, cylinder valves, control heads, selector valves, pneumatic and electrical detectors, etc.

The individual certifications contain information regarding the equivalent length of system units which affect the flow of carbon dioxide in pipelines. This information may be used in computing system flow rates according to the methods described in ANSI/NFPA 12, "Carbon Dioxide Extinguishing Systems."

ADDITIONAL INFORMATION

For additional information, see Carbon Dioxide Extinguishing System Units (FXVTC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 12, "Carbon Dioxide Extinguishing Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Carbon Dioxide Extinguishing System Unit, General Purpose."

Carbon Dioxide Extinguishing System Units, Hand Hose Line (FYWZC)

GENERAL

This category covers hand hose line systems consisting of a hose reel or rack, hose, and a discharge nozzle assembly connected by fixed piping to a supply of carbon dioxide.

The carbon dioxide extinguisher systems in which these racks and reels are used are fixed piping installations with carbon dioxide stored in one or more cylinders at atmospheric temperatures (cylinder capacities 22.7, 34.0 or 45.4 kg), or tanks in which liquid carbon dioxide is stored under

Carbon Dioxide Extinguishing System Units, Hand Hose Line (FYWZC)−*Continued*

continuously controlled low temperature. The carbon dioxide may be directed to one or more hose lines consisting of flexible metallic reinforced hose having discharge ends equipped with horns or nozzles and shutoff valves. Local or remote manual control of supply of carbon dioxide may be provided. The hose-carrying capacity of the reels or racks is indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Carbon Dioxide Extinguishing System Units (FXVTC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 12, "Carbon Dioxide Extinguishing Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Carbon Dioxide Extinguishing System Unit, Hand Hose Line."

Carbon Dioxide Extinguishing System Units, Local Application (FZKXC)

GENERAL

This category covers local-application systems consisting of a fixed supply of carbon dioxide permanently connected to a system of fixed piping, with nozzles arranged to discharge directly into a fire.

The products in the individual certifications are primarily local-application nozzles which, when used with other devices certified for general use, form local-application carbon dioxide systems.

Local-application nozzles are tested to determine their fire extinguishing limitations; this data is shown in tabular form in individual certifications. For overhead nozzles the tables give carbon dioxide flow rate (90% of splash rate, kg/min) versus height (m) and maximum area (m^2) versus height (m) limits within which extinguishment has been obtained in test fires. For tankside nozzles the tables give maximum and minimum design flow rates (kg/min) within which extinguishment has been obtained in fire tests, versus area coverage (m^2), supplemented by other limitations on nozzle spacing and maximum area extinguished. For linear nozzles the tables give maximum and minimum design flow rate (kg/min) versus throw (maximum distance across hazard).

Individual nozzles may be provided with a range of orifice sizes which have been rated for equivalent number by comparison with the "Standard" orifice described in ANSI/NFPA 12, "Carbon Dioxide Extinguishing Systems." Orifice size numbers are marked on the body of the nozzle. Selection of nozzle orifices in individual system designs to achieve design flow rates is dependent on system flow-rate calculations.

ADDITIONAL INFORMATION

For additional information, see Carbon Dioxide Extinguishing System Units (FXVTC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 12, "Carbon Dioxide Extinguishing Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product, or the Listing Mark on the smallest unit container in which the product is packaged with or without the ULC symbol on the product, is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Carbon Dioxide Extinguishing System Unit, Local Application."

Carbon Dioxide Extinguishing System Units, Total Flooding (GAMTC)

GENERAL

This category covers total-flooding systems consisting of a fixed supply of carbon dioxide permanently connected to fixed piping, with fixed nozzles arranged to discharge carbon dioxide into an enclosed space or an enclosure surrounding the hazard.

The products in the individual certifications are devices intended for use with other devices certified for general use to form total-flooding carbon dioxide systems.

Total-flooding nozzles may be provided with a range of orifice sizes, which have been rated for equivalent number by comparison with the "Standard" orifice described in ANSI/NFPA 12, "Carbon Dioxide Extinguishing Systems." The selection of nozzle orifices in the individual system designs to achieve design flow rates is dependent on system flow-rate calculations.

Carbon Dioxide Extinguishing System Units, Total Flooding (GAMTC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Carbon Dioxide Extinguishing System Units (FXVTC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 12, "Carbon Dioxide Extinguishing Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the ULC symbol on the product, is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Carbon Dioxide Extinguishing System Unit, Total Flooding."

HALOGENATED AND CLEAN AGENT EXTINGUISHERS (GAOMC)

GENERAL

This category covers Halogen agent extinguishers containing Halon 1211, 1301, 1211/1301, and halocarbon clean agent extinguishers containing HCFC Blend 1130/1220/2420 and HCFC 123 extinguishing agents. These extinguishers are portable appliances designed and tested for operation over a temperature range of -40°C to 49°C unless otherwise shown in the individual Listings.

The fire-extinguishing classifications of these extinguishers are developed at normal ambient temperature (21°C) and may be reduced at lower temperatures.

Halogenated agents and halocarbon clean agents have properties such that, when air is displaced by them or mixed with them in suitable proportions, they are effective on Class B fires and, when used in sufficient quantity, on Class A fires (refer to the individual Listings for extinguishers suitable for Class A fires). As a nonconductor of electricity, they may also be used on energized electrical equipment involved in fire situations (Class C).

Undecomposed 1211, 1301, 1211/1301, HCFC Blend 1130/1220/2420, and HCFC 123 agents are relatively low in toxicity. However, 1211, 1301 and 1211/1301 agents may have an anaesthetic effect on humans at concentrations above 4%, by volume. At concentrations above 20%, they will reduce the oxygen concentration in the air below the 16% level generally considered necessary to sustain life.

The HCFC and HCFC agent blends each have different specific concentrations which produce the aforementioned effects.

The products of decomposition of 1211, 1301, 1211/1301, HCFC Blend 1130/1220/2420, and HCFC 123 agents can be hazardous to personnel. They have a characteristic sharp odour which is highly irritating to the nose, throat, etc. Care should be taken to avoid inhalation of the agent and the products produced when the agents are applied to fires.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate halogenated agent extinguisher products in this category is CAN/ULC-S512, "Halogenated Agent Hand and Wheeled Fire Extinguishers."

The basic standard used to investigate halocarbon clean agent extinguisher products in this category is CAN/ULC-S566, "Halocarbon Clean Agent Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Halogenated Agent Extinguisher" or "Clean Agent Extinguisher."

Halogenated Media Automatic Fire Extinguisher Units (GAOZC)

GENERAL

This category covers automatic fire extinguisher units of the type and capacity as noted in the individual certifications. These extinguishers are intended for fixed installation in complete enclosures and are unclassified as to their fire-extinguishing potential.

Halogenated Media Automatic Fire Extinguisher Units (GAOZC)−*Continued*

Halon 1211, bromochlorodifluoromethane and other proprietary mixtures of halogenated hydrocarbons have properties such that, when air is displaced by them or mixed with them in suitable proportions, they are effective on Class B fires and, when used in sufficient quantity, on Class A fires (refer to the individual certifications for extinguishers suitable for Class A fires). As these media are nonconductors of electricity, they may also be used on energized electrical equipment involved in fire situations (Class C).

Undecomposed Halons are low in toxicity. However, they may have anaesthetic effects on humans at concentrations above 4%, by volume. At concentrations above 20%, they will reduce the oxygen concentration in air below the 16% level generally considered necessary to sustain life.

While the products of decomposition of these media can be hazardous to personnel, their presence is readily apparent from their characteristic sharp odour which is highly irritating to the nose, throat, etc. Care should be taken to avoid inhalation of these media and the products produced when the media are applied to fires.

ADDITIONAL INFORMATION

For additional information, see Halogenated Agent Extinguishers (GAOMC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S512, ''Halogenated Agent Hand and Wheeled Fire Extinguishers.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Halogenated Media Automatic Fire Extinguisher Unit.''

CLEAN AGENT EXTINGUISHING SYSTEM UNITS (GAQFC)

USE AND INSTALLATION

This category covers clean agent extinguishing system units, which are assembled in a system with an agent storage container assembly to discharge an extinguishing agent through fixed piping and nozzles for the extinguishment of fires. These units include actuating assemblies designed for automatic and/or manual operation, container assemblies for storing the extinguishing agent, discharge assemblies, manifold check valves, selector valves, discharge nozzles and other miscellaneous devices.

This category also covers clean agent extinguishing system unit assemblies comprised of a single enclosure that houses 1) electronic control and signaling equipment and 2) a clean agent extinguishing system unit, connected and assembled in the enclosure and intended for connection to an electrical power connection, clean agent system piping, and heat- or smoke-detection devices.

Clean agent extinguishing systems are intended to be designed, installed and maintained in accordance with ANSI/NFPA 2001, ''Clean Agent Fire Extinguishing Systems,'' and the manufacturer's installation, operation and maintenance manual. These units are designed for total-flooding applications unless otherwise indicated in the individual certifications. For total-flooding applications, the hazard is surrounded by a fixed enclosure that enables the required concentration to be achieved and maintained for the required period of time, ensuring effective extinguishment of fire in combustible materials.

The total-flooding design concentrations for surface-type Class A and Class B fires are specified in the individual manufacturer's design and/or installation, operation and maintenance manual referenced in the individual certifications.

Fires involving densely-packed fibrous materials, such as baled cotton, jute, pressed fiberboard or the like, are special hazards and should be given specific consideration. Extinguishment of materials of this type may require substantially higher concentrations.

For information regarding safeguards for personnel, products of decomposition, and exposure to the agent, refer to ANSI/NFPA 2001.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate clean agent extinguishing system units in this category is UL 2166, ''Halocarbon Clean Agent Extinguishing System Units,'' or UL 2127, ''Inert Gas Clean Agent Extinguishing System Units.''

The basic standards used to investigate clean agent extinguishing system unit assemblies in this category are UL 2166, or UL 2127, ANSI/UL 864,

Clean Agent Extinguishing System Units (GAQFC)−*Continued*

''Control Units and Accessories for Fire Alarm Systems,'' and ULC-S527, ''Control Units for Fire Alarm Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Clean Agent Extinguishing System Unit'' or ''Clean Agent Extinguishing System Unit Assembly.''

DRY CHEMICAL EXTINGUISHERS, HAND AND WHEELED (GBARC)

GENERAL

This category covers hand and wheeled dry-chemical extinguishers, which are portable appliances of the stored-pressure or cartridge-operated type. They are intended for operation over a temperature range of -40°C to +49°C unless otherwise noted in the individual certifications.

In the stored-pressure type, the dry chemical is expelled by dry air, nitrogen, or other expellant gases, stored in a single chamber with the dry chemical.

In the cartridge-operated type, the dry chemical is expelled by carbon dioxide or nitrogen stored in a separate expellant-gas cartridge.

The hand units are provided with a self-closing shut-off nozzle or control valve, and may also utilize a hose as a means of directing the discharge.

They are provided with a carrying handle for portability and a wall hook or bracket for mounting.

The wheeled units are provided with a hose and shut-off nozzle, mounted on a carriage, and are suitable for use inside factory and warehouse buildings in which doorways are wide enough to permit passage of extinguishers from one room to another, or in which the extinguisher will not be required to pass from one room to another. They are also suitable for use in outdoor applications such as mill yards and similar places.

Dry-chemical extinguishers may be charged with ordinary, sodium bicarbonate or potassium bicarbonate, or multi-purpose, ammonium phosphate/ammonium sulphate, dry chemical.

The dry chemical utilized is a specially prepared mixture of chemicals in finely divided form, treated with additives to produce flowability and water repellancy characteristics.

The base type designations indicated in the individual certifications identify the principal extinguishing chemical or chemicals in the dry-chemical charge with which the extinguisher was classified.

Extinguishers charged with ordinary dry chemicals are classified for use on Class B and C fires. They are not effective on deep-seated fires in ordinary combustible materials (Class A), but may have some value on incipient surface fires in such materials.

Extinguishers charged with multi-purpose chemicals (with the exception of small sizes) are classified for use on Class A, B and C fires.

The fire-extinguishing classifications of these extinguishers are developed at normal ambient temperatures (approximately 21°C) in accordance with CAN/ULC-S508, ''Rating and Fire Testing of Fire Extinguishers,'' and may be reduced at lower temperatures.

Reliability of operation may be endangered by use of charges other than those furnished by the manufacturer of the device or by mixing of agents of different base ingredients.

Maintenance includes annual or more frequent inspection by removing and weighing the gas cartridge or checking pressure in the cylinder, ascertaining that dry chemical flows freely, and that the hose, when provided, is unobstructed and in working order. Extinguishers with the dry chemical and expellant gas in the same single chamber are examined for leakage by observation of the pressure gauge.

REBUILT PRODUCTS

This category also covers dry-chemical extinguishers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt dry-chemical extinguishers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt dry-chemical extinguishers are subject to the same requirements as new dry-chemical extinguishers.

MARINE USE

All ULC certified dry-chemical extinguishers have been approved for use within the jurisdiction of Canadian marine authorities where the extinguisher is of an appropriate size and classification. Compliance with the requirements of other marine jurisdictions is indicated on the extinguisher label.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S504, ''Dry Chemical Fire Extinguishers.''

Dry Chemical Extinguishers, Hand and Wheeled (GBARC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Dry Chemical Extinguisher, Hand and Wheeled."

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

Dry Chemical Extinguishing Agents (GBNRC)

USE

This category covers dry chemicals intended for the recharging of specific ULC labelled extinguishers. These materials have been investigated for their fire-extinguishing capabilities and performance characteristics in combination with the extinguishers indicated in the individual certifications. Their use with other extinguishers has not been investigated. Users should be aware that use of these products in any extinguisher may void the extinguisher warranty.

ADDITIONAL INFORMATION

For additional information, see Dry Chemical Extinguishers, Hand and Wheeled (GBARC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S514, "Dry Chemical for Use in Hand and Wheeled Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Dry Chemical Extinguishing Agent."

DRY CHEMICAL EXTINGUISHING SYSTEM UNITS (GBYSC)

GENERAL

This category covers dry-chemical fire extinguishing system units, which are devices assembled in a system designed to discharge dry chemical through fixed piping and nozzles. The systems consist of actuating assemblies, container assemblies for storing the dry chemical and expellant gas, discharge assemblies and miscellaneous devices. They are suitable for use over a temperature range of -40°C to +49°C, unless otherwise noted in the individual certifications.

Actuating assemblies provide a means of operating the discharge valves, thereby releasing the dry chemical. They may include pneumatic release devices, thermostats, trip levers, mechanical linkages and cables, and pulleys.

Container assemblies provide a means of storing expellant gas and supplying dry chemical to discharge assemblies. They may include one or more containers, dry chemical tubes, valve assemblies and outlet fittings.

Discharge assemblies provide a means of directing the dry-chemical discharge. They may include couplings, fixed piping and specially designed discharge nozzles.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 1254, "Pre-Engineered Dry Chemical Extinguishing Systems Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Dry-Chemical Extinguishing System Unit."

FOAM EXTINGUISHING SYSTEM UNITS (GEEZC)

This category covers devices and materials used in systems employing foam as the fire-extinguishing medium.

ANSI/NFPA 11, "Standard for Low-, Medium-, and High-Expansion Foam," and Authorities Having Jurisdiction should be consulted regarding use of devices and materials before installation of these systems.

Foam Extinguishing System Units (GEEZC)−*Continued*

Air Foam, Mechanical Foam (GEFZC)

This category covers foam produced by the addition of a foaming agent (a liquid) to water to make it capable of foaming in the presence of air, which is usually incorporated by the mechanical action of jets in a fixed foam maker or portable playpipe. The foaming agent, or air foam liquid, is referred to as "stablilizer" in the individual Listings.

Air Foam Liquid Concentrates, Mechanical Foam (GFGVC)

GENERAL

This category covers Categories 1 and 2 foam liquid concentrates, which include protein, fluoroprotein, film-forming fluoroprotein (FFFP), aqueous film-forming foam (AFFF), or other synthetic-based materials.

Foam is generally produced by the addition of a foam liquid concentrate to water and mechanically mixing air into the foam solution. Some foam solutions may be discharged through equipment that does not mix air into the solution, as indicated in the individual certifications.

Category 1 foam liquid concentrate is suitable for use on fires involving ordinary hydrocarbon petroleum products, but may not be suitable for use on fires involving polar solvent fuels. Category 2 foam liquid concentrate has been investigated for use on polar solvents as noted in the individual certifications.

Liquid concentrates may be stored in the original shipping containers or in pressure-proportioning tanks. Liquid concentrates are not intended to be stored at temperatures below 2°C, unless otherwise indicated in the individual certifications, or above 50°C. They are intended to be stored in locations free of excessive moisture to avoid external corrosion of containers and other equipment.

The quality of foam produced is affected by proportioning and discharge equipment. The individual certifications of liquid concentrates reference all the equipment with which they may be used and the corresponding operating limitations including the foam concentrations. There are two types of foam discharge outlets:

Type II — Discharge devices that do not deliver foam gently onto the liquid surface but are designed to minimize submergence of the foam or agitation of the surface. Examples include foam chambers, subsurface injection equipment, or applying the foam off a backboard or the wall of a tank.

Type III — Discharge devices that deliver foam directly onto the liquid surface at an angle above the horizontal. Examples include handheld nozzles or monitors. Unless otherwise indicated in the individual certifications, the type of discharge outlet certified with a foam is Type III.

Foam liquid concentrates investigated with certified sprinklers and fixed spray foam nozzles are intended to be installed in accordance with the applicable NFPA Standard, but in no case is the protected area intended to exceed 12.1 sq. m.

ADDITIONAL INFORMATION

For additional information, see Air Foam, Mechanical Foam (GEFZC), Foam Extinguishing System Units (GEEZC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S564, "Categories 1 and 2 Foam Liquid Concentrates."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Air Foam Liquid Concentrate Mechanical Foam."

Foam-discharge Outlets (GFUTC)

GENERAL

This category covers foam chambers provided with integral foam makers intended for fixed installation on outdoor flammable-liquid-storage tanks as a means of producing foam and introducing it into the tanks for fire protection. These devices are available as Type I or Type II discharge outlets.

Foam heads may be of the open type or the closed automatic type and are designed to discharge foam solution. These heads are intended for fixed installation as a means of applying foam solution on liquid surfaces in small tanks, drain areas, dip tanks, etc.

Foam-water sprinklers are intended for fixed installation to apply foam solution on liquid surfaces.

Foam extinguishing systems are intended to be installed in accordance with the applicable requirements of ANSI/NFPA 11, "Low-, Medium-, and High-Expansion Foam," and ANSI/NFPA 16, "Installation of Foam-Water Sprinkler and Foam-Water Spray Systems."

Authorities Having Jurisdiction should be consulted before installation.

Foam-discharge Outlets (GFUTC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Air Foam, Mechanical Foam (GEFZC), Foam Extinguishing System Units (GEEZC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S654, ''Categories 1 and 2 Foam Liquid Concentrates.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fixed Air Foam Discharge Outlet.''

Foam Liquid Concentrates, Category 3 (GFVKC)

GENERAL

This category covers Category 3 foam liquid concentrates, which include film-forming fluoroprotein (FFFP) and aqueous film-forming foam (AFFF). The foam liquid concentrates are primarily used for aircraft rescue fire fighting.

Foam is generally produced by the addition of a foam liquid concentrate to water and mechanically mixing air into the foam solution.

Category 3 AFFF and FFFP foam liquid concentrates are suitable for use on fires involving ordinary hydrocarbon petroleum products, but may not be suitable for use on fires involving polar solvent fuels.

Liquid concentrates may be stored in the original shipping containers or in pressure-proportioning tanks. Liquid concentrates are not intended to be stored at temperatures below 2°C, unless otherwise indicated in the individual certifications, or above 50°C. They are intended to be stored in locations free of excessive moisture to avoid external corrosion of containers and other equipment.

ADDITIONAL INFORMATION

For additional information, see Air Foam, Mechanical Foam (GEFZC), Foam Extinguishing System Units (GEEZC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S560, ''Category 3 Aqueous Film-Forming Foam (AFFF) Liquid Concentrates,'' and CAN/ULC-S563, ''Category 3 Film-Forming Fluoroprotein (FFFP) Foam Liquid Concentrates.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Foam Liquid Concentrate, Category 3.''

Foam Makers, Fixed (GGIRC)

USE AND INSTALLATION

This category covers foam makers of the fixed type intended to be installed between the supply piping of foam solution (water plus liquid concentrate) and piping leading to the discharge outlet. The foam maker aspirates air into the foam solution passing through the device.

Foam extinguishing systems are intended to be installed in accordance with the applicable requirements of ANSI/NFPA 11, ''Low-, Medium-, and High-Expansion Foam.''

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Air Foam, Mechanical Foam (GEFZC), Foam Extinguishing System Units (GEEZC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S564, ''Categories 1 and 2 Foam Liquid Concentrates.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fixed Air Foam Maker.''

Nozzles, Hose Stream (GHJXC)

USE

This category covers foam hose-stream nozzles, which are portable devices that may be either 1) special playpipes incorporating a foam maker to aspirate air into a foam-water solution to produce foam, or 2) nonaspirating-type nozzles for which the discharge of foam solution produces a foam. These nozzles may pick up foam liquid concentrate directly from a container (self-inducting) or utilize a foam solution produced by introducing the liquid concentrate into a water stream at some remote point.

Nozzles, Hose Stream (GHJXC)−*Continued*

Foam extinguishing systems are intended to be installed in accordance with the applicable requirements of ANSI/NFPA 11, ''Low-, Medium-, and High-Expansion Foam.''

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Air Foam, Mechanical Foam (GEFZC), Foam Extinguishing System Units (GEEZC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S564, ''Categories 1 and 2 Foam Liquid Concentrates.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Foam Hose Stream Nozzle.''

Proportioners, Foam Concentrate (GHXVC)

GENERAL

This category covers proportioners intended to provide continuous introduction of foam liquid concentrates, in adequate ratio, into a water stream flowing under pressure in pipe or hose lines. Introduction is made at or enroute to the foam maker. Foam concentrate may be introduced into flowing water by the following means:

1. **In-line inductor** – By inducting the foam concentrate through single or multiple inductors located in the water line to the foam maker. Inductors may be for portable or fixed installation. They may have an adjustable or fixed orifice for induction.
2. **Bladder or diaphragm tank balanced pressure** – By storing foam concentrate in a tank and forcing the foam concentrate into flowing water through the orifice plate of a ratio-flow controller. Foam concentrate is forced out of the bladder or diaphragm by directing part of the flowing water between the inside of the tank and outside of the bladder or diaphragm.
3. **In-line balanced pressure** – By using a positive displacement pump to provide foam liquid pressure to a foam orifice plate of a ratio-flow controller. A pressure-reducing service diaphragm-balancing valve is used to balance foam liquid and water pressures.
4. **Balanced pressure** – By using a positive displacement pump to provide foam liquid pressure to a foam orifice plate of a ratio-flow controller. A back-pressure service diaphragm-balancing valve is used to balance foam liquid and water pressures.

The certification of a bladder or diaphragm tank balanced-pressure system includes the tank, bladder or diaphragm, center tubes inside the tank and ratio-flow controller.

The certification of an in-line balanced pressure or balanced-pressure system includes the diaphragm-balancing valve and ratio-flow controller.

Foam extinguishing systems are intended to be installed in accordance with the applicable requirements of ANSI/NFPA 11, ''Low-, Medium-, and High-Expansion Foam,'' and ANSI/NFPA 16, ''Installation of Foam-Water Sprinkler and Foam-Water Spray Systems.''

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Air Foam, Mechanical Foam (GEFZC), Foam Extinguishing System Units (GEEZC) and Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S564, ''Categories 1 and 2 Foam Liquid Concentrates.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Air Foam Proportioner.''

FOAM EXTINGUISHERS (GJZSC)

Foam Extinguishers, Expellant Gas Operated (GJZTC)

GENERAL

This category covers foam, expellant-gas-operated extinguishers, which are first-aid fire appliances intended for use on Class A and B fires.

Foam Extinguishers, Expellant Gas Operated (GJZTC)−*Continued*

These extinguishers are intended to be installed, maintained and tested in accordance with the "National Fire Code of Canada."

Chemical Charge — They employ a foam/water solution as the extinguishing agent. The solution is ejected by means of the expellant gas, which is contained in the same chamber as the solution. Fire-extinguishing foam is formed upon discharge through an air-aspirating nozzle. The reliability of operation may be endangered if foam solutions other than those indicated on the extinguisher label are used.

Size — They are of the 9 L capacity to filling mark, or larger, and are provided with a self-closing discharge valve, hose, and nozzle. These extinguishers are rated and classified as indicated in the individual certifications.

Caution — When located where temperatures of 0°C or lower may be encountered, the extinguishers must be protected against freezing.

MARINE USE

All ULC certified foam extinguishers have been approved for use within the jurisdiction of Canadian marine authorities where the extinguisher is of an appropriate size and classification. Compliance with the requirements of other marine jurisdictions is indicated on the extinguisher label.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S554, "Water Based Agent Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Foam Extinguisher, Expellant Gas Operated."

HALOGENATED AGENT EXTINGUISHING SYSTEM UNITS (GLERC)

GENERAL

This category covers halogenated agent extinguishing system units, which are devices assembled in a system to discharge liquefied gas through fixed piping and nozzles for the extinguishment of fires. The systems consist of actuating assemblies designed for manual or automatic operation, cylinder assemblies for storing the agent, discharge assemblies, and miscellaneous subsidiary devices. Cylinder assemblies are superpressurized with dry nitrogen. They are suitable for use over a temperature range of -40°C to +49°C unless otherwise noted in the individual certifications.

Total flooding systems are intended for use with a fixed enclosure about the hazard to enable the required concentration to be built up and maintained for the required period of time to ensure the effective extinguishment of fire in combustible materials.

All system units are suitable for the protection of Class B and C hazards. Some system units, as shown in the individual certifications, are also suitable for the protection of Class A materials. It should be noted that fires involving densely packed fibrous materials, such as baled cotton or pressed fibreboard, are special hazards which cannot be protected by these systems.

Undecomposed Halon 1301 is low in toxicity. However, it may have anaesthetic effects on humans at concentrations above 7% by volume. At concentrations above 20%, it will reduce the oxygen concentration in air below the 16% level generally considered necessary to sustain life.

The products of decomposition of Halon 1301 can be hazardous to personnel. They have a characteristic sharp odour which is highly irritating to the nose, throat, etc. Care should be taken to properly ventilate the hazard area before entering after a fire, as it is possible that toxic concentrations of decomposition products could exist in the hazard area.

Undecomposed Halon 1211 is low in toxicity. However, it may have anaesthetic effects on humans at concentrations above 4%, by volume. At concentrations above 20%, it will reduce the oxygen concentration in air below the 16% level generally considered necessary to sustain life.

The products of decomposition of Halon 1211 can be hazardous to personnel. They have a characteristic sharp odour which is highly irritating to the nose, throat, etc. Care should be taken to avoid inhalation of the agent and the products produced when the agent is applied to fires.

The products of decomposition can also be corrosive to certain types of equipment and facilities. This possibility should be investigated before halogenated agent extinguishing system units are installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

Halogenated Agent Extinguishing System Units (GLERC)−*Continued*

The basic standard used to investigate products in this category is UL 1058, "Halogenated Agent Extinguishing System Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Halogenated Agent Extinguishing System Unit."

FIRE EXTINGUISHER SERVICE AGENCIES (GLOQC)

GENERAL

This category covers the Certification of Agencies engaged in the servicing of portable fire extinguishers.

Portable fire extinguishers, as referenced herein, means any hand portable or wheeled fire extinguisher. Servicing, as referenced herein, means any operation performed on an extinguisher subsequent to its initial sale and installation, the intention of which is the continuance of its function, performance and safety. Service Agencies, as referenced herein, include self-employed individuals, agencies, companies, divisions of companies, and other definable entities who are engaged in the service of portable fire extinguishers. In addition to their fixed service facilities, agencies, where so identified in the individual certifications, are equipped to provide limited service from mobile shops or service vehicles.

The Service Agency bears the responsibility for the correctness of the service performed. ULC makes no representations or warranties, expressed or implied, that serviced extinguishers will prevent any loss by fire or that the extinguisher will, in all instances, provide the protection for which it is installed or intended. ULC does not assume or undertake to discharge any liability for any loss which may result from failure of the extinguisher to perform as intended.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

Certified Service Agencies have demonstrated their ability to perform specific service operations on specified types of extinguishers as described in the individual certifications, and in accordance with CAN/ULC-S532, "Regulation of the Servicing of Portable Fire Extinguishers." This service requires the use of recharge materials as specified on the extinguishers or of materials certified by ULC as being equivalent.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Extinguisher Service Agency."

HALON AND CLEAN AGENT FIRE EXTINGUISHING SYSTEMS AND STORAGE FACILITY SERVICING AGENTS (GLPAC)

GENERAL

This category covers the Certification of Agencies engaged in the servicing of halon and/or clean agent fire extinguishing systems, storage facilities, and components. A fire extinguishing system, as referenced herein, means any fixed system, pre-engineered or engineered, as described in Halogenated Agent Extinguishing System Units (GLERC) or Clean Agent Extinguishing System Units (GAQFC). Servicing, as referenced herein, means any operation performed on an extinguishing system subsequent to its initial sale and installation, the intention of which is the continuance of its function, performance and safety. Storage facilities include any designated premise for the storage of halon and/or clean agents. Service Agencies, as referenced herein, include self-employed individuals, agencies, companies, divisions of companies, and other definable entities who are engaged in the service of halon and/or clean agent fire extinguishing system units.

The Service Agency bears the responsibility for the correctness of the service performed. ULC makes no representations or warranties, expressed or implied, that serviced extinguishing systems will prevent any loss by fire or that the system will, in all instances, provide the protection for which it is installed or intended. ULC does not assume or undertake to discharge any liability for any loss which may result from failure of the extinguishing system components or storage facilities to perform as intended.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

Halon and Clean Agent Fire Extinguishing Systems and Storage Facility Servicing Agents (GLPAC)−*Continued*

REQUIREMENTS

Certified Service Agencies have demonstrated their ability to perform specific service operations on extinguishing systems and/or the monitoring and control of storage facilities, as described in the individual certifications, and in accordance with ULC/ORD-C1058.18, "Regulation of the Servicing of Halon Extinguishing Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Halon and Clean Agent Fire Extinguishing System and Storage Facility Servicing Agent."

RESTAURANT COOKING AREA FIRE EXTINGUISHING SYSTEMS SERVICING AGENTS (GLXXC)

GENERAL

This category covers the Certification of Agencies engaged in the servicing of restaurant cooking area fire extinguishing systems, and components. A fire extinguishing system, as referenced herein, means any fixed system, pre-engineered, wet chemical, as described in Water Extinguishers, Expellant Gas Operated (GNFVC). Servicing, as referenced herein, means any operation performed on an extinguishing system subsequent to its initial sale and installation, the intention of which is the continuance of its function, performance and safety. Service Agencies, as referenced herein, include self-employed individuals, agencies, companies, divisions of companies, and other definable entities, who are engaged in the service of restaurant cooking area fire extinguishing system units.

The Service Agency bears the responsibility for the correctness of the service performed. ULC makes no representations or warranties, expressed or implied, that serviced extinguishing systems will prevent any loss by fire or that the system will, in all instances, provide the protection for which it is installed or intended. ULC does not assume or undertake to discharge any liability for any loss which may result from failure of the extinguishing system components to perform as intended.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

Certified Service Agencies have demonstrated their ability to perform specific service operations on extinguishing systems, as described in the individual certifications, and in accordance with ULC/ORD-C1254.18, "The Servicing of Restaurant Cooking Area Extinguishing Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Restaurant Cooking Area Fire Extinguishing System Servicing Agent."

SELF-CONTAINED AUTOMATIC EXTINGUISHER UNITS (GMFZC)

GENERAL

This category covers fixed extinguisher units having integral automatically operated thermal fire detection. The fire-extinguishing classifications of these extinguisher units are developed at ambient room temperature (approximately 21°C/70°F) and may be reduced at lower temperature. These units are intended to be installed and maintained in accordance with the certified company's installation and maintenance manual dated as specified in the individual certifications. Copies of the manual can be obtained from the certified company.

Authorities Having Jurisdiction should be consulted as to the acceptability for particular hazards and requirements covering installation.

USE

The hazards to be protected, extinguishing agent capacities and application limitations are indicated in the individual certifications. These units are not intended for protection of hazard areas larger than specified in the individual certifications with multiple units, or for use in occupied spaces including sleeping rooms unless specified in the individual certifications. Breathing of fumes or vapors after discharge of the unit should be avoided.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

Self-contained Automatic Extinguisher Units (GMFZC)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 1254, "Pre-Engineered Dry Chemical Extinguishing System Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Self-contained Automatic Extinguisher Unit" or "Automatic Extinguisher Unit."

WATER EXTINGUISHERS, EXPELLANT GAS OPERATED (GNFVC)

GENERAL

This category covers expellant-gas-operated water extinguishers, which are first-aid fire appliances intended for use on Class A fires and, where indicated, suitable for use on fires involving Class C hazards.

These devices are intended to be installed, maintained and tested in accordance with the "National Fire Code of Canada."

Chemical Charge — They employ plain water as the extinguishing agent. Water is ejected by means of the expellant gas, which is contained in the same chamber as the extinguishing agent. The reliability of operation may be endangered if liquids other than plain water are used.

Size — They are of the 9 L capacity to filling mark, and are provided with a self-closing discharge valve and a hose and nozzle. These extinguishers are rated and classified 2-A.

Caution — When located where temperatures of 0°C or lower may be encountered, the extinguishers must be protected against freezing.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S507, "Water Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Water Extinguisher, Expellant Gas Operated."

WATER-SPRAY FIRE EXTINGUISHERS (GNVYC)

GENERAL

This category covers water-spray fire extinguishers, which are portable appliances of the stored pressure, cartridge or pressurized-cylinder-operated type as indicated in the individual Listings. Unless otherwise specified in the individual Listings, they are intended for operation in the temperature range of 2°C to 49°C. Operation of these units may be affected by use at temperatures outside these limits.

These portable extinguishers are provided with a self-closing shutoff nozzle or control valve and utilize a nozzle and/or nozzle and hose assembly as a means of directing the discharge. Hand portable extinguishers are provided with a carrying handle for portability and a wall hook or bracket for mounting.

USE AND INSTALLATION

These fire extinguishers are intended for use on Class A and C fires unless otherwise indicated in the individual Listings. These extinguishers are intended to be installed, maintained and tested in accordance with the applicable requirements of the "National Fire Code of Canada."

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S508, "Rating and Fire Testing of Fire Extinguishers," and CAN/ULC-S554, "Water Based Agent Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Water-spray Fire Extinguisher – Classification ____."

WET CHEMICAL EXTINGUISHING SYSTEM UNITS (GOASC)

GENERAL

This category covers wet-chemical fire extinguishing system units, which are assembled in a system designed to discharge a chemical extinguishing solution through fixed piping and nozzles. They are suitable for use over a temperature range of -22°C to +49°C unless otherwise noted in the individual certifications. Expellant-gas-operated systems consist of actuating assemblies designed for automatic and manual operation, expellant-gas assemblies and miscellaneous devices. Systems of the stored-pressure type have the expellant gas stored in the same cylinder as the extinguishing agent.

Actuating assemblies provide a means of operating the cylinder valves, thereby expelling the solution. They may include pneumatic-release devices, trip levers, mechanical linkages, and cables and pulleys.

Discharge assemblies provide a means of directing the discharge. They include fixed piping and specially designed nozzles.

Miscellaneous devices include mechanically operated gas-shutoff valves and electrical power shutoff devices.

These systems are intended for the extinguishment of fires in hoods, filters and ducts used for ventilation of restaurant cooking equipment. Protection for fires originating in associated cooking appliances is provided as indicated in the individual certifications. Additional protection is required in ducts where pools of grease may collect.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C1254.6-95, "Fire Testing of Restaurant Cooking Area Fire Extinguisher System Units," and ANSI/UL 1254, "Pre-Engineered Dry Chemical Extinguishing Systems Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wet Chemical Extinguishing System Unit."

EXTINGUISHERS, MISCELLANEOUS (GOUZC)

Wet Chemical Automatic Fire Extinguisher Units (GMCHC)

USE

This category covers automatic fire extinguisher units of the type and capacity noted in the individual certifications. The units are intended for specific fixed installations as described in the individual certifications and are unclassified as to their fire-extinguishing potential.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S554, "Water Based Agent Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wet Chemical Automatic Fire Extinguisher Unit."

Wet Chemical Fire Extinguishers (GNXGC)

GENERAL

This category covers extinguishers that use a wet chemical solution as the extinguishant. They are suitable for the extinguishment of Class A, Class B, or specific types of fires as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S507, "Water Fire Extinguishers." The extinguishers meet the safety requirements of CAN/ULC-S507, but may vary in discharge characteristics, temperature tolerances, durations and content. Total mass does not exceed 20 kg.

Wet Chemical Fire Extinguishers (GNXGC)–*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wet Chemical Fire Extinguisher."

Back Pack Foam Fire Extinguishers (GOVJC)

GENERAL

This category covers back-pack foam extinguishers, which are first-aid fire appliances intended for use on Class A and B fires. These extinguishers use a wet chemical solution as the extinguishant.

Back-pack extinguishers consist of a rigid or soft tank, shoulder straps, and a single-action, positive-displacement, trombone-type, hand-operated pump.

These extinguishers are intended to be installed, maintained and tested in accordance with the "National Fire Code of Canada."

Chemical Charge — They employ a foam/water solution as the extinguishing agent. The solution is ejected by means of the pump action which inducts foam concentrate contained in one container with water contained in the back pack. Fire-extinguishing foam is formed upon discharge through an air-aspirating nozzle. The reliability of operation may be endangered if foam solutions other than those indicated on the extinguisher label are used.

Size — They are of the capacity rating and classification as indicated in the individual certifications.

Caution — When located where temperatures of 0°C or lower may be encountered, the extinguishers must be protected against freezing.

MARINE USE

All ULC certified foam extinguishers have been approved for use within the jurisdiction of Canadian marine authorities where the extinguisher is of an appropriate size and classification. Compliance with the requirements of other marine jurisdictions is indicated on the extinguisher label.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S557, "Back-Pack Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Back Pack Foam Fire Extinguisher."

MISCELLANEOUS COMPONENTS (GOYKC)

The devices covered under this category are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its application and use in complete assemblies submitted for examination and tests to Underwriters Laboratories of Canada.

Pulleys for Fire Extinguishing Systems (FWKRC)

GENERAL

This category covers pulleys suitable for use in the manufacture of wet- and dry-chemical extinguishing system units where the suitability of the application has been investigated by Underwriters Laboratories of Canada. These devices are intended for use as components of completed equipment submitted for investigation, and not for separate installation in the field.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 1254, "Pre-Engineered Dry Chemical Extinguishing System Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pulley for Fire Extinguishing Systems."

Shell Components for Extinguishers, Hand and Wheeled (GAVHC)

GENERAL

The devices covered under this category are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its application and use in complete assemblies of fire extinguishers submitted for examination and tests to Underwriters Laboratories of Canada.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S504, "Dry Chemical Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Shell Component for Extinguishers, Hand and Wheeled."

Hose Assemblies for Fire Extinguishers (GLUXC)

GENERAL

The devices covered under this category are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct, separate installation in the field. The final acceptance of the component is dependent upon its application and use in complete systems submitted to Underwriters Laboratories of Canada.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S504, "Dry Chemical Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Hose Assembly for Fire Extinguishers – Component."

Tamper Indicators for Fire Extinguishers, Hand and Wheeled (GOZCC)

GENERAL

The devices covered under this category are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon installation and use in complete equipment submitted to Underwriters Laboratories of Canada.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S504, "Dry Chemical Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Tamper Indicator for Fire Extinguishers, Hand and Wheeled."

Discharge Valves for Fire Extinguishers, Hand and Wheeled (GOZGC)

GENERAL

The devices covered under this category are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon installation and use of the complete equipment submitted to Underwriters Laboratories of Canada.

Discharge Valves for Fire Extinguishers, Hand and Wheeled (GOZGC)–*Continued*

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S503, "Carbon Dioxide Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Component, Discharge Valve for Fire Extinguishers, Hand and Wheeled."

Clean Agent Extinguishing Media (GOZNC)

GENERAL

The products covered under this category have been assessed with respect to their fire-extinguishing performance, their ozone-depletion characteristics and their toxicity, and are intended for use as components of complete extinguishing systems or portable extinguishers. The final acceptance of the extinguishing media covered under this category is dependent upon its application and use in complete systems or fire extinguishers submitted to Underwriters Laboratories of Canada.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is UL 2166, "Halocarbon Clean Agent Extinguishing System Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Clean Agent Extinguishing Media."

Gauges, Pressure, for Fire Extinguishers (GOZXC)

GENERAL

This category covers pressure gauges suitable for use in the manufacture of stored-pressure-type hand portable fire extinguishers as indicated in the individual certifications, where the suitability of the application has been investigated by Underwriters Laboratories of Canada. These devices are intended for use as components of completed equipment submitted for investigation, and not for separate installation in the field.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S504, "Dry Chemical Fire Extinguishers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gauge, Pressure, for Fire Extinguishers."

Marking and Labeling Components for Fire Extinguishers, Hand and Wheeled (PGDQC)

GENERAL

The devices covered under this category are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon installation and use in complete equipment submitted to Underwriters Laboratories of Canada.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S504, "Dry Chemical Fire Extinguishers."

Marking and Labeling Components for Fire Extinguishers, Hand and Wheeled (PGDQC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Marking and Labeling Component for Fire Extinguishers, Hand and Wheeled."

CLEAN AGENT EXTINGUISHING SYSTEM UNITS, MARINE (GOYWC)

USE AND INSTALLATION

This category covers clean agent extinguishing system units, which are devices assembled in a system to discharge an extinguishing agent through fixed piping and nozzles for the extinguishment of fires. These units include actuating assemblies designed for automatic and manual operation, tank assemblies for storing the extinguishing agent, discharge assemblies, manifold check valves, selector valves, discharge nozzles, and other miscellaneous devices.

Clean agent extinguishing system units are intended to be used in accordance with Environment Canada rules for chemicals intended to replace stratospheric ozone-depleting substances.

Clean agent extinguishing systems are intended to be designed, installed and maintained in accordance with ANSI/NFPA 2001, "Clean Agent Fire Extinguishing Systems," IMO MSC/Circular 848, and the manufacturer's installation and maintenance manual. These units are designed for total flooding applications unless otherwise indicated in the individual certifications. For total flooding applications, the hazard is surrounded by a fixed enclosure, which enables the required concentration to be built up and maintained for the required period of time to ensure the effective extinguishment of fire in combustible materials.

The total flooding design concentrations for surface type Class A and B fires are specified in the individual manufacturer's design and/or installation manual referenced in the individual certifications.

For information regarding safeguards for personnel, products of decomposition, and exposure to the agent, refer to the applicable sections of ANSI/NFPA 2001.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units (FWFZC).

REQUIREMENTS

The basic standards used to investigate products in this category are UL 2127, "Inert Gas Clean Agent Extinguishing System Units," and UL 2166, "Halocarbon Clean Agent Extinguishing System Units."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Clean Agent Extinguishing System Unit, Marine."

FABRICS (GPIXC)

This category covers fabrics intended for awnings, special-purpose covers, draperies, decorations, and other uses.

FABRICS, FLAME-RESISTANT (GPJYC)

GENERAL

This category covers fabrics investigated for burning characteristics when subjected to a small-flame test and a large-flame test. Performance requirements include resistance to flaming of melted or dripping particles, and limitations on vertical spread of flame.

Fabrics intended for interior uses may also comply with the performance requirements after being subjected to a specific type of cleaning as recommended by the manufacturer and indicated in the individual certifications.

Fabrics indicated "for exterior use" have been investigated for their performance requirements after weatherability and other exposure conditions.

Four types of fabrics are covered under this category:

Flame-Resistant Fabric, Impregnated — These are chemically treated fabrics, in various colours, which are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds. The treatment may be expected to remain effective under ordinary conditions or exposure for the useful life of the fabric. Laundering or other cleaning methods will reduce the effectiveness of the treatment when so indicated in the individual certifications.

Flame-Resistant Fabrics, Synthetic — These fabrics are composed of woven synthetic fibres, in various colours, which are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds. Smoldering combustion may follow flaming and may spread in folds. Laundering or other cleaning methods will not affect the flammability of the fabrics unless indicated.

Fabrics, Flame-Resistant (GPJYC)−*Continued*

Flame-Resistant Fabrics, Plastic-Coated — These fabrics are composed of plastic-coated fibres, in various colours, which are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds. Laundering or other cleaning methods will not affect the flammability of the fabrics unless indicated.

Flame-Resistant Fabrics, Plastic-Faced — These are composed of fabrics to which a plastic film, in various colours, is laminated to one or both sides. They are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds. Laundering or other cleaning methods will not affect the flammability of the fabrics unless indicated.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S109, "Flame Tests of Flame-Resistant Fabrics and Films."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flame Resistant Fabric."

FLAME-RESISTANT TENT FABRICS (GPKNC)

GENERAL

This category covers flame-resistant fabrics used in the construction of tents. These fabrics have been investigated for burning characteristics when subjected to a small-flame test and a large-flame test. Performance requirements include resistance to flaming of melted or dripping particles and limitations on vertical spread of flame. These fabrics have also been investigated for their performance requirements after weatherability and other exposure conditions.

The structural or other properties of the tents have not been investigated.

The certifications pertain to the materials themselves and not to the structures in which they are installed.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S109, "Flame Tests of Flame-Resistant Fabrics and Films."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flame Resistant Tent Fabric."

FIRE DOORS (GSNVC)

GENERAL

This category covers fire doors designed for the protection of openings in fire separations against fire when installed in accordance with the "National Building Code of Canada," and the requirements recommended in ANSI/NFPA 80, "Fire Doors and Other Opening Protectives."

When considering the various ratings of a particular fire door, such as 4 h, 3 h, 1-1/2 h, 1 h, 3/4 h or 20 minutes, it should be noted that the basic design of the doors has been established as a result of a representative door being subjected to a fire and hose stream test. Doors that have been positive-pressure tested are indicated in the individual certifications.

The rating of 4 h, 3 h, 2 h, 1-1/2 h, 1 h, 3/4 h or 20 minutes indicates the duration of exposure to fire. The temperature rise refers to the temperature developed on the unexposed face of the door at the end of 30 or 60 minutes of fire exposure. Those labels which do not show temperature rise are for doors that develop temperature rises in excess of 250°C during the first 30 minutes of fire exposure. Doors rated 3/4 h, in which 6 mm thick wired-glass lights in excess of 0.065 m^2 per door or leaf are permitted, are not classified as to temperature rise. Doors with glass vision panels of 0.065 m^2 or less per wall opening carry the same temperature rise classification as similar doors without glass lights.

If the door performs successfully during a 4 h test, then all ratings also apply; if the door performs successfully during a 3 h test, then only the 2 h, 1-1/2 h, 1 h, 3/4 h and 20 minute ratings also apply; if the door per-

forms successfully for a 1-1/2 h test, then only the 1 h, 3/4 h, and 20 minute ratings also apply. Similarly, the lower rating for doors performing successfully for 3/4 h would also apply. The ratings assigned to a particular door are influenced by the following:

(a) The duration of the fire test
(b) The intended location
(c) Provisions for glass lights
(d) Latching requirements

The protection of an opening depends not only upon the use of a ULC labelled door of the proper type, but also upon the use of ULC labelled accessories, as specified in the general Guide Information for each respective type of door. Authorities Having Jurisdiction should be consulted as to which type, mounting, hardware and frame are acceptable for any given location.

The following definitions are used in the various fire door categories:

1. **Locks or Latches** — The term locks or latches are used interchangeably. The function of either is to hold a door in the closed position under a fire condition.
2. **Latch Throw** — The throw of a latch given in millimetres is the distance the latch protrudes from the edge of the door and is greater than the actual engagement of the latch in the strike. (The engagement is controlled by the door installation requirements given in ANSI/NFPA 80 or as otherwise specified in the individual certifications.)
3. **Fire Door Hardware** — Fire door hardware (see GZYXC) is of the surface type for application with swinging (single or in pairs), horizontal-sliding (single-slide or centre-parting) or vertical-sliding fire doors.
4. **Builders' Hardware** — Builders' hardware is of the recessed type and consists of butt hinges, pivots or olive knuckles and single- or three-point latches. Installation requirements for fire door application are specified in ANSI/NFPA 80.
5. **Fire Exit Hardware** — Fire exit hardware (see GXHXC) is panic-type hardware investigated from the standpoint of fire and panic protection. It is designed to facilitate the safe egress of persons in the case of emergency. This hardware is intended for use on swinging fire doors of the ratings, types and sizes as shown in the individual certifications under this category.
6. **Panic Hardware** — Panic hardware (see FVSRC) is designed to facilitate the safe egress of persons in the case of emergency. This hardware is not intended for use with fire doors.
7. **Door Opening Size** — In all cases, the maximum door opening sizes are given rather than the actual door sizes. The clearances around the edges of a door when hung in a ULC labelled frame are intended to be in accordance with the requirements contained in ANSI/NFPA 80.
8. **Closing Device** — A closing device is a mechanism which, if kept in good working condition, will ensure that the fire doors are kept in a closed position and latched, or, if normally open, will close and latch the door at time of fire.
9. **Astragal** — An astragal is a metal strip used to cover the opening between the inactive and active leafs of door swinging in pairs. Doors swinging in pairs are intended to be provided with astragals unless otherwise specified in the individual certifications to provide the necessary protection in accordance with ANSI/NFPA 80.

While doors for openings exceeding the maximum size limitations have not been subjected to standard fire tests, in certain cases ULC may be prepared to furnish a label for such oversize doors, after a detailed review of drawings. In addition, ULC reserves the option of a factory and field inspection. The oversize labels do not indicate that the doors are capable of furnishing standard fire protection but only that the doors conform to the requirements of design, material and construction as established in the individual certifications.

Authorities Having Jurisdiction should be consulted as to the size of door that will be acceptable in a given location.

COMPOSITE TYPE

Composite fire doors covered under this category are of the steel-covered, wood-covered or plastic-covered type. They consist of a manufactured core material with either steel edges or chemically impregnated wood edges, and face veneers of either steel, wood or plastic.

Each certified sliding and swinging steel-covered door bears a "Fire Door" label with reference to one of the following ratings: 3 h, 1-1/2 h, 3/4 h or 20 minutes and, where applicable, temperature rise, and minimum latch throw. In addition to the above, some manufacturers of swinging doors are eligible to furnish doors bearing the marking, "Fire Door to be equipped with Fire Exit Hardware," as indicated in the individual certifications.

Wood- and plastic-covered fire doors are of the swinging type only. Each certified door of this type bears a "Fire Door" label with reference to one of the following ratings: 1-1/2 h, 1 h, 3/4 h or 20 minutes, together with the appropriate letter designation and minimum latch throw and, where applicable, temperature rise. In addition to the above, some manufacturers

are eligible to furnish doors bearing the marking, "Fire Door to be Equipped with Fire Exit Hardware," as indicated in the individual certifications.

The label covers the design and construction of the door only.

Dutch Door — Dutch-type door panels bearing a fire door label for 3 h, 1-1/2 h, 3/4 h or 20 minutes may be provided by some manufacturers as indicated in the individual certifications.

Sizes — The maximum size of opening to be protected is indicated in the individual certifications.

Astragals — Doors swinging in pairs are intended to be provided with astragals, unless otherwise specified in the individual certifications, to provide the necessary protection in accordance with ANSI/NFPA 80.

Glass Lights — Some wood- or plastic-covered composite door manufacturers can furnish doors bearing 1-1/2 h, 1 h, or 3/4 h labels with glass lights of maximum sizes as indicated in the individual certifications.

Glass lights for steel-covered composite doors are intended to be in accordance with the following dimensional limitations applicable to the particular rating classification required. The glass lights, when employed, consist of wired-glass of 6 mm minimum thickness.

(I) 3 h – Glass lights are not permitted.

(II) 1-1/2 and 1 h – The exposed glass area shall not exceed 0.065 m^2 per individual door or leaf with no dimension exceeding 300 mm. Flush doors may be provided with long narrow vision panels in which the glass area shall not exceed 0.065 m^2 per individual door or leaf with the height not exceeding 840 mm and the width not exceeding 250 mm.

(III) 3/4 h and 20 minute – The exposed glass area per light shall not exceed 0.84 m^2 with neither dimension exceeding 1370 mm. More than one light per door or opening is permitted with no restrictions as to the total combined glass area (e.g., may have two glass lights in the same door, each with a maximum exposed glass area of 0.84 m^2).

Accessories for Installation

Locks, Latches and Bolts — Single-swing doors for all locations are intended to be provided with ULC labelled single-point locks or latches with a minimum throw of 12.7 mm.

Doors swinging in pairs for all locations are intended to be provided with ULC labelled single-point locks or latches with a minimum throw of 19 mm. The inactive leaf of doors (steel-covered) swinging in pairs is intended to be provided with ULC labelled automatic or self-latching top and bottom flush bolts with a minimum throw of 19 mm. The inactive leaf of doors (wood or plastic-covered) swinging in pairs is intended to be provided with ULC labelled automatic or self-latching top and bottom surface mounted steel bolts with a minimum throw of 19 mm.

Variations in the abovementioned minimum throw requirements are indicated in the individual certifications.

For a list of manufacturers of single-point locks or latches, see Single-Point Locks or Latches (GYJTC) and Single-Point Locks or Latches, Electrically Controlled (GYKHC).

Hinges — All steel-covered doors are intended to be provided with steel hinges, pivots or olive knuckles in accordance with ANSI/NFPA 80. Except as indicated in the individual certifications, all wood- or plastic-covered doors are intended to be provided with steel hinges (not pivots or olive knuckles) in accordance with ANSI/NFPA 80.

Door Frames — Swinging doors of this type are intended to be installed in ULC labelled door frames. See Door and Window Frames (GVTVC).

Door Closers — ULC labelled door closers and door-operating devices are intended to be installed in accordance with ANSI/NFPA 80. See Swinging Door Closers (GVEVC).

Sliding Door Hardware — Sliding doors of the steel-covered type are intended to be provided with ULC labelled surface-mounted fire door hardware. See Fire Door Hardware (GZYXC).

ACCESS, CHUTE, DUMBWAITER AND SERVICE COUNTER TYPES

Access doors are of the swinging types, formed of steel, of the flush design, with frames, latching and closing mechanism.

Chute doors of the intake and discharge types are of formed steel, of the flush design, with frame, latching and closing mechanism.

Dumbwaiter doors are of counterbalanced and swinging types of the flush design, of formed steel and include wall guides, frame, latching and counterbalancing mechanisms.

Service counter doors are of the single and two-speed counterbalanced types of flush design, or of the rolling type, of formed steel and include wall guides, frame, sill latching and counterbalancing mechanisms.

Each door bears a "Frame and Fire Door Assembly" label with one of the following ratings: 1-1/2 h Temp Rise - 30 minutes - 250°C maximum, 1-1/2 h Temp Rise - 60 minutes - 250°C maximum, or 1-1/2 h, unless otherwise specified in the individual certifications with no reference to temperature rise. The label on all doors of these types covers the design and construction of the door, frame and hardware; for service counter doors the label includes the sill.

Access, chute, dumbwaiter and service counter door assemblies covered under this category are suitable only for installation in concrete or masonry wall construction unless otherwise specified in the individual certifications.

Sizes — Access doors are labelled for openings not exceeding 920 mm in width and 920 mm in height.

Chute doors of the intake type are labelled for openings not exceeding 920 mm in width and 920 mm in height, and discharge doors not exceeding 920 mm in width and 1220 mm in height.

Dumbwaiter doors are labelled for openings not exceeding 1220 mm in width and 1760 mm in height.

Service counter doors are labelled for openings not exceeding 1830 mm in width and 1530 mm in height.

Glass Lights — Dumbwaiter doors may be provided with 6 mm thick wired-glass vision lights not exceeding 0.065 m^2 per individual door or leaf.

HOLLOW-METAL TYPE

Hollow-metal fire doors covered under this category are either of the flush or panelled design.

Each certified door bears a "Fire Door" label with the reference to one of the following ratings: 3 h, 1-1/2 h, 3/4 h or 20 minutes and minimum latch throw and, where applicable, temperature rise. In addition to the above, some manufacturers are eligible to furnish doors bearing the marking, "Fire Door to be Equipped with Fire Exit Hardware," as indicated in the individual certifications.

The label covers the design and construction of the door only.

Dutch Door — Dutch-type door panels bearing a Fire Door label for 3 h, 1-1/2 h, 3/4 h or 20 minutes may be provided by some manufacturers as indicated in the individual certifications.

Sizes — The maximum size of opening to be protected is indicated in the individual certifications.

Astragals — Doors swinging in pairs are intended to be provided with astragals unless otherwise specified in the individual certifications to provide the necessary protection in accordance with ANSI/NFPA 80.

Glass Lights — Glass lights for hollow-metal doors are intended to be in accordance with the following dimensional limitations applicable to the particular rating classification required. The glass lights, when employed, consist of wired-glass of 6 mm minimum thickness.

(I) 3 h – Glass lights are not permitted.

(II) 1-1/2 h – The exposed glass area shall not exceed 0.065 m^2 per individual door or leaf with no dimension exceeding 300 mm. Flush doors may be provided with long or narrow vision panels in which the glass area shall not exceed 0.065 m^2 per individual door or leaf with the height not exceeding 840 mm and the width not exceeding 250 mm.

(III) 3/4 h and 20 minute – The exposed glass area per light shall not exceed 0.84 m^2 with neither dimension exceeding 1370 mm. More than one light per door or opening is permitted with no restrictions as to the total combined glass area (e.g., may have two glass lights in the same door, each with a maximum exposed glass area of 0.84 m^2.

Accessories for Installation

Locks, Latches and Bolts — Single-swing doors for all locations are intended to be provided with ULC labelled single-point locks or latches with a minimum throw of 12.7 mm.

Doors swinging in pairs for all locations are intended to be provided with ULC labelled single-point locks or latches with a minimum throw of 19 mm. The inactive leaf of doors swinging in pairs is intended to be provided with ULC labelled automatic or self-latching top and bottom flush bolts or surface-mounted steel bolts with a minimum throw of 19 mm.

Variations in the abovementioned minimum throw requirements are indicated in the individual certifications.

For a list of manufacturers of single-point locks or latches, see Single-Point Locks or Latches (GYJTC) and Single-Point Locks or Latches, Electrically Controlled (GYKHC).

Hinges — All swinging doors are intended to be provided with steel hinges, pivots or olive knuckles in accordance with ANSI/NFPA 80.

Door Frames — Swinging doors of this type are intended to be installed in ULC labelled door frames. See Door and Window Frames (GVTVC).

Door Closers — ULC labelled door closers and door-operating devices are intended to be installed in accordance with ANSI/NFPA 80. See Swinging Door Closers (GVEVC).

METAL-CLAD (KALAMEIN) TYPE

Metal-clad (Kalamein) fire doors covered under this category are either of the flush or panelled design consisting of metal-covered wood cores.

Each certified door bears a "Fire Door" label with reference to one of the following ratings: 1-1/2 h, 3/4 h or 20 minutes and, where applicable, temperature rise.

The label covers the design and construction of the door only.

Sizes — The maximum size of opening to be protected is indicated in the individual certifications.

Astragals — Doors swinging in pairs are intended to be provided with astragals unless otherwise specified in the individual certifications to provide the necessary protection in accordance with ANSI/NFPA 80.

Glass Lights — Glass lights for metal-clad (Kalamein) doors are intended to be in accordance with the following dimensional limitations applicable to the particular rating classification required. The glass lights, when employed, consist of wired-glass of 6 mm minimum thickness.

(I) 1-1/2 h – The exposed glass area shall not exceed 0.065 m^2 per individual door or leaf with no dimension exceeding 300 mm.

(II) 3/4 h and 20 minute – The exposed glass area per light shall not exceed 0.84 m^2 with neither dimension exceeding 1370 mm. More than one light per door or opening is permitted with no restrictions as to total combined glass area (e.g., may have two glass lights in the same door, each with a maximum exposed glass area of 0.84 m^2).

Accessories for Installation

Locks, Latches and Bolts — Single-swing doors for all locations are intended to be provided with ULC labelled single-point locks or latches with a minimum throw of 12.7 mm.

Doors swinging in pairs for all locations are intended to be provided with ULC labelled single-point locks or latches with a minimum throw of 19 mm. The inactive leaf of doors swinging in pairs is intended to be provided with ULC labelled automatic or self-latching top and bottom flush bolts with a minimum throw of 19 mm.

Variations in the abovementioned minimum throw requirements are indicated in the individual certifications.

For a list of manufacturers of single-point locks or latches, see Single-Point Locks or Latches (GYJTC) and Single-Point Locks or Latches, Electrically Controlled (GYKHC).

Hinges — These doors are intended to be provided with steel hinges, pivots or olive knuckles in accordance with ANSI/NFPA 80.

Door Frames — These doors are intended to be installed in ULC labelled door frames. See Door and Window Frames (GVTVC).

Door Closers — ULC labelled door closers and door operating devices are intended to be installed in accordance with ANSI/NFPA 80. See Swinging Door Closers (GVEVC).

PASSENGER ELEVATOR (HOLLOW-METAL) TYPE

Hollow-metal passenger elevator doors covered under this category are single-slide or centre-parting assemblies comprising door panels, frame, header, track, hangers, sill, sill support plates, sill brackets, pendant bolts, retaining angles, closer assembly and interlock.

Each certified completed assembly bears a master "Passenger Elevator Fire Door and Frame Assembly" label with reference to a 2 h, 1-1/2 h or 3/4 h rating unless otherwise specified in the individual certifications on one of the hall trim components or on a door panel positioned in such a way as to render it readily visible to Authorities Having Jurisdiction.

All other major components of the assembly bear a "Component for Passenger Elevator Fire Door and Frame Assembly" label, or, in the event of hardware being supplied by an alternate manufacturer, such items of hardware will bear a "Passenger Elevator Door Hardware" label, under Elevator Fire Door Hardware, Passenger (GZKZC).

Assemblies that do not include hardware are noted in the individual certifications.

Passenger elevator door assemblies covered under this category are suitable only for installation in concrete or masonry shaft wall construction unless otherwise specified in the individual certifications.

Some passenger elevator door assemblies covered under this category may be provided with an interlock mechanism and associated wiring, which is operational for a period of a least 1 h when the assembly is subjected to the standard fire exposure described in CAN4-S104, "Standard Method for Fire Test of Door Assemblies." Assemblies that do not qualify are indicated in the individual certifications.

Sizes — The maximum sizes of panel and frame opening permitted are shown in the individual certifications.

Glass Lights — These doors are not provided with glass lights.

ROLLING STEEL TYPE

Rolling steel fire doors covered under this category consist of interlocking galvanized steel slats, bottom bars, wall guides, counterbalancing, and automatic mechanisms. They may be provided with a motor-drive assembly that does not interfere with the manual or automatic closing of the door.

Each certified door bears a "Fire Door" label with reference to one of the following ratings: 4 h, 3 h, 1-1/2 h, or 3/4 h but with no reference to temperature rise. The label covers the design and construction of the door, including the governor and automatic releasing mechanism.

Sizes — Rolling and lift-up steel doors are labelled for openings not exceeding 13.4 m^2 in area with no dimension exceeding 3660 mm unless otherwise specified in the individual certifications.

Glass Lights — Rolling and lift-up steel doors are not provided with glass lights.

Installation — Rolling and lift-up steel doors, unless otherwise noted in the individual certifications, are intended for installation in masonry construction.

SHEET-METAL TYPE

Sheet-metal fire doors covered under this category are of formed steel. They are of the corrugated, flush or panelled designs.

Each certified door bears a "Fire Door" label with reference to one of the following ratings: 3 h, 1-1/2 h, 3/4 h or 20 minutes, and minimum latch throw when applicable but with no reference to temperature rise. In addition to the abovementioned, some manufacturers are eligible to furnish doors bearing the marking, "Fire Door to be Equipped with Fire Exit Hardware," as indicated in the individual certifications. The label covers the design and construction of the door only.

Sizes

Type of Door	Max Size of Opening, m^2	Max Size of Opening Width, mm	Height, mm
Horizontal sliding, single	11.0	3660	3660
Horizontal sliding, centre-parting	11.0	3660	3660
Vertical sliding	7.5	3050	3050
Swinging, single	—	1830	3660
Swinging, in pairs	—	3050	3660

Astragals — Doors swinging in pairs are intended to be provided with astragals unless otherwise specified in the individual certifications to provide the necessary protection in accordance with ANSI/NFPA 80.

Glass Lights — Glass lights for sheet-metal doors are intended to be in accordance with the following dimensional limitations applicable to the particular rating classification required. The glass lights, when employed, consist of a wired-glass of 6 mm minimum thickness.

(I) 3 h – Glass lights are not permitted.

(II) 1-1/2 h – The exposed glass area shall not exceed 0.065 m^2 per individual door or leaf with no dimension exceeding 300 mm.

(III) 3/4 h and 20 minute – The exposed glass area per light shall not exceed 0.84 m^2 with neither dimension exceeding 1760 mm. More than one light per door or opening is permitted with no restrictions as to the total combined glass area (e.g., may have two glass lights in the same door, each with a maximum exposed glass area of 0.84 m^2).

Accessories for Installation

Locks, Latches and Bolts — Single-swinging doors and doors swinging in pairs of the corrugated, flush or panelled design for installation in 3 h locations, in openings of size greater than 1220 mm in width by 2440 mm in height, or 2440 mm in width by 2440 mm in height respectively, are intended to be provided with ULC labelled surface-mounted fire door hardware. See Fire Door Hardware (GZYXC).

Single-swing doors of the flush or panelled design for installation in all other locations are intended to be provided with either ULC labelled surface-mounted fire door hardware or ULC labelled single-point locks or latches with a minimum throw of 12.7 mm.

Doors swinging in pairs of the flush or panelled design for installation in all other locations are intended to be provided with either ULC labelled surface-mounted fire door hardware or ULC labelled single-point locks or latches with a minimum throw of 19 mm. The inactive leaf of doors swinging in pairs is intended to be provided with ULC labelled self-latching or automatic top and bottom flush bolts or surface-mounted steel bolts with a minimum throw of 19 mm.

Where single-point locks or latches are permitted in the individual certifications, variations in the abovementioned minimum throw requirements are indicated in the individual certifications.

For a list of manufacturers of single-point locks or latches, see Single-Point Locks or Latches (GYJTC) and Single-Point Locks or Latches, Electrically Controlled (GYKHC).

Hinges — Swinging doors of the flush or panelled design for 3 h locations and all doors of the corrugated design are intended to be provided with ULC labelled surface-mounted hinges. See Fire Door Hardware (GZYXC).

Doors of the flush or panelled design for all other locations are intended to be provided with either ULC labelled surface-mounted hinges or steel hinges, pivots or olive knuckles in accordance with ANSI/NFPA 80.

Door Frames — Swinging doors of this type, unless lap mounted, are intended to be installed in ULC labelled door frames. See Door and Window Frames (GVTVC).

Door Closers — ULC labelled door closers and door operating devices are intended to be installed in accordance with ANSI/NFPA 80. See Swinging Door Closers (GVEVC).

Sliding Door Hardware — Sliding doors of the corrugated, flush or panelled design for installation in all locations are intended to be provided with ULC labelled surface-mounted fire door hardware. See Fire Door Hardware (GZYXC).

SPECIAL-PURPOSE TYPE

Special-purpose fire door and frame assemblies covered under this category are of the types indicated in the individual certifications and are comprised of doors, frames, accessories and hardware, including locks and latches.

Each completed certified assembly bears a master "Frame and Fire Door Assembly" label with reference to one of the following ratings: 3 h, 2 h, 1-1/2 h, 1 h, 3/4 h or 20 minutes; together with the minimum latch throw and, where applicable, maximum temperature rise.

All other major components of the assembly bear a "Component for Special Purpose Frame and Fire Door Assembly" label positioned so as to render it readily visible to Authorities Having Jurisdiction.

Sizes — The maximum size of opening to be protected is indicated in the individual certifications.

Glass Lights — Some manufacturers can furnish labelled doors with glass lights of maximum sizes as indicated in the individual certifications.

Accessories for Installation

Door Closers — ULC labelled door closers and door operating devices are intended for installation in accordance with ANSI/NFPA 80. See Swinging Door Closers (GVEVC).

Authorities Having Jurisdiction should be consulted before installation.

STEEL, METAL-CLAD AND HOLLOW-METAL (FREIGHT ELEVATOR) TYPES

Steel and metal-clad fire doors of the counterbalanced types covered under this category are of either formed steel or metal-covered wood panels including guides, latching and counterbalancing mechanisms when installed in masonry. For drywall installation this category also includes frames. Refer to the individual certifications for details.

Single, horizontal-swinging doors covered under this category are of the hollow-metal (honeycomb) type, including frame, latch and interlock mechanisms.

Horizontal-swinging doors in pairs covered under this category are of the hollow-metal (honeycomb) type, including frame, latch, flush bolt and double interlock (one per door) mechanisms.

Each certified door bears a "Freight Elevator Fire Door" or "Freight Elevator Fire Door and Frame Assembly" label with reference to a 2 h, 1-1/2 h, 1 h, or 3/4 h rating and, where applicable, temperature rise and minimum latch throw.

Sizes — The maximum size of opening to be protected is indicated in the individual certifications.

Glass Lights — The glass lights, when provided, consist of wired-glass of 6 mm minimum thickness. The exposed glass per light is not intended to exceed 0.065 m^2 with neither dimension exceeding 300 mm. More than one light per door or opening is permitted, provided that the total combined glass area does not exceed 0.065 m^2.

TIN-CLAD TYPE

Tin-clad fire doors covered under this category consist of two- or three-ply wood-core construction, covered with 0.3 mm galvanized steel or terne plate.

Each certified door bears a "Fire Door" label with reference to one of the following ratings: 3 h, 1-1/2 h, 3/4 h or 20 minutes and, when applicable, the temperature rise.

Type of Door	Temperature Rise, °C at: 30 min	60 min	Max Size of Opening, m^2	Max Size of Opening Width, mm	Height, mm
3-ply horizontal-sliding, single or centre-parting	250	250	11.0	3660	3660
3-ply, swinging, single	250	250	—	1830	3660
3-ply, swinging, in pairs	250	250	—	3050	3660
3-ply, vertical-sliding	250	250	7.5	3050	3050
2-ply, horizontal-sliding	250	—	7.5	3050	3050
2-ply, swinging, in pairs	250	—	7.5	3050	3050
2-ply, swinging, single	250	—	—	1830	3050

Astragals — Doors swinging in pairs or centre-parting doors are intended to be provided with astragals unless otherwise specified in the individual certifications to provide the necessary protection in accordance with ANSI/NFPA 80.

Glass Lights — Glass lights for tin-clad doors are intended to be in accordance with the following dimensional limitations applicable to the particular rating classification required. The glass lights, when employed, consist of wired-glass of 6 mm minimum thickness.

(I) 3 h – Glass lights are not permitted.

(II) 1-1/2 h – The exposed glass area shall not exceed 0.065 m^2 per individual door or leaf with no dimension exceeding 300 mm.

(III) 3/4 h and 20 minute – The exposed glass area per light shall not exceed 0.84 m^2 with neither dimension exceeding 1760 mm. More than one light per door or opening is permitted with no restrictions as to the total combined glass area (e.g., may have two glass lights in the same door, each with a maximum exposed glass area of 0.84 m^2).

Accessories for Installation

Hardware — These doors are intended to be provided with ULC labelled surface-mounted fire door hardware. See Fire Door Hardware (GZYXC).

Door Frames — Swinging doors of this type, unless lap mounted, are intended to be installed in ULC labelled door frames. See Door and Window Frames (GVTVC).

Door Closers — Door closers and door operating devices are intended to be installed in accordance with ANSI/NFPA 80.

TWENTY-MINUTE WOOD-CORE TYPE

Wood-core flush fire doors covered under this category consist of various core constructions with hardboard, plywood or plastic veneered faces.

Each certified swinging door bears a "Fire Door" label with reference to a 20-minute rating.

Sizes — The maximum sizes are shown in the individual certifications.

Glass Lights — These doors may be provided with glass lights at the factory. The maximum area of exposed glass is indicated in the individual certifications.

Overhead Panels — Single-swing doors may be provided with overhead panels, as indicated in the individual certifications.

Accessories for Installation

Locks, Latches and Bolts — Single-swing doors and the active door of doors swinging in pairs are intended to be provided with ULC labelled single-point locks or latches certified for use with 20-minute wood-core doors. The inactive leaf of doors swinging in pairs is intended to be provided with ULC labelled automatic or self-latching top and bottom flush bolts with a minimum throw of 19 mm.

Single-swing doors may be provided with ULC labelled rim-type or mortise-type fire exit hardware.

Doors swinging in pairs may be provided with ULC labelled mortise-type and/or surface-mounted, vertical-rod-type fire exit hardware.

For a list of manufacturers of single-point locks or latches, see Single-Point Locks or Latches (GYJTC) and Single-Point Locks or Latches, Electrically Controlled (GYKHC).

Hinges — Swinging doors of this type are intended to be provided with steel mortise hinges only in accordance with ANSI/NFPA 80.

Astragals — Astragals are intended to be provided with doors swinging in pairs and single-swing doors with overhead panels.

Door Frames — Swinging doors of this type are intended to be installed in ULC labelled door frames. See Door and Window Frames (GVTVC).

Door Closers — ULC labelled surface-mounted door closers and door operating devices are intended to be installed in accordance with ANSI/NFPA 80. See Swinging Door Closers (GVEVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door."

FIRE DOOR MATERIALS (GSRZC)

Composite Core (GSSGC)

USE

This category covers materials of various compositions intended for use as cores in the construction of composite fire doors incorporating such materials.

The use of these materials in labelled composite fire doors is governed by the Label Service Procedure issued to the fire door manufacturers.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Composite Core."

ROLLING STEEL DOOR VISCOUS SPEED GOVERNORS (GSVAC)

GENERAL

This category covers rolling steel door viscous speed governors intended for use with rolling steel fire doors not exceeding the maximum sizes and fire protection ratings as indicated in the individual certifications. They are designed to control the closing speed of the door to between 152 and 610 mm/s as required by ANSI/NFPA 80, "Standard for Fire Doors and Other Opening Protectives."

These viscous speed governors have been investigated with respect to the determination that the governors do not adversely affect the fire protection rating of fire doors to which they are applied, and also with respect to their ability to control the speed of descent of rolling steel doors.

Rolling steel door viscous speed governors are intended to be installed in accordance with the installation instructions packaged with each device.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Rolling Steel Door Viscous Speed Governor."

RETROFIT TWENTY MINUTE FIRE DOOR KITS (GSVNC)

GENERAL

This category covers retrofit 20-minute fire door kits intended to be attached to hollow core, semi-solid, or solid wood doors to upgrade the fire protection rating of the door to 20 minutes.

Retrofit fire door kits are designed to be attached to a door in accordance with the manufacturer's installation instructions provided with each kit.

Sizes — The maximum size of openings to be protected is indicated in the individual certifications.

Retrofit fire door kits are intended to be installed on site. After installation of the kit, the entire fire door assembly is intended to comply with the relevant requirements of ANSI/NFPA 80, "Standard for Fire Doors and Other Opening Protectives."

These fire door kits may be installed to satisfy the provisions of the Ontario Fire Code Retrofit Sections 9.5, 9.6 and 9.8, as permitted by Authorities Having Jurisdiction.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies." In establishing these ratings, testing is conducted utilizing ULC certified frames with ULC certified hardware.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Retrofit Twenty Minute Fire Door Kit."

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FOLDING DOOR ASSEMBLIES (GSXZC)

GENERAL

This category covers horizontally-sliding folding door assemblies intended to be used for the division of large rooms, such as in assembly occupancies, to provide additional protection against the rapid spread of fire.

These folding door assemblies are comprised of door panels, frame, header, track, hinges and latches.

The hourly ratings, as indicated in the individual certifications, have been established as a result of a representative assembly being subjected to a fire and hose stream test.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

Folding Door Assemblies (GSXZC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Special Purpose Fire Door and Frame Assembly.''

DOOR CLOSERS AND HOLDERS (GTBTC)

This category covers door closers and holders for fire doors intended for installation in accordance with the ''National Building Code of Canada.''

Fire doors must be in the fully closed position to perform their intended function. The protection of an opening depends not only upon the use of a labelled door of the proper type, but also upon the use of a labelled frame, labelled hardware, labelled door closer, labelled door holders, or combination door closer and holder, and coordinators, if required, as well as the correct installation of such equipment.

Door closers of the self-closing type (without hold-open features) are covered under Swinging Door Closers (GVEVC).

Door closers incorporating hold-open features with fusible link releases are covered under Swinging Door Closers (GVEVC).

Door holders intended for use with automatic protection equipment and self-closing door closers are covered under Door Holders (GTPRC).

Combination swinging door closers and holders intended for use with automatic protection equipment are covered under Combination Swinging Door Closers and Door Holders (GTISC).

Authorities Having Jurisdiction should be consulted as to which types of mounting Listed holding and closing mechanisms are acceptable for in any given location.

Door Holders (GTPRC)

USE

This category covers door holders intended for use with swinging, sliding or rolling fire doors. They are designed to hold doors in the open position under normal usage and release the doors under fire conditions. They are intended for use with a suitable door closer and with automatic operating devices or systems.

Authorities Having Jurisdiction should be consulted as to which door, door holder, door closer and automatic operating device or other combinations of system units are acceptable for any given location. The door holders are intended for use with automatic operating devices or system units and have been investigated from the standpoint of risk of electrical shock and fire protection.

RELATED PRODUCTS

Automatic operating devices or systems consist of releasing devices, thermostats for releasing device service or smoke-automatic fire detectors for use with releasing device equipment, as certified in the ULC List of Equipment and Materials entitled ''Fire Protection Equipment.''

ADDITIONAL INFORMATION

For additional information, see Door Closers and Holders (GTBTC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C228, ''Door Closers and Holders.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Door Holder.''

Swinging Door Closers (GVEVC)

GENERAL

This category covers door-closing mechanisms of the self-closing or automatic type designed for use with swinging fire doors.

Self-closing door closers of either the surface-mounted, concealed, semi-concealed or spring-hinge type return the door to the closed position when opened.

Automatic door closers of either the surface-mounted, concealed, semi-concealed type employ a hold-open arm with a fusible link, which permits the door to close when a fire occurs.

The spring hinges covered under this category do not comply with all the requirements of CAN/ULC-S133, ''Standard Method of Tests for Door Closers Intended for Use with Swinging Doors.'' They have been investigated from the standpoint of fire protection and are intended for use on swinging doors not exceeding 920 mm in width by 2140 mm in height.

The swinging door closer is intended to be installed in accordance with the installation instructions packaged with the device. The use of sex bolts or through bolts to mount the closer to the door is required for wood or plastic-faced composite-type fire doors. The use of sex bolts to mount the closers to the door is required for steel-covered composite type, sheet-metal type, or hollow-metal-type fire doors provided without closer reinforcements. The use of steel machine screws to mount the closer to the door is required for steel-covered composite type, sheet-metal type, or hollow-metal-type fire doors incorporating steel closer reinforcements. The use of wood screws, sheet-metal screws, sex bolts, or through bolts to mount the closer to the door is required for metal-clad (Kalamein) type or wood-core-type fire doors.

Swinging Door Closers (GVEVC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Door Closers and Holders (GTBTC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S133, ''Standard Method of Tests for Door Closers Intended for Use with Swinging Doors.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Swinging Door Closer.''

Combination Swinging Door Closers and Door Holders (GTISC)

GENERAL

This category covers swinging door closers with integral electromagnetic door holders intended for use with swinging fire doors.

These devices may be constructed with integral smoke detectors or heat detectors.

Combination door closers and holders are designed to hold doors in the open position under normal usage and return the doors to the closed-and-latched position under fire conditions. These devices are intended for use in connection with automatic operating devices or systems. Combination closers/holders have been investigated for compliance with the electrical features of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I, '' as well as fire protection features.

ADDITIONAL INFORMATION

For additional information, see Swinging Door Closers (GVEVC), Door Closers and Holders (GTBTC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S133, ''Standard Method of Tests for Door Closers Intended for Use with Swinging Doors,'' and ULC/ORD-C228, ''Door Closers and Holders.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Combination Swinging Door Closer and Door Holder.''

Fire Door Operators with Automatic Closers (GVFOC)

GENERAL

This category covers fire door operators with automatic closers intended for use on a pair of hollow-metal fire doors swinging in the same or opposite direction with certified vertical-rod-type fire exit hardware that incorporates an integral releasing system, and on a single-swing, hollow-metal fire door with certified electric strikes.

These devices consist of an electromechanical-powered operator, an electrically-operated releasing device for automatic closing, and an electrical control system for normal operation. Under fire conditions, power to the operator and releasing device is interrupted by means of a certified smoke or heat detector connected to the electrical control system; with power interrupted, the closing mechanism brings the door to the closed position. Once the paired doors are in the closed position, the de-energized releasing device will, in turn, activate the mechanical mechanism in the vertical-rod device that will allow the top and bottom bolt of the device to engage the strikes and latch the door. For single doors, the de-energized releasing device will, in turn, activate the electric strike and latch the door (fail secure).

Fire door operators have been investigated from the standpoint of fire protection and electrical shock. The fire protection performance was investigated by examining the ability of the device to close and latch the door in a fire situation.

Fire Door Operators with Automatic Closers (GVFOC)−*Continued*

The installation of the fire door operator does not require a modification of the fire door frames and is intended to be in accordance with the manufacturer's installation instructions.

ADDITIONAL INFORMATION

For additional information, see Swinging Door Closers (GVEVC), Door Closers and Holders (GTBTC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S133, "Standard Method of Tests for Door Closers Intended for Use with Swinging Doors."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED, " a control number, and the product name "Fire Door Operator with Automatic Closer."

DOOR AND WINDOW FRAMES (GVTVC)

USE

This category covers fire door and fire window frames intended for use with labelled fire doors and windows to provide the degree of fire protection indicated on the door or frame label, whichever is the lesser, when installed in accordance with the "National Building Code of Canada."

DOOR FRAMES

Fire door frames consist essentially of a head and jamb members, including hardware reinforcements, wall anchors, door stops and provisions for anchoring to the floor. Frames may be shipped from the factory as a single unit or in knocked-down form.

Manufacturers eligible to produce labelled frames built in accordance with the specifications contained in CAN4-S105, "Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104," are identified by the reference to "Standard Frames" in the individual certifications.

CAN4-S105 includes specifications for standard frames as follows:

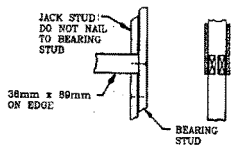
Maximum Size of Frame: Door rebate opening shall not exceed 1220 mm in width by 3050 mm in height for single swinging doors and 2440 mm in width by 3050 mm in height for doors swinging in pairs, for use in 3 h, l-1/2 h, 3/4 h and 20-minute locations.

Frames with Transom Panels — Maximum Size of Frame: Overall rebate opening shall not exceed 2440 mm in width by 3050 mm in height, with a transom panel rebate opening not exceeding 2440 mm in width by 815 mm in height, for use in 3 h, 1-1/2 h, 3/4 h or 20-minute locations.

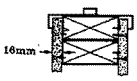
Frames with Transom Lights (incorporating 6 mm thick Georgian wired glass) — **Maximum Size of Frame:** Overall rebate opening shall not exceed 1220 mm in width by 3050 mm in height with a transom light rebate opening not exceeding 1220 mm in width by 1370 mm in height with a maximum area of 0.84 m^2, for use in 3/4 h and 20-minute locations.

Some manufacturers may provide proprietary frames incorporating transom and/or side panels and transom and/or side lights in excess of the size limitation specified in CAN4-S105 and may also provide proprietary frames having unusual design features, such as fixed or removable panels, as indicated in the individual certifications.

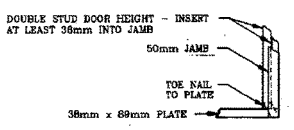
Where fire door frames are installed in wood stud partitions, double studding shall be provided around the opening as shown below:



HEADER DETAIL



WOOD−STUD ANCHOR DETAIL



FLOOR−JAMB DETAIL

Door and Window Frames (GVTVC)−*Continued*

Studs over the frame header shall be located at a maximum of 610 mm on centre.

Framing around openings in non-load-bearing steel stud assemblies shall be designed in accordance with the provisions of CAN4-S105 and the "National Building Code of Canada."

Framing around openings in load-bearing steel stud assemblies, where applicable, are identified in the individual designs under Fire Resistance Ratings (BXUVC).

Freight elevator fire door frames consist of a head and a jamb member, wall anchors and sill with a floor anchor. The maximum sizes of frames are indicated in the individual certifications.

While frames for openings exceeding the maximum size limitations have not been subjected to standard fire tests, in certain cases ULC may be prepared to furnish a label for such oversize frames after a detailed review of drawings. In addition, ULC reserves the option of a factory and field inspection. The oversize labels do not indicate that the frames are capable of furnishing standard fire protection but only that the frames conform to the requirements of design, material and construction as established by the individual certifications.

Authorities Having Jurisdiction should be consulted as to which size of frame will be acceptable in a given location.

WINDOW FRAMES

The basic design of window frames has been established as a result of a representative window frame being subjected to a fire and hose stream test in accordance with CAN4-S106, "Standard Method for Fire Test of Window and Glass Block Assemblies."

The rating of 3/4 h indicates the duration of exposure to fire. The exposed area of individual wired-glass lights are limited to 0.84 m^2 with no dimension exceeding 1370 mm unless otherwise stated.

Fire window frames consist of sashes of various designs and mullions as indicated below for the protection of openings in concrete or masonry wall construction unless otherwise specified in the individual certifications.

The fire window frame prepared at the factory for the glazing material does not normally include the glass itself. The 6 mm thick wired glass is usually provided by other than the fire window frame manufacturer and is installed after the installation of the fire window frame in the building. The wired glass is intended to conform to the requirements for such glass contained in the "National Building Code of Canada."

The protection of an opening depends not only upon the use of a ULC labelled fire window frame of a proper type and wired glass, but also upon other accessories as specified under the respective types and the proper installation.

Authorities Having Jurisdiction should be consulted as to which type and mounting are acceptable for any given location.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies," or CAN4-S105, "Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Door and Window Frame."

MISCELLANEOUS FIRE DOOR ACCESSORIES (GVUXC)

USE AND INSTALLATION

This category covers miscellaneous fire door accessories intended for installation with certified fire doors and/or certified fire door frames as identified in the individual certifications. The accessories have been investigated to determine that, when installed in accordance with the manufacturer's instructions, the accessories do not adversely affect the fire rating of the fire door and/or fire door frame.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Miscellaneous Fire Door Accessory."

IMPACT PROTECTORS FOR FIRE DOORS AND FRAMES (GVUZC)

USE AND INSTALLATION

This category covers impact protectors intended for use with swinging fire doors and fire door frames having a fire-protection rating not exceeding those indicated in the individual certifications.

They are intended to protect fire doors and fire door frames from accidental impact during normal operation of the doors.

Impact protectors are intended to be installed in accordance with the installation instructions packaged with each protector.

Impact protectors have been investigated only with respect to the determination that the protectors do not adversely affect the fire-protection rating of fire doors and fire door frames to which they are applied.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Impact Protector for Fire Doors and Frames."

FIRE DOOR GLASS LIGHT FRAMES (GVVXC)

USE AND INSTALLATION

This category covers glass light frames intended for installation in certified swinging fire doors rated up to and including 1-1/2 h, as provided by the door manufacturers indicated in the individual certifications.

Framing Member Material	Max Width mm (in.)	Max Height mm (in.)	Max Area m^2 ($in.^2$)	Max Door Rating
Wood+	762 (30)	1016 (40)	0.78 (1200)	20 min
Steel	1372 (54)	1372 (54)	0.84 (1296)	3/4 hr
Steel	254 (10)	838 (33)	0.065 (100)	1-1/2 hr

Values in parentheses are explanatory or approximate information

\+ Glass light frames consisting of wood framing members and their mounting fasteners are only intended for use in 20-minute wood-core doors.

The glass light frame is intended to be installed in accordance with the installation instructions packaged with the device. The use of steel sex-bolts or steel sheet-metal screws to install the glass light frame in the door is required depending on the type of door and the design of light frame. The fasteners are furnished as part of the light frame.

The glass light frame may be installed in the certified swinging fire doors by some manufacturers at the door manufacturer's plant or in the field. When the light frame is intended to be installed in the field, the cut-out in the door is made at the door manufacturer's plant, and the door bears a marking indicating the manufacturer and model designation of certified glass light frame to be installed in the door.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door Glass Light Frame."

GASKETING MATERIALS FOR FIRE DOORS (GVWZC)

GENERAL

This category covers gasketing materials intended for installation on certified fire doors and/or certified fire door frames or in their thresholds, as specified in the individual certifications. The gasketing material is intended to be installed in accordance with the installation instructions packaged with the material.

Gasketing Materials for Fire Doors (GVWZC)−*Continued*

The gasketing material consists of a metal frame or a flexible material, either mechanically secured within a metal frame or housing or applied by means of a pressure-sensitive adhesive to the perimeter of the certified fire door and/or certified fire door frame, or installed within their thresholds, as specified in the individual certifications.

The gasketing material may be installed on the certified fire doors at the fire door and/or frame manufacturer's plant or at the job site.

Gasketing materials for fire doors have been investigated only with respect to determination that the materials do not adversely affect the fire rating of fire doors in which they are installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104-M80, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gasketing Material for Fire Doors."

HARDWARE (GWGRC)

This category covers builders' hardware for different types of fire doors and elevator doors intended to be installed in accordance with the "National Building Code of Canada."

The protection of an opening depends not only upon the use of a labelled door of the proper type, but also upon the use of labelled frames and hardware and the correct installation of those components.

Authorities Having Jurisdiction should be consulted as to which type and pattern of hardware will be acceptable in the proposed location.

Builders' Hardware (GWTZC)

This category covers fire exit hardware, self-latching and automatic flush bolts, and single-point locks and latches intended for use with swinging fire doors.

Accessories for Single-point Locks and Latches and Fire Exit Hardware (GWVWC)

USE AND INSTALLATION

This category covers accessories for single-point locks and latches and fire exit hardware consisting of trim parts, as identified in the individual Listings, intended for field retrofitting.

Trim parts are intended for installation on Fire Exit Hardware (GXHXC) or Single-Point Locks or Latches (GYJTC) having a rating up to and including 3 h, as shown in the individual Listings.

These trim parts are intended to be installed as shown in the installation instructions provided with the part.

The installation of these trim parts does not require a modification of the hardware, since they are designed as a bolt-on-type attachment.

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC), Fire Doors (GSNVC) and Fire Resistance Ratings (BXRHC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product or on the smallest unit container in which the product is packaged is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol, the word "LISTED" above the ULC symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT TYPE+]
FOR INSTALLATION ON
[TYPE OF RETROFITTED HARDWARE+]
Control No.

\+ as noted in the individual Listings

In addition, the ULC symbol, the letter "F" and any qualifications as to the parts hourly rating are cast or stamped on the exposed surface of each trim part if the entire Listing Mark is not visible after installation of the product.

Auxiliary Locks (GWXTC)

USE AND INSTALLATION

This category covers auxiliary locks for use on swinging fire doors having a rating up to and including 3 h unless a reduced rating is otherwise indicated in the individual Listings.

Auxiliary locks are intended for installation on Listed Fire Door Frames and/or Classified Swinging Fire Doors in accordance with the installation instructions packaged with the device. The auxiliary locks are intended to be used on fire doors and/or frames in addition to the primary latching device required for use on fire doors and/or frames.

Authorities Having Jurisdiction should be consulted before installing auxiliary locks on fire doors and/or frames.

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Auxiliary Lock" and any qualifications to the product hourly rating.

Hinges (GWZQC)

GENERAL

This category covers door hinges intended for use on swinging-type fire doors of the type specified in the individual certifications.

These hinge designs have been investigated with respect to their fire protection and cycling characteristics and are for use on single-swing doors and doors swinging in pairs of the type and rating indicated in the individual certifications.

They have been investigated for use on fire doors installed in accordance with ANSI/NFPA 80, "Standard for Fire Doors and Other Opening Protectives," and the manufacturer's installation instructions.

In general, hinges are mounted on single doors not exceeding 1200 mm in width by 2440 mm in height, and doors in pairs not exceeding 2440 mm in width by 2440 mm in height (unless otherwise noted in the individual certifications).

Continuous-type hinges are intended to be installed in accordance with the installation instructions packaged with each device (see the individual certifications for acceptable door types).

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Hinge."

Electric Strikes (GXAYC)

GENERAL

This category covers electric strikes intended to replace the fixed strike plate used in fire door frames of the single-swing type, on a centre mullion used with doors in pairs, and in the meeting edge of the inactive door of a pair.

Electric strikes have been investigated from the standpoint of fire protection, for use with fire doors and frames having a rating of up to 3 h. The ratings for specific applications are noted in the individual certifications.

Electric strikes are intended to be installed such that they are released only when current is applied to the unit (fail secure).

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Electric Strike."

Fire Exit Hardware (GXHXC)

GENERAL

This category covers exit hardware devices designed to permit the safe egress of the occupants in the case of emergency, as well as to provide fire protection for door assemblies.

They have been investigated from the standpoint of fire and panic protection.

The individual certifications refer to single-point locks and latches of either the mortise or rim type with 19 mm latch bolts and either surface-mounted or concealed vertical rod devices, mullion assemblies and coordinators for use in fire doors having a rating up to and including 3 h (unless otherwise noted in the individual certifications). In general, fire exit hardware devices are intended for use in hollow-metal, composite (steel, wood or plastic-covered), sheet-metal and metal-clad (Kalamein) type fire doors of the sizes noted in the individual certifications.

Locks and latches are intended for use on single-swinging doors not exceeding 1220 mm in width and 2440 mm in height, and intended for use on the active or inactive door of doors swinging in pairs in openings not exceeding 2440 mm in width and 2440 mm in height (unless otherwise noted in the individual certifications).

Fire exit hardware may be used on 20-minute, wood-core fire doors with the addition of through bolts as noted in the individual certifications.

RELATED PRODUCTS

For certifications for panic hardware application only, see Controlled Exit Type Panic Hardware (FULAC), Egress Door Securing and Releasing Devices (FUPLC), Exit Control Devices (FUQHC) and Panic Hardware (FVSRC).

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN4-S104, "Standard Method for Fire Tests of Door Assemblies," and CAN/ULC-S132, "Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Exit Hardware."

Flush and Surface Bolts, Manual Type (GXSRC)

GENERAL

This category covers manual flush and surface bolt assemblies intended to secure the inactive leaf of swinging fire doors mounted in pairs with the active leaf provided with a labelled single-point latch.

The bolt assemblies have been investigated only from the standpoint of fire protection and are intended for use on fire doors of the type indicated in the individual certifications, having a rating up to and including 3 h (unless otherwise noted in the individual certifications), mounted in pairs not exceeding 2440 mm in either dimension (unless otherwise indicated in the individual certifications).

Manually-operated top and bottom flush or surface bolts on the inactive leaf of a pair of doors are permitted to be used when acceptable to the Authority Having Jurisdiction, provided they do not pose a hazard to safety to life. This provision limits their use to rooms not normally occupied by humans (e.g., transformer vaults, storage rooms).

These assemblies consist of individual top and bottom flush bolt or surface bolt units, manually-actuated strikes, the necessary mounting screws, and installation instructions.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flush and Surface Bolt, Manual Type."

Single-point Locks or Latches (GYJTC)

GENERAL

This category covers single-point locks and latches of either the bored (cylindrical or tubular), mortise, or unit type intended for use on fire doors having a rating up to and including 3 h (unless otherwise noted in the individual certifications).

Single-point Locks or Latches (GYJTC)−*Continued*

They have been investigated with respect to their fire-protection characteristics only.

In general, single-point locks and latches of the bored (cylindrical or tubular), mortise or unit types are for use on hollow-metal, metal-clad (Kalamein), composite (steel, wood and plastic covered), and sheet-metal-type fire doors (unless otherwise noted in the individual certifications), are mounted in single-swing doors not exceeding 1220 mm in width and 2440 mm in height, and the active door of doors mounted in pairs not exceeding 2440 mm in either dimension (unless otherwise noted in the individual certifications).

Single-point locks and latches of the bored (cylindrical or tubular) or mortise types for use on 20-minute, wood-core doors are mounted in single doors not exceeding 1220 mm in width by 2440 mm in height or 920 mm in width by 2750 mm in height (unless otherwise noted in the individual certifications).

Auxiliary-type locks for use on 20-minute, wood-core fire doors are intended to be mounted in conjunction with ULC labelled single-point locks and latches.

In general, single-point locks and latches with 12.7 mm minimum latch throw are intended for single-swing doors, and latches with 19 mm minimum latch throw are intended for the active door of doors mounted in pairs with the inactive door provided with top and bottom flush or surface bolts of either the automatic or self-latching type.

Some door manufacturers can provide doors mounted in pairs with a minimum latch throw of less than 19 mm. The door label specifies the minimum latch throw required for the individual door.

Backsets are restricted to 60 mm minimum and 70 mm maximum unless otherwise indicated in the individual certifications.

Lever handles or paddles are not eligible for use with labelled single-point locks or latches unless provided for in the individual certifications.

RELATED PRODUCTS

Assemblies investigated for both fire protection and panic features are covered under Fire Exit Hardware (GXHXC).

Manual-type flush bolts are covered under Flush and Surface Bolts, Manual Type (GXSRC).

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, ''Standard Method for Fire Tests of Door Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Single-Point Lock or Latch.''

Single-point Locks or Latches, Electrically Controlled (GYKHC)

GENERAL

This category covers electrically controlled single-point locks and latches of either the cylindrical (bored), mortise, or unit type, intended for use on fire doors having a rating up to and including 3 h (unless otherwise noted in the individual certifications).

Locks and latches are intended to be provided as complete units including housings/bodies, latch bolts, strikes and trim.

Electrically controlled single-point locks and latches have also been investigated for electrical features and are intended for use in Class 2 circuits in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

The electrically controlled single-point locks and latches have been provided with solenoids for remote locking or unlocking of the operating knob or handle on one side of the latch case.

In general, electrically controlled single-point locks and latches are intended for use on hollow metal, metal-clad (Kalamein), composite (steel, wood and plastic covered), and sheet-metal-type fire doors (unless otherwise noted in the individual certifications), are mounted in single-swing doors not exceeding 1220 mm in width by 2440 mm in height, and the active door of doors mounted in pairs not exceeding 2440 mm in either dimension (unless otherwise noted in the individual certifications).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, ''Standard Method for Fire Tests of Door Assemblies.''

ULC MARK

Single-point Locks or Latches, Electrically Controlled (GYKHC)−*Continued*

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Single-Point Lock or Latch, Electrically-Controlled.''

Elevator Fire Door Hardware, Passenger (GZKZC)

GENERAL

This category covers passenger elevator fire door hardware intended for use as a component of horizontally-sliding passenger elevator fire door assemblies of single- and multi-speed side-opening and centre-opening types. The hardware package consists of interlocks, header, track, hangers, pendant bolts, sill, sill support plates, sill brackets, retaining angles and closer assemblies, and may be used in lieu of corresponding items covered under Fire Doors (GSNVC) as passenger elevator (hollow metal) type fire door assemblies.

Hanger assemblies may be provided in lieu of hanger components. They consist of a header, hangers, pendant bolts, track and attachments mounted together so that the assembly may be handled as a complete unit.

Some passenger elevator doors may be provided with an integral hanger, in which case the hanger assembly consists of a header and track. For integral hangers, the door label covers the details of hanger and attachments.

Passenger elevator hardware packages covered under this category may be provided with certain components only, such as interlocks. The components covered under this category are identified in the individual certifications.

Elevator fire door hardware packages covered under this category have been investigated for compliance with the requirements for Fire Fighter's Elevators in the ''National Building Code of Canada.''

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, ''Standard Method for Fire Tests of Door Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Elevator Fire Door Hardware, Passenger.''

Fire Door Hardware (GZYXC)

GENERAL

This category covers fire door hardware intended for use with composite (steel-covered), sheet-metal and tin-clad doors. There are two types: hardware intended for use with sliding doors, and hardware intended for use with swinging doors as indicated in the individual certifications.

Sliding hardware is one of three types: horizontally mounted, single- or centre-parting, and vertically sliding.

Swinging hardware is of two types: single-swing or swinging in pairs.

To provide the degree of fire protection for a wall opening as indicated by the fire door label, this hardware is intended to be applied and the resulting door hardware assembly installed in accordance with the ''National Building Code of Canada.''

Wall bolts or closing devices are not included in a set of labelled hardware.

For sliding door hardware, labels as illustrated are applied singly to each hanger, binder, bumper, flush pull and stay roll and two to each section of track for a complete set of labelled single slide hardware; and for doors in pairs labels are applied singly to each track section, centre floor binder, centre track binder, and centre latch assembly.

For swinging door hardware, labels are applied singly to each hinge strap, hinge bracket, connecting bar, and catch for single doors; and for doors in pairs, to above named parts and to each latch, each top and bottom bolt and keeper for standing door, and to each hinge wall strap.

Manufacturers certified as makers of hardware for standard-size fire doors and shutters are prepared to furnish labelled hardware shown by examination and tests to be suitable for mounting these devices in the several situations classified below.

A complete set of standard hardware for standard-size single sliding or swinging doors requires the use of 10 labels, and 20 labels are required for each pair of standard size swinging doors.

SLIDING-TYPE HARDWARE

Fire Door Hardware (GZYXC)−*Continued*

Horizontal-Sliding, Tin-Clad — Hardware for horizontal-sliding tin-clad doors is intended for use with doors not exceeding 11 m2 in area or 3660 mm in either dimension.

Component Parts — Each complete set of certified hardware for horizontal tin-clad doors includes:

1. One track, length equal to twice the width of the opening plus 535 mm, punched for wall bolts.
2. Two hangers for openings 1830 mm and less in width; three hangers for openings wider than 1830 mm; and bolts for attaching hangers to door.
3. Two binders.
4. One stay roll with attachment bolts suitable for the form of sill used.
5. One bracket for each track bolt.
6. Two half-oval chafing strips for back of door; two flat strips for front of door opposite the half-oval strips; bolts for fastening above strips together through door; length of strips to be 100 mm less than width of door. Doors exceeding 2440 mm in height require three chafing strip assemblies.
7. One strip 125 mm less than width of door to take wear of stay roll; and wood screws for attachment.
8. One wedge with screws for attachment.
9. Handles with bolts and screws for attachment.
10. One front bumper and one back bumper.
11. Four bumper shoes and screws for attachment; each bumper shoe may be made in two pieces.
12. Washers for wall bolts.
13. Instructions for installation.

Exceptions — Wall bolts are not included, as requirements for length vary. Automatic attachments are not included in a set of labelled hardware.

Horizontal-Sliding, Sheet-Metal and Composite (Steel-Covered) — Hardware for horizontal-sliding sheet-metal and composite (steel-covered fire doors) is essentially the same as for tin-clad doors, with minor differences to conform to design of various manufacturers.

Vertical-Sliding — Hardware for vertical-sliding tin-clad and sheet-metal doors is intended for use with doors not exceeding 7.5 m^2 in area or 3050 mm in either dimension.

Component Parts — Each complete set of certified hardware for vertical-sliding tin-clad and sheet-metal doors includes:

1. Two 90 by 9.5 mm tracks, length equal to twice the height of the opening plus 230 mm, punched for wall bolts.
2. One cast-iron bracket for each track bolt.
3. Two malleable-iron track guides for each track for openings 1525 mm or less in height and an additional guide for each track for each 760 mm or fraction thereof in excess of 1525 mm.
4. One bumper bolted to top of each track with wall bolt.
5. Four bumper shoes and screws for attachment.
6. Two wrought-iron or steel cables, not less than 8 mm in diameter.
7. Two cable brackets.
8. Four cable fasteners and thimbles.
9. Two cable pulleys, with malleable-iron frames and sheaves.
10. Counterweights.
11. Two 19 by 6 mm half-oval chafing strips for back of door; length 50 mm less than height of door; strips held by M6 bolts or machine screws with countersunk heads, passing through door and bearing against washers.
12. Handles with bolts and screws for attachment.
13. Necessary washers, rivets, bolts and screws to properly fasten the hardware to the door and wall.
14. Instructions for installation.

Exceptions — Wall bolts are not included, as requirements for length vary. Automatic attachments are not included in a set of labelled hardware.

Caution — In view of the greater accident hazard of vertical-sliding doors, horizontal-sliding doors are considered preferable where structural details permit their use.

SWINGING-TYPE HARDWARE

Swinging-type hardware is designed for single-swing sheet-metal and three-ply tin-clad doors not exceeding 1830 mm in width and 3660 mm in height, and doors swinging in pairs not exceeding 3050 mm in width and 3660 mm in height, and two-ply tin-clad doors swinging single not exceeding 1830 mm in width and 3050 mm in height and doors swinging in pairs not exceeding 3050 mm in width and 3050 mm in height.

Each complete set of labelled hardware for swinging tin-clad doors contains:

For doors mounted singly — Wall strips (except for openings supplied with standard steel frames), hinge brackets, strap hinges, catches, latches, latch keepers, connecting bar, operating handle mechanism, latch spring, and necessary washers, rivets, and bolts to mount hardware on door and wall.

Fire Door Hardware (GZYXC)−*Continued*

For doors mounted in pairs — Above members, top and bottom bolts, and top and bottom bolt keepers for standing doors.

All parts are made of iron or steel. The number and spacing of hinges and latches depend on door sizes.

Hardware for swinging sheet-metal doors is essentially the same as for tin-clad doors, with minor differences to conform to constructions of various manufacturers.

ADDITIONAL INFORMATION

For additional information, see Hardware (GWGRC) and Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door Hardware."

FIRE DOOR VIEWERS (HAAUC)

GENERAL

This category coves fire door viewers intended for use with doors having fire protection ratings not exceeding those indicated in the individual certifications.

They have been investigated with respect to their fire protection characteristics only.

They require a hole to be drilled through the fire door of a diameter to provide a tight fit (see the installation instructions accompanying the fire door viewer).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors (GSNVC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door Viewer."

FIRE MAIN EQUIPMENT (HAMVC)

HYDRANTS (HBORC)

USE

This category covers hydrants intended for general water works service, and for private fire protection. These hydrants are of the base/valve design and for service pressure not exceeding 1030 kPa.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S520, "Fire Hydrants."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Hydrant."

INDICATOR POSTS, GATE VALVE (HCBZC)

USE

This category covers indicator posts designed for use with underground gate valves controlling water supplies to automatic sprinkler equipment, standpipes, etc., where connections enter buildings. Indicator posts provide aboveground means for operating valves and indicate the position of the valves, whether open or shut, or in some intermediate position.

Unless otherwise noted in the individual certifications, these indicator posts are of the telescopic barrel type intended for use with gate valves, nominal pipe sizes 4 to 14. Indicator posts intended for use with valves larger than NPS 14 and those for use with valves in pits are as indicated in the individual certifications.

REQUIREMENTS

Indicator Posts, Gate Valve (HCBZC)−*Continued*

The basic standard used to investigate products in this category is ULC/ORD-C789, "Indicator Posts for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Indicator Post, Gate Valve."

METERS FOR PRIVATE FIRE SERVICE (HCPXC)

This category covers meters intended for use in private fire service. They are manufactured in three styles:

Detector-check-valve-type meters are those which detect small rates of flow only.

Regular-type meters are those which measure the entire flow through the line in which they are installed.

Meters for fire pumps are those for measuring the capacities of fire pumps during routine testing.

Flow Meters for Fire Pump Service (HDKUC)

GENERAL

This category covers meters intended for fixed installation in steel pipe for monitoring water flow rates in stationary fire pumps or mobile fire fighting apparatus where the working pressure does not exceed 1720 kPa, unless otherwise indicated in the individual certifications.

The flow sensors may be of various types (paddle wheel, differential, turbine, spring probe) as indicated in the individual certifications, and are intended to provide an accuracy of 3% over the working range of the flow meter.

These meters are not intended for calibration use.

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flow Meter for Fire Pump Service."

Meters, Regular Type (HDRTC)

GENERAL

This category covers main line meters of the proportional type, meters of the displacement type in a bypass, and turbine-type meters. The weighted valve mechanism of the main line meter diverts small flows to the bypass meter.

The accuracy is within the limits specified by recognized standards for cold water meters or as indicated in the individual certifications. These meters are intended for private fire service connections to public water supplies, at working pressures not exceeding 1210 kPa unless otherwise indicated in individual certifications.

REQUIREMENTS

The basic standard used to investigate products in this category is UL Subject 327, "Outline of Investigation for Turbine Type Flow Meters."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Meter, Regular Type."

PIPE (HEFRC)

This category covers metallic (cast-iron, ductile-iron and copper) and nonmetallic (asbestos-cement and polyvinyl) pipe and associated mechanical-type joint fittings intended for use in public and private waterworks and fire service systems. Pipe is intended to be installed in accordance with standard practice or in compliance with the manufacturer's instructions covering the installation of pipe of this kind. The laying conditions for cast-iron and ductile-iron pipe are intended to be in accordance with the applicable CSA, ANSI or AWWA specifications noted in the individual Listings.

Information concerning type, size, thickness class, pressure rating, length, and other detailed information is noted in the individual Listings.

Pipe (HEFRC)−*Continued*

Authorities Having Jurisdiction should be consulted before installation.

Nonmetallic Pipe (HFNWC)

GENERAL

This category covers PVC and glass-fibre filament-wound epoxy/PVC pressure pipe classified as nonmetallic. It is intended for use in public and private underground waterworks and fire service systems and connections to such systems where the working pressure does not exceed that indicated in the individual certifications, and when installed in accordance with the manufacturer's installation instructions.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Pipe (HEFRC).

REQUIREMENTS

The basic standard used to investigate the design and construction specifications of this pipe is ULC/ORD-C1713-2003, "Pressure Pipe and Couplings, Glass Fiber-Reinforced, for Underground Fire Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic Pipe."

Nonmetallic Pipe, PVC (HGBUC)

GENERAL

This category covers polyvinyl chloride (PVC) pressure pipe intended for use in underground fire service systems where the working pressure does not exceed that indicated in the individual certifications. This category includes PVC distribution pressure pipe in sizes ranging from 4-12 NPS and PVC transmission pressure pipe in sizes ranging from 14-36, as indicated in the individual certifications. This pipe is intended to be installed in accordance with the manufacturer's installation instructions.

ADDITIONAL INFORMATION

For additional information, see Pipe (HEFRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1285-2003, "Pipe and Couplings, Polyvinyl Chloride (PVC) for Underground Fire Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic Pipe PVC."

Pipe, Reinforced Concrete, Steel Cylinder Type (HGITC)

GENERAL

This category covers reinforced concrete, steel-cylinder-type pipe, consisting of a steel plate cylinder with steel bell and spigot rings welded to its ends, spirally wound with steel rod reinforcement prestressed to provide slight initial compression in the cylinder and concrete lining. The pipe has an external coating of cement mortar.

Reinforced concrete pipe is intended for use in fire service systems when installed in accordance with the manufacturer's installation instructions.

ADDITIONAL INFORMATION

For additional information, see Pipe (HEFRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/AWWA C303, "Concrete Pressure Pipe, Bar-Wrapped, Steel-Cylinder Type."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Reinforced Concrete, Steel Cylinder Type."

PIPE FITTINGS (HHJZC)

This category covers pipe fittings intended for use in public and private waterworks and fire service systems, and connections to such systems where the working pressures do not exceed those for which the fittings are rated.

Pipe Fittings (HHJZC)−*Continued*

Fittings, Cast-iron (HHXXC)

USE

This category covers cast-iron fittings intended for use in public or private waterworks, and fire service systems, where the working pressures do not exceed those for which the fittings are rated.

REQUIREMENTS

The basic standards used to investigate products in this category are ANSI/ASME B16.1, ''Gray Iron Pipe Flanges and Flanged Fittings (Classes 25, 125, and 250),'' and ANSI/ASME B16.4, ''Gray Iron Threaded Fittings – Classes 125 and 250.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fitting, Cast-Iron.''

Fittings, Malleable- and Ductile-iron (HJKAC)

USE

This category covers malleable- and ductile-iron fittings intended for use in public or private waterworks, and fire service systems where the working pressures do not exceed those for which the fittings are rated.

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/AWWA C110/A21.10, ''Ductile-Iron and Gray-Iron Fittings,'' and ANSI/ASME B16.3, ''Malleable Iron Threaded Fittings – Classes 150 and 300.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fitting, Malleable- and Ductile-Iron.''

Fittings, Retainer Type (HJKFC)

USE

This category covers fittings consisting of mechanical joint retainer devices and flange adapters for use with metallic and/or nonmetallic pipe, as indicated in the individual certifications. They are intended for use in underground fire service systems, in public or private waterworks, and are intended to be installed in accordance with the manufacturer's installation instructions.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C194, ''Guide for the Investigation of Gasketed Joints for Cast-Iron Pressure Pipe and Fittings.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fitting, Retainer Type.''

Fittings, Miscellaneous (HKOXC)

USE AND INSTALLATION

This category covers miscellaneous fittings intended for use in public or private waterworks, and fire service systems utilizing the type of pipe indicated in the individual certifications, where the working pressures do not exceed those for which the fittings are rated. They are intended to be installed in accordance with the manufacturer's installation instructions.

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/ASME B16.3, ''Malleable Iron Threaded Fittings – Classes 150 and 300,'' ULC/ORD-C1474 (2003), ''Adjustable Drop Nipples for Sprinkler Systems,'' and/or ULC/ORD-C213, ''Rubber Gasketed Fittings for Fire Protection Service.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fitting, Miscellaneous.''

Underground Accessory Fittings (HKQAC)

USE AND INSTALLATION

Underground Accessory Fittings (HKQAC)−*Continued*

This category covers saddle fittings and other accessory fittings intended for use in underground public or private waterworks, and fire service systems utilizing the type of pipe indicated in the individual certifications, where the working pressures do not exceed those for which the fittings are rated. They are intended to be installed in accordance with the manufacturer's installation instructions. These products have not been investigated for use in potable water systems.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C194-1975, ''Guide for the Investigation of Gasketed Joints for Cast-Iron Pipe and Fittings.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Saddle Fitting'' or ''Underground Accessory Fitting.''

Fittings, Union, Malleable-iron (VIZIC)

USE

This category covers union fittings intended for use in piping conveying water where the working pressure does not exceed that indicated in the individual certifications.

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/ASME B16.3, ''Malleable Iron Threaded Fittings – Classes 150 and 300.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fitting, Union, Malleable-Iron.''

Fittings, Rubber-gasketed (VIZMC)

GENERAL

This category covers iron couplings consisting of housings, rubber gasket, and steel track bolts. This category also covers iron, ductile-iron and steel-elbow fittings and tees designed for use with the rubber-gasketed fittings.

The joints formed with these fittings need not be restrained, unless otherwise indicated in the individual certifications.

These fittings are intended for use either aboveground or underground in fire protection systems (automatic sprinkler, open sprinkler, and standpipe) and connections to such systems when installed in accordance with ANSI/NFPA 13, ''Installation of Sprinkler Systems,'' ANSI/NFPA 14, ''Installation of Standpipe and Hose Systems,'' and ANSI/NFPA 15, ''Water Spray Fixed Systems for Fire Protection.'' Other uses may be permitted as described in the individual certifications. For couplings of steel pipe with grooved ends, all bolts are intended to be tightened to torque values specified by the manufacturer's installation instructions.

These products have not been investigated for use in potable water systems.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C213, ''Rubber Gasketed Fittings for Fire Protection Service.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fitting, Rubber-Gasketed.''

STRAINERS, PIPELINE (HLCVC)

USE

This category covers pipeline strainers intended for use in water-supply connections to fire main equipment, such as automatic sprinkler systems and fixed water-spray systems, where protection against clogging of water-discharge openings is needed.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C321-2003, ''Pipeline Strainers.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of

Strainers, Pipeline (HLCVC)−*Continued*

this Directory) together with the word "LISTED," a control number, and the product name "Strainer, Pipe Line."

VALVES (HLQTC)

Valves, Backflow Preventer (BAEUC)

GENERAL

This category covers backflow preventer valves intended for use in fire protection service in cross-connections between water supplies. These valves have been investigated for strength of body, friction loss and check valve seat leakage only. They have not been investigated for all aspects of their performance in general waterworks service, as may be required by Authorities Having Jurisdiction.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C312, "Check Valves for Fire Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Valve, Backflow Preventer."

Ball Valves, System Control (HLUGC)

GENERAL

This category covers shut-off ball valves intended for general use in air- and water-supply piping of fire protection equipment, dry-pipe and alarm valve "trim," and other applications where either gate or globe valves are ordinarily used. These valves are intended for a maximum working pressure of 1210 kPa unless otherwise noted in the individual certifications.

Shut-off ball valves may be provided with an assembly of supervisory switches having electrical signalling contacts for the purpose of indicating an abnormal condition and the restoration to normal of such valves. Valve position signal attachments are operated by a mechanical linkage to moveable parts of the valve. The signalling contacts are intended for connection to actuating circuits of a separate electrically-operated transmitter, or to the signalling line circuit of a separate electrical control unit by which their action is indicated. These switches are intended for use in ordinary locations.

Separately installed supervisory switch assemblies are intended for mounting directly to the valve-actuating mechanism.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1091, "Butterfly Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Ball Valve, System Control."

Butterfly Valves (HLXSC)

GENERAL

This category covers butterfly valves intended for use in water-supply piping of fire protection equipment, and intended for a maximum working pressure of 1210 kPa unless otherwise noted in the individual certifications.

They are equipped with a gear, or travelling nut, or pneumatic actuator to reduce the possibility of water hammer. When a butterfly valve is in the open position, the disc may extend beyond the end of the valve body. During installation, care should be taken that the disc does not interfere with the operation of system components installed immediately adjacent to the butterfly valve.

Butterfly valves may be provided with an assembly of supervisory switches having electrical signalling contacts for the purpose of indicating an abnormal condition and the restoration to normal of such valves. Valve position signal attachments are operated by a mechanical linkage to moveable parts of the valve. The signalling contacts are intended for connection to actuating circuits of a separate electrically-operated transmitter, or to the signalling line circuit of a separate electrical control unit by which their action is indicated. These switches are intended for use in ordinary locations.

Separately installed supervisory switch assemblies are intended for mounting directly to the valve-actuating mechanism.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C1091, "Butterfly Valves for Fire-Protection Service," and UL

Butterfly Valves (HLXSC)−*Continued*

1091, "Butterfly Valves for Fire-Protection Service." The following is a list of the requirements from UL 1091 that supersede or are added to the applicable requirements in ULC/ORD-C 1091: UL 1091 section or paragraph reference, 1.2, 7.1, 8, 9, 10.1, 11, 12, 13, 15, 16.1, 16.2, 17, 18.1, 18.2, 19, 20, 21, 22, 24, 25, 26.1, 26.2.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Butterfly Valve."

Valves, Check, Swing (HMERC)

GENERAL

This category covers check valves intended for use in fire service systems for working pressures not exceeding 1210 kPa for sizes 2 to 12 NPS incl., and 1030 kPa for sizes larger than 12 NPS. Some valves are rated for pressures greater than 1210 kPa as indicated in individual certifications.

Check valves consist of the swing type and split clapper type.

Check valves are regular type, iron-bodied, bronze-fitted and may have metal-to-metal or rubber-faced checks as noted in the individual certifications. They may be provided with threaded, flanged, hub ends or wafer style, appropriate to the size of valve and the intended use, and installed in either horizontal or vertical positions.

Detector-type check valves are iron or brass bodied with a weighted clapper and provisions for connection of a bypass meter around the check.

In the open position, the disc of a wafer or lug-style check valve may extend beyond the end of the valve body. During installation, it should be determined that the check valve disc does not interfere with the operation of system components installed immediately adjacent to the check valve.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C312, "Check Valves for Fire-Protection Service," and ANSI/UL 312, "Check Valves for Fire-Protection Service." The following is a list of the requirements from ANSI/UL 312 that supersede or are added to the applicable requirements in ULC/ORD-C312: ANSI/UL 312 section or paragraph reference, 7.2, 12.3, 15.1, 17.3, 23, 24.4.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Valve, Check Swing."

Valves, Gate (HMRZC)

GENERAL

This category covers shut-off valves intended for use in dry-pipe and alarm valve "trim," and air and water piping of fire protection equipment. They are intended for working pressures not exceeding 1210 kPa for valves NPS 12 and smaller, and not exceeding 1030 kPa for larger valves.

Unless otherwise noted, valves are iron-bodied, bronze-fitted and provided with threaded, flanged, or hub ends appropriate to the size of valve and the intended use.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C262, "Gate Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Valve, Gate."

Residential Sprinkler Domestic Water Shut-off Valves (VKVIC)

GENERAL

This category covers valves intended to automatically shut off essentially all flow to a domestic water system and divert the available water supply to the sprinkler system, should there be a fire sprinkler operation while there is domestic water usage.

These valves are intended for use in residential sprinkler systems as described in ANSI/NFPA 13D, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Mobile Homes," and ANSI/NFPA 13R, "Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height."

REQUIREMENTS

Residential Sprinkler Domestic Water Shut-off Valves (VKVIC)−*Continued*

The basic standard used to investigate products in this category is ULC/ORD-C260, "Guide for the Investigation of Dry Pipe, Deluge, and Pre-Action Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Residential Domestic Water Shut-Off Valve."

POLYMERIC MATERIALS FOR USE IN PIPE AND FITTINGS IN SPRINKLER SYSTEMS PIPING (QORRC)

The materials covered under this category are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate use in the field. THE FINAL ACCEPTANCE OF THE COMPONENT IS DEPENDENT UPON ITS USE IN EQUIPMENT SUBMITTED TO UNDERWRITERS LABORATORIES OF CANADA.

GENERAL

This category covers materials investigated in accordance with established procedures to define their properties in order to facilitate evaluation of their use in end-product applications.

These materials have been investigated in accordance with the applicable test methods (as referenced in ANSI/ASTM D1598, "Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure," and ANSI/ASTM D1599, "Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings,") of ULC/ORD-C199P (2002), "Combustible Piping for Sprinkler Systems," for sustained internal pressure where the standard dimension ratio (SDR = ratio of average outside diameter to minimum wall thickness) and maximum ambient temperature do not exceed the values given in the individual certifications, and the internal pressure does not exceed 1.21 MPa (175 psig). The minimum hoop stress of the material at 50 years, as calculated in accordance with ANSI/ASTM D2837, "Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products," for the maximum SDR and pipe size range, is indicated in the individual certifications. Components, such as piping and fittings, formed from these materials are limited to a nominal size range and minimum wall thickness as noted in the individual certifications.

Flammability — Materials may be classified based on burning tests conducted in accordance with CAN/CSA-C22.2 No. 0.17 (2000), "Evaluation of Properties of Polymeric Materials." By small-scale test, materials are classified 94HB, 94V-0, 94V-1, 94V-2 and/or 94-V5. CAN/CSA-C22.2 No. 0.17 (2000) small-scale test data does not pertain to building materials, furnishings and related contents. CAN/CSA-C22.2 No. 0.17 (2000) small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULC.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Polymeric Material for Use in Pipe and Fittings in Sprinkler Systems Piping."

HEATING ACCESSORIES (HJNNC)

This category covers accessories intended for use in the assembly or installation of air-conditioning or heating equipment and similar applications.

STRAINERS, OIL BURNERS (METZC)

USE

This category covers oil burner strainers intended for use in the assembly or installation of oil-burning equipment.

They are intended for use by the oil burner manufacturer in the assembly of oil-burning equipment where the suitability of the application has been determined by Underwriters Laboratories of Canada. Although these devices are designed as "strainers," they may either be strainers or filters according to the common terminology of the industry.

Fuel Oil Specifications — Fuel oil specifications indicated by number in the individual certifications refer to CAN/CGSB 3.2, "Heating Fuel Oil," and ASTM D396-69, "Standard Specification for Fuel Oils."

Strainers, Oil Burners (METZC)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C331, "Strainers for Flammable Fluids and Anhydrous Ammonia."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Oil Burner Strainer."

VALVES (MFVVC)

GENERAL

This category covers valves designed specifically for use in conjunction with heating and cooling appliances.

The type of fluid for which a valve has been investigated is indicated in the individual certifications by the following symbols:

A – Air or nontoxic, nonflammable gases
Ac – Acetylene
F – Common refrigerants except ammonia
FA – Common refrigerants including ammonia
G – City gas supplied by public utilities
LP – Liquefied petroleum gases
02 – Nos. 1 and 2 fuel oils, oils having viscosities of not more than 40 mPa.s, SU at 38°C
04 – No. 4 fuel oils, oils having viscosities of 40 to 125 mPa.s, SU at 38°C
05 – No. 5 fuel oils, oils having viscosities of 125 mPa.s, SU at 38°C, to 40 mPa.s, SF at 50°C
06 – No. 6 fuel oil, oils having viscosities of 90 to 300 mPa.s, SF at 50°C
Ox – Oxygen
S – Steam
W – Water or other aqueous nonflammable liquids

Constant-level valves are intended for use with fuel oil handling or burning equipment to provide for the uniform delivery of oil. They may include manually operated metering valves to regulate the flow of oil.

Valves that include automatic shut-off devices are suitable for assembly by manufacturers as part of oil-burning appliances to prevent the hazardous discharge of oil at the burner when the acceptability of the combination has been determined by Underwriters Laboratories of Canada.

The valves are suitable for installation in the oil supply line at the supply tank connected to burners requiring gravity oil feed. The vent opening of those valves which do not include an automatic shut-off device are intended to be connected by piping or tubing to the outside of the building and terminate at a level above the fill opening of the tank. The vent piping or tubing is not intended to be connected to tanks or tank vents.

These valves are suitable for use with oil fuels not heavier than No. 2 under pressure not more than 20 kPa (approximately 2.35 m head of oil).

Electrically-operated valves of the general-purpose type are intended to control the flow of a fluid, but are not intended to be depended upon to act as a safety valve. It may be a normally closed or normally open valve. (Such valves were previously designated "regulating valves.")

Unless otherwise indicated in the individual certifications, these valves are intended for stationary installations in an ambient temperature normally prevailing in habitable spaces, and for handling fluids at a temperature not exceeding 25°C in locations which are not hazardous locations as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

The investigation of these valves includes electrical input and dielectric strength tests, when appropriate, and operation and temperature tests. Parts subjected to pressure are tested for external leakage at 1.5 times maximum rated pressure and for strength at not less than 5 times maximum rated pressure.

General-purpose valves are also subjected to an endurance test of 6,000 cycles of operation (up to 100,000 cycles if they are for handling hazardous fluids) and are then tested for external leakage but not for leakage past the seat.

Manually-operated valves are intended specifically for use with gas- or oil-burning equipment.

Metering valves are primarily for use in the burner fuel supply line to manually regulate the flow of fuel to the burner.

Shut-off valves are for use in the burner supply line to manually shut off the flow of fuel to the burner.

Three-way valves are for use in burner installations with two interconnected sources of fuel supply to allow fuel to be admitted to the burner from only one source at a time.

Special-purpose valves are intended for use as indicated in the individual certifications.

REQUIREMENTS

Valves (MFVVC)−*Continued*

The basic standards used to investigate products in this category are ULC/ORD-C842, "Valves for Flammable and Combustible Liquids," and CAN/CGA-3.16, "Lever Operated Non-Lubricated Gas Shut-Off Valves."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Valve."

PIPE JOINTING MATERIALS (QLSPC)

This category covers products in the form of compounds or tapes, intended for use as aids in joining and sealing threaded pipe connections or other threaded metal parts in devices handling gasoline or petroleum oils. Where indicated in the individual Listings, these products are also suitable for use in devices handling natural gas or methane (maximum pressure as indicated in the individual Listings), propane and butane.

Pipe Joint Tapes (KTCLC)

GENERAL

This category covers polytetrafluoroethylene plastic in the form of tape. These materials are intended for application in accordance with the manufacturer's instructions. The maximum pipe size for which the materials are suitable are indicated in the individual certifications. These materials have not been tested under fire conditions.

Authorities Having Jurisdiction should be consulted before use.

ADDITIONAL INFORMATION

For additional information, see Pipe Jointing Materials (QLSPC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S642, "Compounds and Tapes for Threaded Pipe Joints."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pipe Joint Tape."

Pipe Joint Compounds (QLSRC)

GENERAL

This category covers nonhardening compounds in the form of pastes and liquids and generally consisting of metallic powders or organic or inorganic fillers, special oils, plasticizers and solvents. They are intended for use as aids in joining and sealing threaded pipe connections or other threaded metal parts in accordance with the manufacturer's instructions. These products have not been investigated for their capability of maintaining a seal in a threaded joint under fire exposure conditions but have been classified as to their fire hazard.*

These products are intended for application at or above 15°C unless specified otherwise in the individual certifications.

* In the case of products that are liquids at ordinary temperatures and atmospheric pressure, the hazards have been rated in accordance with Underwriters Laboratories of Canada's Standard of Classification, in which:

Ether rates 100
Gasoline rates 90-100
Alcohol (ethyl) rates 60-70
Kerosene (100°F flash) rates 30-40
Paraffin oil rates 10-20

For further information, refer to UL 340, "Tests for Comparative Flammability of Liquids."

Authorities Having Jurisdiction should be consulted before use.

ADDITIONAL INFORMATION

For additional information, see Pipe Jointing Materials (QLSPC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S642, "Compounds and Tapes for Threaded Pipe Joints."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pipe Joint Compound."

FIRE RESISTANT DUCTS (HNKNC)

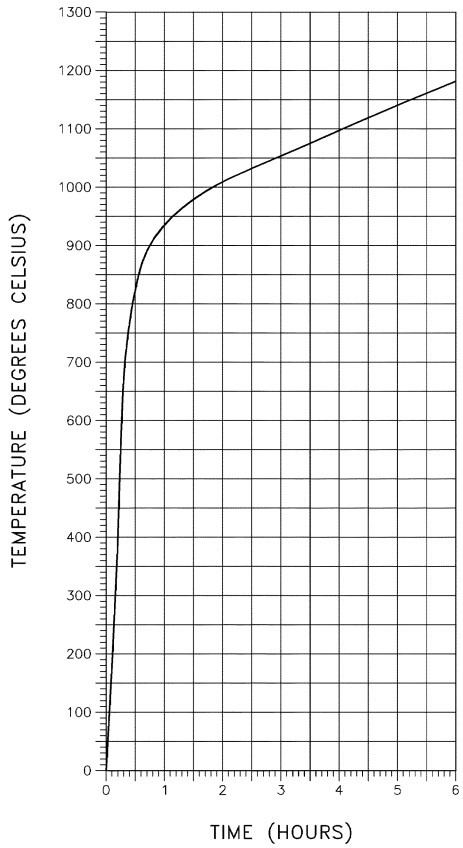
GENERAL

This category covers fire-resistant ducts, ducts intended for the movement of air in ventilation, heating, air conditioning, and other such systems.

The fire-resistance ratings for the illustrated ducts have been established on the basis of the performance of test samples representative of the design of such ducts when subjected to a fire-endurance test conducted in accordance with ISO 6944 (1985), "Fire Resistance Tests – Ventilation Ducts." ISO 6944 (1985) contains requirements for two types of ventilation duct assemblies, identified as Duct A and Duct B. The requirements for Duct A are intended for ventilation duct assemblies that pass through the fire environment without openings. The requirements for Duct B are intended for ventilation duct assemblies where the duct contains openings within the fire environment. Unless indicated otherwise in the design descriptions, all the ventilation duct assemblies covered under this category are tested to the requirements of Duct A only.

The fire exposure conditions employed in ISO 6944 (1985) are defined by the temperature-versus-time relationship depicted by the curve in Figure 1, which is also identical to the exposure defined in ISO 834-1, "Fire-Resistance Tests – Elements of Building Construction – Part 1: General Requirements."

Figure 1



The fire-resistance rating is expressed as one number based on the performance criteria found in ISO 6944 (1985). The assigned fire-resistance rating is the lowest of the performance criteria, Stability, Insulation and Integrity. These are described as follows:

Stability — The time, expressed in hours, when stability failure occurs. Stability failure is deemed to have occurred when the duct portion inside or outside the fire-resistance furnace collapses in such a manner that the duct no longer fulfills its intended function.

Insulation — The time, expressed in hours, when the temperature rise above initial ambient temperature on the unexposed surface of the duct system, outside the furnace, exceeds either:

a) 140°C as an average value; or
b) 180°C as a maximum value read by any surface thermocouple.

Integrity — The time, expressed in hours, when cracks, holes or other openings occur in the duct system, outside the furnace, through which flames or hot gases can pass.

Unless indicated otherwise in the design descriptions, the ratings apply to both horizontal and vertical runs of duct.

The conditions of acceptance described in ISO 6944 (1985) are developed on the premise that the duct itself and its method of treatment, when it

passes through a fire separation with a fire-resistance rating, provides the indicated fire-resistance rating and, as such, that the fire dampers are not required.

Unless indicated otherwise in the design descriptions, rigid restraint of the duct has not been simulated in the fire test and the ratings do not apply to ducts that are fully restrained against thermal expansion in field applications.

In addition to the requirements of ISO 6944 (1985), assemblies incorporating grease ducts are investigated to the requirements of "ULC Grease Duct Insulation Test Protocol," and covered under Grease Duct Insulation (YYETC). These grease duct assemblies incorporate grease duct insulation materials intended for insulating metal grease ducts in commercial institutional kitchen systems to protect adjacent combustibles from ignition in the event of an internal grease duct fire. They have been investigated for the ability to permit the reduction of clearances to combustible construction and are intended to be installed in accordance with the manufacturer's recommended installation instructions and the applicable section of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations."

All other limitations of the duct are stated in the design descriptions (e.g., maximum cross-sectional area, maximum support spacing, type of duct use).

Numbered items refer to the descriptive text below each drawing. Individual components of a proprietary nature, or over which it is necessary to exercise control at the manufacturing location, are Listed under the Label Service Program of Underwriters Laboratories of Canada. Such items are identified in the text by a black dot thus •. Under these Services, periodic examinations and tests are conducted on samples selected at random from current production and stock. Each Listed product bears the label of Underwriters Laboratories of Canada from which it may be determined that a product is suitable for use as a material in a particular duct or ducts. Materials intended for use with these ducts are covered under Duct Insulation (HNNZC), Coated Ducts (HNNXC) and Fire Resistant Duct Panels (HNOAC) following the series of illustrated ducts.

Authorities Having Jurisdiction should be consulted before installation.

COATED DUCTS (HNNXC)

USE

This category covers duct sections, which are factory-coated with materials intended to provide fire-resistive properties. Coated ducts are designated for use in specific fire-resistant duct assemblies covered under Fire Resistance Ducts (HNKNC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ducts (HNKNC).

REQUIREMENTS

The basic standard used to investigate products in this category is ISO 6944 (1985), "Fire Resistance Tests – Ventilation Ducts."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Coated Duct."

DUCT INSULATION (HNNZC)

USE

This category covers duct insulation designated for use in specific fire-resistant duct assemblies covered under Fire Resistance Ducts (HNKNC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ducts (HNKNC).

REQUIREMENTS

The basic standard used to investigate products in this category is ISO 6944 (1985), "Fire Resistance Tests – Ventilation Ducts."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Duct Insulation."

FIRE RESISTANT DUCT PANELS (HNOAC)

USE

This category covers duct panels designated for use in specific fire-resistant duct assemblies covered under Fire Resistance Ducts (HNKNC).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ducts (HNKNC).

REQUIREMENTS

The basic standard used to investigate products in this category is ISO 6944 (1985), "Fire Resistance Tests – Ventilation Ducts."

ULC MARK

Fire Resistant Duct Panels (HNOAC)–*Continued*

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Resistant Duct Panel."

FITTINGS (HSNXC)

This category covers adapters, connectors, pigtails, expansion coils, etc., commonly used in the assembly of appliances, equipment or piping for the handling of flammable gases or liquids. The fluids intended for use with these products are identified in the individual Listings.

ADAPTERS AND MISCELLANEOUS FITTINGS (HTBVC)

Flammable-liquid, Underground Hose Type Connectors (QLWVC)

USE AND INSTALLATION

This category covers flexible rubber hose type pipe connectors rated at a minimum of 345 kPa designed for use in joining lengths of rigid underground piping in connection with underground storage and transfer of flammable liquids. They are intended to serve as flexible junctions to compensate for expansion, contraction and heaving of underground piping, to minimize stresses in piping caused by settling of storage tanks, and to absorb vibration that may be set up in the piping system during the operation of pumps.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S633, "Flexible Underground Hose Connectors for Flammable and Combustible Liquids."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flammable Liquid, Underground Hose Type Connector."

Strainers (VXYVC)

USE

This category covers products intended for use in conjunction with equipment or piping installations handling flammable or combustible fluids. The maximum working pressure and type of fluid service are noted in the individual certifications.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C331, "Strainers for Flammable Fluids and Anhydrous Ammonia."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Strainer."

FLASHLIGHTS AND LANTERNS (IKBRC)

GENERAL

This category covers flashlights and lanterns investigated for use in the presence of specific flammable gas or vapour-air atmospheres in any of the groups under Class I hazardous (classified) locations. These devices employ dry-cell batteries and miniature lamp bulbs and are so constructed that, when the glass bulbs are broken, the lamp bulbs are instantaneously disconnected from the circuit.

Safety of operation in the presence of explosive mixtures may be endangered if lamps or dry-cell batteries having ratings other than those specified by the manufacturer are used.

Flashlights and lanterns are not intended for use in hospital operating rooms unless so marked on the device.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Flashlight and Lantern.''

FUEL EQUIPMENT (IRMTC)

LP-GAS AND COMPRESSED NATURAL GAS ACCESSORIES, AUTOMOTIVE TYPE (ITPVC)

USE AND INSTALLATION

This category covers accessories designed for use on LP-gas and compressed natural gas fuelled automotive vehicles. Their use does not imply that the entire fuel system on the vehicle has been investigated or is certified by Underwriters Laboratories of Canada.

These accessories may be installed in accordance with Amendment 1 to CAN/CGA-B149.2, ''Propane Storage and Handling Code,'' or Amendment 1 to CAN/CGA-B149.1, ''Natural Gas and Propane Installation Code.''

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standards used to investigate products in this category are CSA 12.2, ''Propane Fuel System Components for Use on Highway Vehicles,'' and ANSI/AGA NGV3.1/CGA NGV 12.3, ''Fuel System Components for Natural Gas Powered Vehicles.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''LP-Gas and Compressed Natural Gas Accessory, Automotive Type.''

FUEL EQUIPMENT, MARINE (ITRQC)

TANKS, MARINE (ITRZC)

This category covers equipment specifically investigated and certified for use in marinas or aboard marine vessels.

GAS SYSTEMS, COMPRESSED (JOVVC)

ACCESSORIES, GAS SYSTEMS (JPJTC)

This category covers accessories intended for use primarily by distributors of compressed gas, and in manufacturing systems, and adapted to the type of gas and working pressures encountered in general use.

Gas Connectors (JPJZC)

USE

This category covers assemblies for the connection of portable outdoor gas-fired appliances to the gas supply piping. They are intended for unconcealed outdoor locations and for use on gas piping systems having fuel gas pressures not in excess of 3.45 kPa.

These assemblies are intended for use in accordance with CAN/CGA-B149.1, ''Natural Gas and Propane Installation Code,'' and CAN/CGA-B149.2, ''Propane Storage and Handling Code.''

REQUIREMENTS

The basic standard used to investigate products in this category is CGA-8.4, ''Gas Hose Connectors for Portable Outdoor Gas-Fired Appliances.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas Connector.''

Hose Assemblies, Natural Gas and Propane (MXCQC)

GENERAL

Hose Assemblies, Natural Gas and Propane (MXCQC)−*Continued*

This category covers hose assemblies designed for conducting natural and propane gas. They consist of a length of Type I, Type II or Type III synthetic rubber hose and couplings, as described in CAN/CGA-8.1, ''Elastomeric Composite Hose and Hose Couplings for Conducting Propane and Natural Gas,'' or CAN1-8.3, ''Thermoplastic Hose and Hose Couplings for Conducting Propane and Natural Gas.'' They are intended for use in accordance with B149.1, ''Natural Gas and Propane Installation Code.'' Types I, II and III hose assemblies are designed for a maximum working pressure of 2400 kPa unless otherwise noted in the individual certifications.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CGA-8.1, ''Elastomeric Composite Hose and Hose Couplings for Conducting Propane and Natural Gas,'' or CAN1-8.3, ''Thermoplastic Hose and Hose Couplings for Conducting Propane and Natural Gas.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Hose Assembly, Natural Gas and Propane.''

CLOSURES FOR WALLS AND PARTITIONS (KCJAC)

GLASS BLOCKS (KCJUC)

GENERAL

This category covers glass blocks certified for a 3/4 h fire exposure when installed in accordance with the ''National Building Code of Canada,'' and ANSI/NFPA 80, ''Standard for Fire Doors and Fire Windows.'' The 3/4 h rating is established as a result of a representative assembly being subjected to a fire and hose stream test.

These glass blocks shall be permitted for the protection of exterior openings not exceeding 11.15 m^2 in area with neither dimension exceeding 3.66 m.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S106, ''Standard Method for Fire Tests of Window and Glass Block Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Glass Block.''

GLAZING MATERIALS (KCMZC)

GENERAL

This category covers glazing materials certified for fire exposure when installed in accordance with the ''National Building Code of Canada,'' and ANSI/NFPA 80, ''Standard for Fire Doors and Fire Windows.'' A 3/4 h rating is established as a result of a representative assembly being subjected to a fire and hose stream test.

These glazing materials are permitted for the protection of openings with the maximum aggregate area and dimensions indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S106, ''Standard Method for Fire Tests of Window and Glass Block Assemblies.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Glazing Material.''

HEATERS, AUTOMOTIVE (KIZZC)

COMBUSTION TYPE AUTOMOTIVE HEATERS (KJNXC)

USE

This category covers manually or automatically started gasoline, diesel fuel or propane gas-burning heating units designed for installation in passenger, commercial or off-highway vehicles or stationary engines, intended for preheating or space-heating purposes as indicated in the individual certifications.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Combustion Type Automotive Heater."

COOKING EQUIPMENT (KMSVC)

COOKING ASSEMBLIES, SELF-CONTAINED (KNKGC)

GENERAL

This category covers, but is not limited to, unit cooking appliances such as ovens, deep fat fryers and broilers. They are self-contained in integral enclosures and may be provided with fire protection systems and means to remove smoke and vapour from the cooking operation.

The assemblies may be attended, or provide for automatic dispensing, as indicated in the individual certifications. These devices are investigated for fire, gas, electrical hazard and upset, as appropriate, and as indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 109, "Commercial Cooking Appliances."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cooking Assembly, Self-Contained."

COOKING APPLIANCES, MISCELLANEOUS (KNZTC)

GENERAL

This category covers ovens, broilers, griddles, smokers and other solid, liquid or gaseous fuelled, or combination fuelled appliances. They do not include provisions for the collection and cleaning of the cooking smoke and vapours.

Electrical features such as rotisseries, timers, and fuel-feed control may be provided.

REQUIREMENTS

The basic standards used to investigate products in this category are ANSI Z21.58/CSA 1.6, "Outdoor Cooking Gas Appliances," ANSI Z83.11/CSA 1.8, "Gas Food Service Equipment," and ULC-S627, "Space Heaters for Use with Solid Fuels."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cooking Appliance, Miscellaneous."

HEATING EQUIPMENT (KTCRC)

This category covers heating appliances investigated to determine the suitability of the construction and performance of the appliances as an assembly and of the fuel-burning apparatus, controls, electrical features and other parts furnished by the manufacturer as part of the Listed assembly. It has also been determined that the combustible walls and surfaces adjacent to or in contact with the appliance will not attain unsafe temperatures when the appliance is installed and used as directed. The clearances to combustible construction designated under "Installation" in the individual Listings of boilers, furnaces, heaters and similar appliances indicate the minimum safe distance in millimeters measured in a straight line through air between the appliances, its flue pipe, and unprotected combustible material, including plastered construction having combustible supports, and the type of floor acceptable under the appliance. In all cases, the appliances should be installed to provide ready access to all components as may be necessary for cleaning and servicing, as the clearances indicated are only those required to avoid overheating of adjacent combustible construction.

Fuel Oil Specification — The fuel oil designations employed in the individual Listings and on the ULC label attached to a burner are those specified in CAN/CGSB-3.2, "Heating Fuel Oil," and ANSI/ASTM D396, "Standard Specification for Fuel Oils."

BOILER ASSEMBLIES (KVFTC)

Gas-fired Boiler Assemblies (KVTRC)

GENERAL

This category covers gas-fired boiler assemblies of the residential or industrial type.

These boiler assemblies are intended for installation on the type of floors and with clearances to combustible material not less than indicated on the boiler assembly. They are provided with primary safety controls as indicated on the boiler assembly label or on the burner label, and with limit controls.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.13/CSA 4.9, "Gas-Fired Low Pressure Steam and Hot Water Boilers," or CAN1-3.1, "Industrial and Commercial Gas-Fired Package Boilers."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gas-Fired Boiler Assembly."

Gas-oil-fired Boiler Assemblies, Combination (KWGZC)

GENERAL

This category covers combination gas-oil-fired boiler assemblies of the residential or commercial/industrial type.

These boiler assemblies are intended for installation on the type of floors and with clearances to combustible material not less than indicated on the boiler assembly. They are provided with primary safety controls as indicated on the boiler assembly label or on the burner label, and with limit controls.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standards used to investigate residential-type products in this category are ANSI Z21.13/CSA 4.9, "Gas-Fired Low Pressure Steam and Hot Water Boilers," and CSA B140.7, "Oil-Burning Equipment: Steam and Hot-Water Boilers."

The basic standards used to investigate commercial/industrial-type products in this category are CAN1-3.1 (latest edition), "Industrial and Commercial Gas-Fired Package Boilers," and CSA B140.7.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gas-Oil-Fired Boiler Assembly, Combination."

Oil-fired Boiler Assemblies (KWUXC)

GENERAL

This category covers oil-fired boiler assemblies of the residential or commercial/industrial type.

These boiler assemblies are intended for installation on the type of floors and with clearances to combustible material not less than indicated on the boiler assembly. They are provided with primary safety controls as indicated on the boiler assembly label or on the burner label, and with limit controls.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B140.7, "Oil-Burning Equipment: Steam and Hot-Water Boilers."

Oil-fired Boiler Assemblies (KWUXC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Oil-Fired Boiler Assembly.''

Oil-solid Fuel-fired Boiler Assemblies (KWVFC)

GENERAL

This category covers oil-solid fuel-fired boiler assemblies of the residential or commercial/industrial type.

These boiler assemblies are intended for installation on the type of floors and with clearances to combustible material not less than indicated on the boiler assembly. They are provided with primary safety controls as indicated on the boiler assembly label or on the burner label, and with limit controls.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standards used to investigate residential-type products in this category are CAN/CSA-B366.1, ''Solid-Fuel-Fired Central Heating Appliances,'' and CSA B140.7, ''Oil-Burning Equipment: Steam and Hot-Water Boilers.''

The basic standard used to investigate commercial/industrial-type products in this category is CSA B140.7.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Oil-Solid Fuel-Fired Boiler Assembly.''

Solid Fuel-fired Boiler Assemblies (KXBWC)

GENERAL

This category covers solid fuel-fired boiler assemblies of the residential or commercial/industrial type.

These boiler assemblies are intended for installation on the type of floors and with clearances to combustible material not less than indicated on the boiler assembly. They are provided with primary safety controls as indicated on the boiler assembly label or on the burner label, and with limit controls.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-B366.1 (latest edition), ''Solid-Fuel-Fired Central Heating Appliances,'' and CSA B140.7, ''Oil-Burning Equipment: Steam and Hot-Water Boilers.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Solid Fuel-Fired Boiler Assembly.''

BURNERS (KXIVC)

Gas Burners (KXWTC)

USE

This category covers gas burners intended for installation in heating appliances, such as boilers, furnaces, ovens, etc. Gas burners are provided with primary safety controls as indicated on the label.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CGA 3.4 (latest edition), ''Industrial and Commercial Gas-Fired Conversion Burners.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas Burner.''

Gas-oil Burners, Combination (KYKRC)

USE

Gas-oil Burners, Combination (KYKRC)−*Continued*

This category covers combination gas-oil burners intended for installation in heating appliances, such as boilers, furnaces, ovens, etc. Gas-oil burners are provided with primary safety controls as indicated on the label.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standards used to investigate products in this category are CGA 3.4 (latest edition), ''Industrial and Commercial Gas-Fired Conversion Burners,'' and CSA B140.1, ''Vapourizing-Type Oil Burners,'' or CSA B140.2.1 (latest edition), ''Atomizing-Type Oil Burners.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas-Oil Burner, Combination.''

Oil Burners (KYXZC)

USE

This category covers oil burners intended for installation in heating appliances, such as boilers, furnaces, ovens, etc. Oil burners are provided with primary safety controls as indicated on the label.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B140.1, ''Vapourizing-Type Oil Burners,'' or CSA B140.2.1 (latest edition), ''Atomizing-Type Oil Burners.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Oil Burner.''

CENTRAL FURNACES (KZLXC)

Gas-fired Central Furnaces (KZZVC)

GENERAL

This category covers gas-fired central furnaces intended for installation on the type of floors and with clearances to combustible material not less than indicated on the central furnace.

They are provided with primary safety controls as indicated on the furnace label or burner label, and with limit controls..

Direct-vent, forced-air furnaces are intended to be provided with a venting assembly as specified on the appliance. When suitable for use in mobile homes and recreational vehicles, it is so indicated in the individual certifications and on the product.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.47/CSA 2.3, ''Gas-Fired Central Furnaces.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas-Fired Central Furnace.''

Gas-oil Fired Central Furnaces, Combination (LANTC)

GENERAL

This category covers gas-oil-fired combination central furnaces intended for installation on the type of floors and with clearances to combustible material not less than indicated on the central furnace.

They are provided with primary safety controls as indicated on the furnace label or burner label, and with limit controls.

Direct-vent, forced-air furnaces are intended to be provided with a venting assembly as specified on the appliance. When suitable for use in mobile homes and recreational vehicles, it is so indicated in the individual certifications and on the product.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

Gas-oil Fired Central Furnaces, Combination (LANTC)−*Continued*

The basic standards used to investigate products in this category are ANSI Z21.47/CSA 2.3, "Gas-Fired Central Furnaces," and CSA B140.4 (latest edition), "Oil-Fired Warm Air Furnaces."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gas-Oil Fired Central Furnace, Combination."

Oil-fired Central Furnaces (LBBRC)

GENERAL

This category covers oil-fired central furnaces intended for installation on the type of floors and with clearances to combustible material not less than indicated on the central furnace.

They are provided with primary safety controls as indicated on the furnace label or burner label, and with limit controls.

Direct-vent, forced-air furnaces are intended to be provided with a venting assembly as specified on the appliance. When suitable for use in mobile homes and recreational vehicles, it is so indicated in the individual certifications and on the product.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B140.4 (latest edition), "Oil-Fired Warm Air Furnaces."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Oil-Fired Central Furnace."

Solid Fuel-fired Central Furnaces (LBHZC)

GENERAL

This category covers solid-fuel-fired central furnaces intended for installation on the type of floors and with clearances to combustible material not less than indicated on the central furnace.

They are provided with primary safety controls as indicated on the furnace label or burner label, and with limit controls.

Direct-vent, forced-air furnaces are intended to be provided with a venting assembly as specified on the appliance. When suitable for use in mobile homes and recreational vehicles, it is so indicated in the individual certifications and on the product.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-B366.1 (latest edition), "Solid-Fuel-Fired Central Heating Appliances."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Solid Fuel-Fired Central Furnace."

PORTABLE HEATERS (LJNZC)

Kerosene-fired Portable Heaters (LKBXC)

USE AND INSTALLATION

This category covers unvented portable heaters intended for installation on combustible or noncombustible floors at the minimum clearances to combustible materials as indicated in the individual certifications.

The heaters are designed to restrict the spillage of fuel and to extinguish the flame in the event of upset. Care should be employed to avoid contact with curtains, draperies and similar combustibles. It is intended that adequate combustion air be provided into the space in which they are used, and that the manufacturer's instructions for use and maintenance be followed.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN3-B140.9.3, "Portable Kerosine-Fired Heaters."

Kerosene-fired Portable Heaters (LKBXC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Kerosene Fired Portable Heater."

ROOM HEATERS (LPJXC)

Oil-fired Room Heaters, Vented (LQZRC)

GENERAL

This category covers assemblies intended for installation in residential or commercial premises as non-ducted area space heaters. They may be provided with thermostatically controlled automatic ignition and primary safety controls and interlocks to shut down the burner in the event of flame or induced draft failure. They may be provided with integral fuel tanks or means for connection to remote fuel tanks as stated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B140.3, "Oil Burning Stoves and Water Heaters."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Vented Oil Fired Room Heater."

WATER HEATERS (LURXC)

Gas-fired Service Water Heaters (LUYWC)

GENERAL

This category covers gas-fired service water heaters intended for installation on the type of floors and with clearances to combustible construction not less than indicated on the heater. They are provided with primary safety controls and with limit controls. When indicated in the individual certifications, the water heater may be combined with an air-handling unit.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.10.1/CSA 4.1, "Gas Water Heaters – Volume I, Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less," or ANSI Z21.10.3/CSA 4.3, "Gas Water Heaters – Volume III, Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating or Instantaneous."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gas-Fired Service Water Heater."

Gas-oil-fired Service Water Heaters (LVCQC)

GENERAL

This category covers water heaters intended for installation on the type of floors and with clearances to combustible construction not less than indicated on the heater. They are provided with primary safety controls and with limit controls. When indicated in the individual certifications, the water heater may be combined with an air-handling unit.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA B140.12, "Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools," and ANSI Z21.10.1/CSA 4.1, "Gas Water Heaters – Volume I, Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less," or ANSI Z21.10.3/CSA 4.3, "Gas Water Heaters – Volume III, Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating or Instantaneous."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufac-

Gas-oil-fired Service Water Heaters (LVCQC)−*Continued*

tured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas-Oil Fired Service Water Heater.''

Oil-fired Service Water Heaters (LVFVC)

GENERAL

This category covers water heaters intended for installation on the type of floors and with clearances to combustible construction not less than indicated on the heater. They are provided with primary safety controls and with limit controls. When indicated in the individual certifications, the water heater may be combined with an air-handling unit.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B140.12 (latest edition), ''Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Oil-Fired Service Water Heater.''

HEATING EQUIPMENT, MISCELLANEOUS (LVTTC)

GENERAL

This category covers unvented fixed or portable heaters intended for installation on combustible or noncombustible floors at the minimum clearances to combustible materials as indicated in the individual certifications.

These appliances use fuels acceptable for use in unvented applications as permitted by the Authorities Having Jurisdiction.

It is intended that adequate combustion air be provided into the space in which they are used, and that the manufacturer's instructions for use and maintenance be followed.

ADDITIONAL INFORMATION

For additional information, see Heating Equipment (KTCRC).

REQUIREMENTS

The basic standards used to investigate products in this category (except gas-fired crop dryers) are CAN3-B140.9.3, ''Portable Kerosine-Fired Heaters,'' CAN/ULC-S610, ''Factory-Built Fireplaces,'' and/or ANSI Z83.7/CSA 2.14, ''Gas-Fired Construction Heaters.''

The basic standard used to investigate gas-fired crop dryers in this category is CSA 3.8, ''Gas-Fired Equipment for Drying Farm Crops.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Heating Equipment, Miscellaneous,'' or other appropriate product name as shown in the individual Listings.

HOSE (MURZC)

FLEXIBLE METAL HOSE (MUSFC)

This category covers flexible metal hose intended for handling gases that are usually considered to be combustible, such as liquefied petroleum gas and manufactured and natural fuel gases, and ordinary flammable and combustible liquids, such as fuel oils, gasoline, kerosene, alcohol, and the like.

Flexible metal hose is not considered a substitute for standard pipe, wrought-iron or steel, and its use should be confined to applications where flexible connections cannot be avoided. It should not be subjected to torsional, tensile or excessive bending stresses and should be protected against mechanical damage.

Flexible Metal Hose for Flammable Fluids (MVTVC)

GENERAL

This category covers flexible metallic hose intended for use in handling combustible gases such as manufactured, natural, and liquefied petroleum

Flexible Metal Hose for Flammable Fluids (MVTVC)−*Continued*

gases, and for handling ordinary flammable liquids such as fuel oil, gasoline, kerosene, acetone, alcohol, cleaning liquids, and the like. Where indicated in the individual certifications, this hose is also suitable for use with anhydrous ammonia. Flexible metallic hose is intended for lines other than those employed in connection with safety devices, and where bending is not caused by automatic action. The maximum working pressure is noted in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Flexible Metal Hose (MUSFC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C536, ''Flexible Metallic Hose.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Flexible Metallic Hose for Flammable Liquids.''

GASOLINE HOSE (MWHTC)

GENERAL

This category covers synthetic rubber gasoline hose in sizes 16 to 32 mm inside diameter, intended for use on dispensing equipment at service stations or portable gasoline tanks, as discharge conduit, and other equipment requiring the use of a flexible conductor for gasoline.

Gasoline hose consists of an inner tube of synthetic rubber reinforcement and an outer cover of synthetic rubber or other polymeric materials.

The hose may include gasoline vapor recovery features. The vapor recovery portion of the hose consists of a separate tube or hose in addition to the regular liquid hose.

Gasoline hose should be regularly inspected at least four times a year and discarded when found to be deteriorated to a noticeable extent. Appropriate ventilation of the rooms where hose is used is essential.

CAUTION — At ambient temperatures, uncondensed gasoline continually gives off flammable vapor. An open flame, spark, or other ignition source, even at some distance from the gasoline, can ignite this vapor. The proportion of air to vapor will determine if the resulting combustion will be in the form of a burning gas or destructive explosion. The vapor from 0.5 L of gasoline will make 5.5 m3 of air explosive. Avoid leaks and spills, and exercise extreme caution in the handling of gasoline.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S612, ''Hose for Flammable and Combustible Liquids.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gasoline Hose.''

HOSE AND HOSE FITTINGS (MYYTC)

FIRE HOSE, LINED, FOR PUBLIC AND PRIVATE FIRE DEPARTMENT USE (MZQEC)

GENERAL

This category covers woven-cotton-jacketed, rubber-lined fire hose, and fire hose having synthetic fibre or filament yarns in the hose jackets and other linings as indicated in the individual certifications. Woven-jacketed-lined fire hose is made in the following trade sizes: 38, 50 and 65 mm, single- and multiple-jacketed; and 77, 90 and 125 mm, multiple-jacketed. Single-jacketed hose is intended for use at fire hydrants, standpipes, and similar places. It is less resistant to hard usage, and may not be suitable where the fabric will be subjected to chafing on rough or sharp surfaces. Single-jacketed hose is also made with a rubber or synthetic cover. Multiple-jacketed hose is intended for use on pumping engines and in places where service conditions require the additional protection against wear afforded by the extra woven jacket.

This category does not cover couplings or their method of attachment.

Fire hose of other constructions that meets the performance of jacketed-lined fire hose may be included as described in the individual certifications.

Lightweight hose having a lining or tube of latex-rubber-coated fabric or polyurethane complying in all respects other than lining thickness with the requirements for woven-jacketed-lined hose, and judged to be substantially equivalent, may be certified as indicated in the individual certifications.

Fire Hose, Lined, for Public and Private Fire Department Use (MZQEC)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S511, ''Lined Fire Hose for Interior Standpipes and Municipal and Industrial Fire Protection Services.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fire Hose Lined for Public and Private Fire Department Use.''

FIRE HOSE FOR INTERIOR STANDPIPES, LINED (MZTQC)

GENERAL

This category covers hose with cotton or synthetic jackets, with natural rubber, synthetic rubber or fabric-reinforced natural or synthetic latex linings laminated to the inner surface of the jacket. The hose is of lightweight construction, is made in 38 mm size, and is intended primarily for permanent installation at building standpipes.

This category does not cover couplings or their method of attachment.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S511, ''Lined Fire Hose for Interior Standpipes and Municipal and Industrial Fire Protection Services.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fire Hose for Interior Standpipes, Lined.''

FIRE HOSE, FORESTRY, LINED, PERCOLATING AND NON-PERCOLATING (MZZAC)

GENERAL

This category covers hose suitable for fighting forest fires. They include both lined percolating and non-percolating hose with woven jackets. Percolating hose is designed to provide wetting the entire hose surface to help protect it from burning.

This category does not cover couplings or their method of attachment.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S518, ''Non-Percolating Forestry Hose,'' or CAN/ULC-S519, ''Percolating Forestry Hose.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fire Hose, Forestry, Lined, Percolating'' or ''Fire Hose, Forestry, Lined, Non-Percolating.''

QUICK-CONNECT COUPLINGS, EXTERNAL LUG, FOR FORESTRY FIRE HOSE (NBBVC)

USE

This category covers couplings and adapters of the external lug, quick-connect type suitable for use with forestry fire hose.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S551, ''Forged External-Lug Quick-Connect Couplings and Adapters for Forestry Fire Hose,'' or ULC-S558, ''External-Lug Quick-Connect Couplings and Adapters for Forestry Fire Hose.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''External Lug, Quick Connect Coupling for Forestry Hose.''

HOUSEHOLD ALARM SYSTEMS (NBSQC)

HOUSEHOLD BURGLAR ALARM SYSTEM UNITS (NBSXC)

GENERAL

This category covers the individual units which may be interconnected to form an electrically operated household burglar alarm system. These units include a main control unit (with integral or separate power supply) and alarm-indicating devices (bells, relays, etc.). For other devices that may be used, see Contacts and Switches (AMQVC), Intrusion Detection Units (ANSRC) and Heat Detectors (SZGUC).

An installation drawing is employed as the controlling factor to ensure proper interconnection among units. The drawing may be attached to the control unit, provided detached, or included as part of an instruction or installation booklet.

An instruction booklet illustrating typical installation layouts, operation, maintenance, servicing, and test procedures is provided for each household burglar alarm system.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C1023, ''Preliminary Standard for Household Burglar Alarm System Units,'' and ANSI/UL 1023, ''Household Burglar-Alarm System Units.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Household Burglar Alarm System Unit,'' ''Security Equipment,'' ''Security Subassembly,'' ''Fire Alarm and Security Equipment,'' ''Fire Alarm and Security Subassembly,'' or other appropriate product name as shown in the individual Listings.

INSULATED BUILDING PANELS (OERQC)

GENERAL

This category covers factory-assembled insulated building panels intended for use as walls and ceilings in noncombustible construction.

These panels have been investigated in a full-scale room fire test. The room consists of four walls at right angles, a floor, and a ceiling. The room interior is 3.6 m long, 2.4 m wide and 2.4 m high. The floor and one of the 2.4 m by 2.4 m walls are constructed of noncombustible materials. The noncombustible wall has an open doorway measuring 2.0 m high and 0.8 m wide. The other three walls and the ceiling are constructed from the panels under investigation. Where the panels are not used for ceiling application, the test ceiling is selected to represent the worst case condition anticipated in the field and will be described in the individual certifications.

The panels are subjected to an ignition source as described in CAN/ULC-S138, located in one of the two corners opposite the doorway, for a period of not less than 15 minutes. Panels covered under this category have demonstrated that their contribution to fire growth within the room is sufficiently low to an extent that flames do not exit the open doorway, the floor heat flux level does not exceed 20 kW/m^2, and the room temperature does not exceed 600°C as measured 300 mm from the corner diagonally opposite to the ignition source and between 670 mm and 2100 mm from the floor.

Where sprinkler protection is specified, one sprinkler head is located 75 mm below the ceiling, 2.0 m from the 2.4 m wall, and 1.2 m from the 3.6 m wall adjacent to the ignition source. The type of sprinkler head and minimum water flow rate is specified in the individual certifications. A requirement of the sprinkler system is that it be consistent with ANSI/NFPA 13, ''Installation of Sprinkler Systems,'' and NFPA 231, ''General Storage,'' or NFPA 231C, ''Rack Storage of Materials,'' as applicable, and with generally accepted practices for the intended installation.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For surface burning characteristics of insulated building panels, see Composite Panels (BKRQC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S138, ''Method of Test for Fire Growth of Insulated Building Panels in a Full-Scale Room Configuration'' (supersedes ULC/ORD-C376).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufac-

tured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Insulated Building Panel."

FOAMED PLASTIC INSULATED GARAGE DOORS (OERZC)

GENERAL

This category covers factory-manufactured garage door assemblies using foamed plastic insulation when the foamed plastic is separated from occupied spaces by a facing other than minimum 0.38 mm sheet metal with a melting point not below 650°C.

Garage door assemblies using foamed plastic insulation covered under this category are investigated in a full-scale room fire test in accordance with ULC/ORD-C263.7, "Room Fire Test Method for Garage Doors Using Foamed Plastic Insulation." The room consists of four walls at right angles, a floor, and a ceiling. The room interior is 3660 mm long, 2440 mm wide and 2440 mm high. The floor, walls, and ceiling are constructed of noncombustible materials. One 2440 mm long wall has an open doorway measuring 2030 mm high and 760 mm wide. On the 2440 mm long wall opposite to the wall with the open doorway, the garage door with foamed insulation is mounted with the unprotected foam exposed to the inside of the room.

The garage doors are subjected to an ignition source as described in ULC/ORD-C263.7 located in one of the two corners opposite the doorway for a period of not less than 15 minutes. Garage doors covered this category have demonstrated that their contribution to fire growth within the room is sufficiently low to an extent that flashover does not occur, maximum instantaneous net peak of heat release does not exceed 260 kW, flames do not visually propagate for the full width of the specimen, core temperature rise does not exceed 400°C, and total smoke release does not exceed 60 m^2, 5 minutes after test nor 150 m^2, 7-1/2 minutes after the start of test.

The certifications pertain to the materials themselves and not to the structures in which they may be installed.

The insulating, acoustical, structural, wind loading, toxicity of the products of combustion, and other such properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For surface burning characteristics of foamed plastic insulated garage doors, see Composite Building Panels (BKRQC).

ADDITIONAL INFORMATION

For additional information, see Insulated Building Panels (OERQC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C263.7, "Room Fire Test Method for Garage Doors Using Foamed Plastic Insulation."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Foamed Plastic Insulated Garage Door."

LOCKS (OWVVC)

COMBINATION LOCKS (OXJTC)

GENERAL

This category covers combination locks intended for use on chests, safes and vault doors to provide means of locking the bolt work against unauthorized opening.

Combination locks are investigated primarily for correctness of design and accuracy of construction to guard against manipulation of the combination by sense of sight, touch or hearing. Combination locks do not necessarily have built-in protection against entry by force; such protection depends largely on the construction of the safe or vault door on which the lock is installed.

Combination locks may be of the hand-change or key-change type. The key-change type enables the owner to change the combination setting readily without opening the lock case. It is important that locks be set on a combination of numbers individual to each safe rather than on a common factory setting.

Combination locks are capable of withstanding ordinary wear and tear, corrosion, and rough usage for an extended period of service, normally without attention. They should not be lubricated, except by experts trained in the care and inspection of such locks.

Group 1 combination locks are highly resistant to expert or professional manipulation. The protection against expert manipulation includes closed

Combination Locks (OXJTC)–*Continued*

cams, notched tumblers, extra levers, or other advanced design features not found in conventional designs. Group 1 locks are considered suitable for use on burglary-resisting safes and chests such as Class TRTL-15X6, -30, -30X6, -60, TXTL-60x6 and on vaults.

Group 1R combination locks afford the same protection against expert or professional manipulation as a Group 1 lock and, in addition, include resistance against radiological methods of attack. Group 1R locks are considered suitable for use on safes, security files, and vaults where the highest degree of protection is required.

Group 2 combination locks are resistant to semiskilled manipulation. Group 2 combination locks are considered to be suitable for use on Unlisted safes, insulated record containers, residential security containers, and similar security containers.

Group 2M combination locks are moderately resistant to skilled manipulation. Group 2M combination locks are considered suitable for use on tool-resistant safes, Class TL-15, TL-15x6, TL-30 and TL-30x6, insulated record containers and light vault doors.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S327-1998, "Burglary Resistant Combination Locks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Combination Lock."

BURGLARY RESISTANT KEY LOCKS (OZFWC)

GENERAL

This category covers locks of the two-key, plate-tumbler type, designed for use on safe deposit boxes, collection safes and the like, where a high degree of resistance to theft, unauthorized entry, and robbery is the prime object. Such locks require the use of both a proper guard key and an individual customer's key for normal release of locking bolt.

Two-key safe deposit locks are available in various ranges of possible key changes, and some have sealed change keys from which the renter may select a key. Selection of the type of lock, therefore, depends on the number of deposit boxes at a given location and mode of operation desired to afford greatest protection both to the customer and deposit company.

Two-key locks do not necessarily embody inherent protection against punching, drilling, and other burglarious means. Such protection depends upon the method of installation and design of door and boxes so equipped. Also, the locks should be considered as complementary to, not substitutes for, Combination Locks (OXJTC).

Security-container key locks are designed for use on key-locked safes and related devices to provide a means of locking the boltwork against unauthorized opening and to protect against opening by picking and manipulating.

Security-container key locks may not have built-in protection against entry by drilling or forcing of the internal mechanism; such protection depends largely on the security container on which it is installed.

The key of a security-container key lock is field changeable and is equipped with a mechanical relocking device which operates if the lock is punched or pulled.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S328, "Burglary Resistant Key Locks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Burglary Resistant Key Lock."

TIMELOCKS (OZMVC)

GENERAL

This category covers delayed-action timelocks intended for protection against robbery. The timelocks may be classified into two groups, depending on whether the mechanism is automatic in operation and setting, or provides for manual setting at the will and convenience of the user. Automatic devices are generally factory adjusted to a fixed minimum time delay, whereas manual devices may be varied by the user to the desired delay at each winding.

The ability of a timelock to function continually and reliably for long periods of time depends on many factors, such as installation, care and inspection service. Where greater assurance of ability to unlock is desired,

Timelocks (OZMVC)−*Continued*

devices having multiple timer movements or power sources are available. Also, certain types of locks may be recommended by the manufacturer for some specific applications, as indicated in the individual certifications.

Timelocks should be under the care and inspection service of the manufacturer, or an organization recommended by the manufacturer.

Timelocks should be selected with proper regard to their use, operation and application.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S337, "Delayed-Action Timelocks," and ULC/ORD-C887, "Timelocks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Timelock."

MANIFOLDS (PBBZC)

This category covers devices for manifolding high-pressure gas cylinders and those designed to eliminate pipe joints where valves, gauges, etc., are to be grouped at a central location. The individual Listings identify the fluids with which these devices are intended to be used.

COMPRESSED GAS MANIFOLDS (PCRTC)

USE

This category covers compressed gas manifolds intended for connecting together a number of high-pressure gas cylinders containing oxygen, nitrogen, nitrous oxide, carbon dioxide, air, inert gases or fuel gases other than acetylene, or as limited by the individual certifications.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C407, "Manifolds for High Pressure Gas."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Compressed Gas Manifold."

ULC AUTHORIZED LABEL SUPPLIERS PROGRAM (PGAAC)

This category covers authorized label suppliers that have been found to comply with ULC's requirements for printing ULC's registered certification mark. The requirements for this program are outlined in the ULC publication "Printing ULC Marks."

ULC publishes authorized label suppliers online at www.ulc.ca. This database is the only method provided by UL to indicate that a label supplier is authorized to print ULC's registered Certification Mark.

The authorized label supplier's phone number, facsimile number, website and e-mail address (if applicable) and the types of labels the supplier has available are identified in the individual authorizations.

The authorized label supplier may not apply any Mark in such a way as to imply, indicate, or give the perception that the labels themselves are Listed as part of this program.

LIFE SAFETY EQUIPMENT (QGUYC)

LIFE SAFETY ROPE, HARNESS AND ASSOCIATED EQUIPMENT (QGUZC)

GENERAL

This category covers ropes, harnesses and hardware intended for use by fire fighters to support fire service personnel and civilians during rescue, fire fighting and other emergency operations. The load is limited to a maximum number of two people. The safe working load is not to exceed 275 kg.

Ropes for emergency life safety operations are intended to be previously unused. They are not intended for water rescue. Once used, a life safety rope is intended to be downgraded for other uses.

Life Safety Rope, Harness and Associated Equipment (QGUZC)−*Continued*

Rope tends to lose its strength when wet. Whenever a rope becomes wet, it must be allowed to dry naturally before being repacked and stored. It regains its strength when it dries.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S555, "Fire and Emergency Service Technical Rescue Ropes and Water Rescue Throw Ropes and Associated Equipment."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Life Safety Rope, Harness and Associated Equipment."

PUMPING EQUIPMENT FOR FIRE SERVICE (QVUTC)

This category covers pumps, drivers and accessory equipment used in supplying water for fire protection purposes.

In the individual Listings, the term "Rated Net Head Pressure" expresses the potential lift capacity of each pump at rated speed and rated capacity.

For example, horizontal shaft pumps or vertical shaft pumps taking suction under lift and having a "Rated Net Head Pressure" of 690 kPa are capable of lifting water from a cistern, pond, creek, river or other source, a vertical distance of 70 m, neglecting friction loss. It should be noted that the lift distance is intended to be measured from the surface of the water source. Where a pump is located above the water surface, the pressure at the discharge side of the pump is less than the "Rated Net Head Pressure" by an amount, expressed in kilopascals, approximately equivalent to the vertical distance in metres between the centre line of the pump discharge and surface of the water source plus loss due to friction in the suction pipe.

Where a horizontal shaft pump is supplied with water under pressure, the "Rated Net Head Pressure" is the pressure at the discharge side of the pump minus the pressure at which water is supplied to the pump.

ANSI/NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection," and Authorities Having Jurisdiction should be consulted before installation.

CENTRIFUGAL FIRE PUMPS (QXJYC)

GENERAL

This category covers centrifugal fire pumps and pump and controller assemblies intended for installation and use in accordance with ANSI/NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection."

1. **Horizontal and Vertical Shaft, Split-Case, Impeller Type** — A pump, single- or multi-stage, characterized by a housing which is split parallel to the shaft. The pump is normally installed with the shaft in the horizontal position, unless it is specifically indicated in the individual certifications that the pump is designed for installation in the vertical position.
2. **Vertical In-Line** — A pump designed for installation between piping flanges such that the suction and discharge connections have approximately the same centre line which intersects and is perpendicular to the shaft axis. This pump is designed to fully support the pump driving unit.
3. **Vertical Shaft, Turbine Type** — A pump with one or more submerged impellers discharging into one or more bowls (stages) and a vertical column pipe connecting the bowl(s) to the discharge head on which the pump driver is mounted. This pump is especially suited for conditions where the source of water is below ground level. Manufacturers can furnish pumps with oil-lubricated or water-lubricated bearings. A vertical shaft turbine-type pump mounted in a suction vessel (sometimes referenced as a "can" pump) is used for installation in a pipeline where it draws its suction from public mains or other positive-suction pressure sources.
4. **End Suction** — A single suction pump having its suction nozzle on the opposite side of the casing from the stuffing box and having the face of the suction nozzle perpendicular to the longitudinal axis of the shaft.
5. **Pump and Controller Assembly** — An assembly consisting of a vertical in-line pump and a limited-service electric controller necessitating only connections to a suitable power supply and suction and discharge piping. The controller is also certified separately under Pump Controllers (QYZSC).

Centrifugal Fire Pumps (QXJYC)−*Continued*

The pumps are rated at net head pressures as indicated in the individual certifications (minimum 275 kPa). Where a range of rated net pressures is shown, the manufacturer is in a position to furnish impellers to produce any rated pressure in that range.

Pumps rated at 700 kPa or greater net head pressures are designated as "standard" fire pumps. Those that are rated between 275 kPa and 700 kPa are generally considered as "low pressure" or "booster" pumps.

The maximum allowable discharge pressure is the maximum pressure that can safely be tolerated within the pump casing under any operating condition. While the values indicated in the individual certifications are the maximum for a given model designation, each pump is designed to accommodate specific installation needs, and the ratings indicated in the individual certifications are not intended to be modified. Where the pump output rating is less than the maximum allowable discharge pressure, the output rating is to prevail. Where pumps are used as "booster" pumps, care must be exercised in their selection to ensure that the maximum allowable discharge pressure of the pump is not exceeded when installed in a supply main.

ADDITIONAL INFORMATION

For additional information, see Pumping Equipment for Fire Service (QVUTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C448, "Guide for the Investigation of Pumps for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Centrifugal Fire Pump."

FIRE PUMP RELIEF VALVES (QXZQC)

GENERAL

This category covers fire pump relief valves intended for use in fire service systems up to maximum relief pressures specified in the individual certifications for sizes 3/4 to 10 NPS.

Relief valves are intended to be set to prevent pressure on the fire protection system elements in excess of that pressure which the system elements are capable of withstanding.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Pumping Equipment for Fire Service (QVUTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Pump Relief Valve."

INTERNAL COMBUSTION ENGINES FOR DRIVING CENTRIFUGAL FIRE PUMPS (QYLUC)

GENERAL

This category covers diesel engines used as a means for driving centrifugal fire pumps where supplemental units are desired or where other sources of power are not dependable or not available.

The power ratings noted in the individual certifications represent the engine power available at 91 m above sea level (barometer 100 kPa) and 25°C air temperature after taking the deductions considered in ANSI/NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection."

ADDITIONAL INFORMATION

For additional information, see Pumping Equipment for Fire Service (QVUTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C448A-1979, "Guide for the Investigation of Diesel Engines Driving Centrifugal Fire Pumps."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these

Internal Combustion Engines for Driving Centrifugal Fire Pumps (QYLUC)−*Continued*

products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Internal Combustion Engine for Driving Centrifugal Fire Pumps."

PUMP CONTROLLERS (QYZSC)

USE AND INSTALLATION

This category covers equipment intended for starting and stopping centrifugal fire pumps, including nonautomatic types and automatic types for electric-driven pumps and combined manual and automatic types for engine-driven pumps. These controllers are intended for installation and use in accordance with ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

Controllers for electric-driven, standard-size centrifugal fire pumps are intended for use with squirrel-cage or wound-rotor motors rated 600 V or less.

Controllers for squirrel-cage motors may be for across-the-line starting, primary resistance starting, or reduced-voltage autotransformer starting as indicated in the individual certifications.

"Limited Service Controllers" are intended for across-the-line-type, squirrel-cage motors of 22.4 kW or less, 600 V or less.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Pumping Equipment for Fire Service (QVUTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pump Controller."

FIRE AND ALARM EQUIPMENT (SYKJC)

This category covers equipment for initiating, controlling and indicating signals pertaining to the protection of life and property against fire, and intended to be installed, maintained and operated as system arrangements in accordance with CAN/ULC-S524, "Installation of Fire Alarm Systems."

Users of this equipment should consult Authorities Having Jurisdiction concerning the particular types to be used, number and location of stations, character and installation of wiring, methods to be followed in the receipt and disposition of signals, keeping of records, rendering of reports and all other details having a bearing on adequate installation, maintenance and use of the system to be employed.

Listed protective fire alarm equipment is subjected to laboratory investigation to determine its suitability for its intended service and for installation, maintenance and use in conformity with the applicable standard with particular regard to design and construction, practicability of application and reliability of performance in addition to the possible electrical hazards involved in its use.

This equipment may be used in different combinations as system assemblies. All parts of such an assembly may be either of one manufacture or of different manufactures. Special equipment designed for use with other particular equipment is indicated in the individual Listings.

A complete system is considered to be a combination of interrelated signal-initiating devices, signal-transmitting devices, signal-indicating devices and control unit installed in a protected premise in accordance with regulations enforced by the Authority Having Jurisdiction who determines the suitability of the installation for its particular application. This category applies only to the equipment intended to be installed to form these systems and not to the systems as installed.

The individual Listings indicate the type of factory follow-up service by which the Listed equipment is covered.

Identification of the equipment as being Listed can be made by observation of the label in the case of Label Service Listings and by the catalogue designations in the case of Reexamination Service Listings.

Assemblies of separately Listed parts in combination are not considered to be Listed system combinations unless the complete combination is Listed.

LISTING SERVICES

Certificate Service

Under this Certificate Service, Underwriters Laboratories of Canada authorizes the issuance of ULC certificates to installations which the

Listed installing/monitoring company represents to be in compliance with requirements established for the class. The certificate indicates the classification, location of equipment, period covered by the certificate, and name of the installing/monitoring company.

ULC conducts countercheck field examinations of representative installations of each Listed installing company, but assumes no liability for any loss that may result from failure of the equipment, incorrect certification, or nonconformity with requirements. If installations not in compliance with ULC's requirements are found as a result of field examinations, they are subject to correction by the listed installing company or cancellation of the certificate.

The appearance of a Listee's name in any of the following categories does not mean that all of the services of the Listed classification comply with ULC's requirements. Only those field installations which actually bear the certificate are covered by ULC's Certificate Service.

The location of the monitoring or installing company's headquarters is given in each case, but many maintain branch offices, operating stations, or selling agencies in localities other then those recorded in the following categories.

CONTROL UNITS, RELEASING DEVICE SERVICE (SYZVC)

GENERAL

This category covers control units intended for use with separately certified automatic fire detectors and releasing devices to form electrically supervised releasing systems. Units may incorporate circuits to provide for the transmission of signals to remote locations and for supplementary local annunciation. The control unit may consist of a unit assembly or a series of modules assembled in one or more enclosures.

Components or modules of the control unit with modular construction that may be shipped separately to the site or that are eligible for field replacement are identified by component labels (see **ULC MARK** below).

ADDITIONAL INFORMATION

For additional information, see Releasing Device Equipment (TBCXC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, "Control Units for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Releasing Device Service Control Unit," "Component for Releasing Device Service Control Unit," "Fire Alarm Equipment," "Fire Alarm Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

RELEASING DEVICES (SZNTC)

GENERAL

This category covers releasing devices intended for use

a) in supporting and releasing loads in connection with automatic operating devices or systems where loads at release lever hook do not exceed those specified in the individual certifications, or
b) as a means of releasing air, water, or other extinguishing systems under pressure from a piping system and confining and conducting that pressure through pipes or tubing to operate any connected pressure-operated mechanism.

Releasing devices may include a control unit in an assembly operating as a system.

ADDITIONAL INFORMATION

For additional information, see Releasing Device Equipment (TBCXC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, "Control Units for Fire Alarm Systems," and ANSI/UL 864, "Control Units and Accessories for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Releasing Device."

RELEASING DEVICE EQUIPMENT (TBCXC)

This category covers releasing devices with accessory equipment designed to release operating weights, air, water, or other extinguishing systems under pressure in the functioning of fire protection equipment.

They are available in both automatic and manual types. The automatic type may be actuated by heat detectors, smoke detectors, or detectors employing other principles of operation.

POWER SUPPLY UNITS, RELEASING DEVICE (TBJWC)

USE

This category covers power-supply units intended for use with certified releasing devices and releasing device control units.

ADDITIONAL INFORMATION

For additional information, see Releasing Device Equipment (TBCXC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, "Control Units for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Power Supply Unit, Releasing Device."

VISUAL AND VISUAL-AUDIBLE SIGNAL APPLIANCES, FIRE ALARM, INCLUDING ACCESSORIES (UEESC)

GENERAL

This category covers visual-signal appliances and appliances that provide a visual and audible signal. Some visual and/or visual-audible signal appliances, as identified in the individual certifications, may utilize certified accessories to supplement the operation of the visual and/or visual-audible device.

The visual signal is a flashing light having a minimum effective luminous intensity of 2 cd. A xenon strobe lamp with a suitable diffuser is commonly employed for the light source. The flash rate falls in the range of one to two flashes per second.

These appliances may incorporate bells, sirens, horns, speakers, etc., and are rated 85 dB(A) at 3.048 m.

The suitability of a visual-signal appliance for any specific area is dependent on the maximum ambient light level, the reflectivity of interior surfaces, and the effective luminous intensity of the flash. Maximum ambient light levels will generally occur in areas subject to direct sunlight. Selection and location of visual-signal appliances should be based on an engineering survey of all factors involved, including the directivity aspects of signal perception.

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories," CAN/ULC-S541, "Speakers for Fire Alarm Systems, Including Accessories," CAN/ULC-S526, "Visible Signal Devices for Fire Alarm Systems, Including Accessories," and ULC-S527, "Control Units for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Visual and Visual-Audible Signal Appliance, Fire Alarm."

AUDIBLE SIGNAL APPLIANCES, FIRE ALARM, INCLUDING ACCESSORIES (ULSZC)

USE

This category covers electrically-operated bells, buzzers, horns and similar signal-sounding appliances. Some audible-signal appliances, as identified in the individual certifications, may utilize certified accessories to supplement the operation of the audible device.

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories," and ULC-S527, "Control Units for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Audible Signal Appliance" and "Audible Signal Appliance Accessory."

BOXES, FIRE ALARM (UMGXC)

This category covers coded fire alarm boxes, combined coded fire alarm and watchman's station boxes, and non-coded fire alarm stations intended for use with private fire alarm systems.

Boxes, Coded, Fire Alarm (UMUVC)

USE

This category covers coded fire alarm boxes intended for use with private fire alarm systems, and combined coded fire alarm and watchman's station boxes.

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S528, "Manual Stations for Fire Alarm Systems, Including Accessories."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Box, Coded, Fire Alarm."

Boxes, Non-coded, Fire Alarm (UNIUC)

USE

This category covers manual non-coded fire alarm boxes intended for use with fire alarm systems.

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S528, "Manual Stations for Fire Alarm Systems, Including Accessories."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Non-Coded Fire Alarm Box," "Non-Coded Watchman's Station," "Non-Coded Fire and Watch Station," "Fire Alarm Back Box" or "Fire Alarm Box Trim."

Manual Box, Fire Alarm, Accessory (UNIZC)

USE

This category covers accessories intended for use in indoor manual station, non-coded fire alarms.

The manual station accessory is intended to provide a protective transparent enclosure or cover to a manual station without restricting access to the manual station and its operation.

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S528, "Manual Stations for Fire Alarm Systems, Including Accessories."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Manual Box, Fire Alarm, Accessory."

CONTROL UNITS, SYSTEM, FIRE ALARM (UOJZC)

GENERAL

This category covers electrical units for fire protective signaling systems intended for use in indoor locations in accordance with the standards recommended by the "National Building Code of Canada" for fire alarm protection service.

A control unit consists of an assembly of electrical parts having provision for connection of power-supply circuits routed through the control unit equipment by a prescribed scheme of circuiting. The circuits are extended to separate devices by which the operating parts of the control unit are actuated for signals and to separate or incorporate appliances by which the signals are indicated, so as to form a coordinated system combination for definite signaling service. The control unit may consist of a unit assembly or a series of modules assembled in one or more enclosures.

Control Units, System, Fire Alarm (UOJZC)−*Continued*

The Listee of a control unit furnishes the related actuating devices and signal-indicating appliances for use with the control unit or indicates the particular devices and appliances required and supplies instructions necessary to complete their interconnection at the installation.

The individual certifications indicate that wiring diagrams have been submitted with the control unit, along with information regarding its intended application, and that the unit has been tested with representative actuating devices and signal-indicating devices to be used with it as an interrelated assembly.

Components or modules of the control unit with modular construction that may be shipped separately to the site or that are eligible for field replacement are identified by component labels (see **ULC MARK** below).

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S527, "Control Units for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Fire Alarm System Control Unit," "Component for Fire Alarm System Control Unit," "Fire Alarm Equipment," "Fire Alarm Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

CONTROL UNIT ACCESSORIES, SYSTEM, FIRE ALARM (UOXXC)

USE

This category covers accessories used to supplement a system control unit as indicated by the installation wiring diagram applying to its application. These accessories are intended for use with certified system control units where the suitability of combination has been determined by Underwriters Laboratories of Canada.

Components or modules of the control unit accessories with modular construction that may be shipped separately to the site or that are eligible for field replacement are identified by component labels (see **ULC MARK** below).

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S527, "Control Units for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Fire Alarm System Accessory," "Component for Fire Alarm System Accessory," "Component for Fire Alarm Control Unit," "Fire Alarm Equipment," "Fire Alarm Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

DETECTORS, AUTOMATIC (UPLVC)

This category covers individual devices or prescribed combinations of devices designed to detect flame, heat, smoke or combustion gases resulting from a fire and to automatically operate electrical contacts. The signalling contacts may be integral parts of an individual device or parts of a separate device to which the detecting element is connected as an extended component.

The signalling contacts of the detector are intended to be connected to the circuit conductors of the fire-protective signalling system so that the fire alarm signal initiated by the detector will be indicated by the system.

The type of system (central station, proprietary, auxiliary, remote station or local) with which the detector can be used depends upon the design of the signalling circuit to which the detector contacts are intended to be connected. A detector may have non-coded signalling contacts connected directly to the actuating circuit of system control unit or to the actuating circuit of an electrically-operated transmitter, which will transmit coded signals over the signalling line circuit of a local, auxiliary, proprietary, remote station, or central station system.

The wiring diagram of the transmitter or system control unit with which the detector is used indicates the circuit application of the detector.

Detectors, Automatic (UPLVC)−*Continued*

A combination-type detector depends upon two or more related but separate pieces of equipment designed to be installed together so as to form a complete detector.

Flame-automatic Fire Detectors (UPZTC)

USE

This category covers devices intended to detect the presence of a flame but discriminate against other forms of light-producing processes, such as welding, grinding, luminaires, etc. The signalling contacts of the detector are intended to be connected to the circuit conductors of a fire-protection signalling system.

ADDITIONAL INFORMATION

For additional information, see Detectors, Automatic (UPLVC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S529, ''Smoke Detectors for Fire Alarm Systems,'' and ULC/ORD-C386, ''Flame Detectors.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Flame Detector – Automatic Fire Detector.''

Thermostats - Automatic Fire Detectors (UQGSC)

GENERAL

This category covers thermostat-type automatic fire detectors, which are integral assemblies of heat-responsive elements and non-coded electrical contacts that function automatically under conditions of increase in air temperature. These products consist of detection heads intended for mounting to compatible component bases having electrical functions, or self-contained units for mounting to standard electrical utility boxes.

The possible contact configurations of these devices are as follows:

- one-pole normally open-circuit type (1PNO)
- one-pole normally closed-circuit type (1PNC)
- two-pole open-circuit type (2PNO)
- two-pole normally closed-circuit type (2PNC)
- two-pole normally open-circuit and closed-circuit type (2PNO/NC)

Thermostats with normally open contacts are suitable for use as initiating devices of a fire-protective signalling system. Units with normally closed contacts are suitable for use as the heat-responsive portion of a releasing-device system.

The devices are either of the fixed-temperature (F), combination fixed-temperature and rate-of-rise (C), or rate compensation (R) type. There are basically two types: (1) A spot-pattern-type thermostat is one in which the thermally-sensitive element is a compact unit of small area; (2) a line-pattern-type thermostat is one in which the thermally-sensitive element is continuous along a line.

These thermostats have been investigated for indoor use only unless otherwise indicated in the individual certifications. Typically, thermostats are intended for locations where normal ceiling temperatures prevail (below 38°C). Locations where temperatures at ceiling are likely to be unduly high, from source of heat other than fire conditions, such as boiler rooms, dry kilns, etc., demand special consideration and selection of thermostats operating normally at higher temperatures, and which are capable of withstanding high temperatures for long periods of time. Care should be exercised to select thermostats having the proper temperature rating to guard against false alarms from premature operation:

For ceiling temperatures not exceeding 38°C, install the 71°C or equivalent (ordinary) rating thermostats.

For ceiling temperatures exceeding 38°C, but not 66°C, install 100°C or equivalent (intermediate) rating thermostats.

For ceiling temperatures exceeding 66°C, but not 107°C, install 141°C or equivalent (high) rating thermostats.

For ceiling temperatures exceeding 107°C, but not 149°C, install 182°C or equivalent (extra high) rating thermostats.

The response sensitivity of thermostats to standard test fires is indicated by the ''spacing'' rating. The spacing rating is the maximum distance between adjacent thermostats installed on a symmetrical layout with the maximum right-angle distance to any wall or partition one-half the distance between thermostats. THE FIRE TESTS ON THERMOSTATS CONDUCTED BY ULC ARE BASED ON ONLY ONE SET OF CONDITIONS, NAMELY A 5 m HIGH SMOOTH CEILING, NO AIR MOVEMENT, AND NO PHYSICAL OBSTRUCTIONS BETWEEN THE FIRE SOURCE AND

Thermostats - Automatic Fire Detectors (UQGSC)−*Continued*

THE THERMOSTAT. Under other conditions and forms of ceiling construction, reduced spacing may be required to obtain equivalent performance.

The placement and spacing of thermostatic devices should be based on consideration of the ceiling construction, ceiling height, room space area, space subdivisions, the normal room temperature, possible exposure of the devices to abnormal heat, such as may be produced by manufacturing processes or equipment, and to draft conditions likely to be encountered at the time of the fire.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Detectors, Automatic (UPLVC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530, ''Heat Actuated Fire Detectors for Fire Alarm Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Thermostat – Automatic Fire Detector.''

Heat-automatic Fire Detector Accessories (UQKEC)

USE AND INSTALLATION

This category covers heat detector accessories, which are devices employed to supplement heat detector operation when connected as part of a fire alarm system, or used to validate heat detector operation. The interconnection is indicated on the installation wiring diagram associated with the detector. Their installation and application are restricted to the limitations supplied with the device.

ADDITIONAL INFORMATION

For additional information, see Thermostats – Automatic Fire Detectors (UQGSC), Detectors, Automatic (UPLVC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530, ''Heat Actuated Fire Detectors for Fire Alarm Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Heat-automatic Fire Detector Accessory.''

Smoke-automatic Fire Detectors (UROXC)

GENERAL

This category covers smoke detectors designed to detect the particulate constituent of smoke, and which may utilize the ionization or photoelectric principle of operation. The intended application of smoke detectors is identified in the individual certifications in accordance with the following basic classifications:

1. **Spot-Type Detector Units for Open-Area Protection** — These products consist of detection heads intended for mounting to compatible component bases having electrical functions, or self-contained units for mounting to standard electrical utility boxes. They are intended for use as initiating devices of a fire-protective signalling system. In this application, the smoke detector is connected in the initiating circuit of a compatible system control unit, or in the initiating circuit of compatible interface equipment, such as an electrically-actuated transmitter or transponder. Detectors may be provided with an integral audible device which is energized in the alarm condition, and/or with an integral heat detector which is connected internally to the smoke detector alarm circuit. Actuation of the heat detector results in the same alarm signal as obtained from the smoke detector.
2. **Spot-Type Detector Units for Releasing Device Service** — These products consist of detection heads intended for mounting to compatible component bases having electrical functions, or self-contained units for mounting to standard electrical utility boxes. They are provided with normally closed contacts for connection to releasing equipment to close fire doors, shut down fan motors, etc. These units are not intended for use as initiating devices of a fire-protective signalling system.
3. **Air-Duct-Type Detector Units** — These products consist of a smoke detection device (or head) contained within a duct attachment having sampling tubes, or a detector for mounting within the duct. The primary function of air duct detectors is to shut down blowers and

Smoke-automatic Fire Detectors (UROXC)−*Continued*

dampers of air conditioning and ventilating systems in an attempt to prevent a possible panic hazard and property damage from distribution of smoke by the building duct system. THESE DETECTORS ARE NOT INTENDED AS A SUBSTITUTE FOR OPEN-AREA PROTECTION.

4. **Projected-Beam-Type Smoke Detector Units for Open-Area Protection** — Each projected beam detector consists of a transmitter and a receiver which are located separately from each other within a specified distance and mounted on the ceiling or wall. The transmitter/receiver pair smoke detector is intended for use as an initiating device of a fire-protective signalling system. In this application, the smoke detector is connected in the initiating circuit of a compatible system control unit. The detector may be provided with an integral audible device which is energized in the alarm condition, and/or with an integral heat detector which is connected internally to the smoke detector alarm circuit.
5. **Sampling Detectors** — These products consist of a programmable controller/analyzer and sampling tubes used for open-area protection in cleanrooms or computer facilities. Sensitivities may be extremely high; the Authority Having Jurisdiction should be consulted before installation.

Installation

The following factors should be considered in every installation:

1. **Environmental Considerations** — The detectors are intended for indoor use only where normal ceiling temperatures prevail. Care should be used that detectors are not installed in areas where conditions may cause unwanted alarms. Some typical examples of such locations are:

a. Areas where particulate matter from exhaust or normal manufacturing processes are present.
b. In dusty areas, or in atmospheres where particulate matter such as aerosols, could enter the chamber.

2. **Detector Locations** — The location of detectors should be based on an engineering survey of the conditions to be anticipated in service. Detectors should be installed only after a thorough study is made of the premises to be protected (whether in planning or construction stage) and of the life and property values involved. Consideration should be given to all features which would have a bearing on the location and number of detectors required, including such pertinent physical configurations as sizes of bays, ceiling heights, sloped roofs, diffusion from air conditioning and ventilating currents, high stock piling, etc. Test smoke should be employed, where feasible, to explore prevailing conditions prior to installation. For early detection, units are intended to be located so as to obtain optimum advantage from ambient air movement. Since an optimum layout may not be a symmetrical spacing of units, a "spacing" rating is not allocated to smoke detectors.
3. **Stability of System** — In view of the innumerable environmental conditions which exist in the field, it is recommended that the stability of a system be monitored prior to placement into service to screen out detector locations where unwanted alarms may occur. Relocation of the detectors, or a change in the sensitivity setting where permitted in the marking of the detectors, may be required.
4. **Air Duct Detectors** — Intended to be installed in systems where temperatures at the detectors do not exceed 38°C. If air duct detectors suitable for the purpose are connected to a fire alarm system, adequate precautions should be taken to ensure that false alarms will not be caused by any operational aspect of the air system or by environmental particulate matter drawn into the duct either from indoors or outdoors. Each installation should be checked for adequate stability under prolonged shut down and maximum velocity conditions which may occur in practice.

Maintenance

Smoke detectors may require periodic cleaning and servicing to ensure proper operation. If a cleaning schedule is not instituted, unwanted alarms or loss in sensitivity may result. The frequency of cleaning required will depend upon the ambient conditions which prevail and may be determined by sensitivity testing. Reference should be made to the manufacturer's instructions for the test instruments which may be required and the procedure to be followed for determination of the sensitivity of installed detectors.

ADDITIONAL INFORMATION

For additional information, see Detectors, Automatic (UPLVC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S529, "Smoke Detectors for Fire Alarm Systems."

Detectors utilizing audible signals or combined with thermostats are additionally investigated to CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories," and/or CAN/ULC-S530, "Heat Actuated Fire Detectors for Fire Alarm Systems."

Smoke-automatic Fire Detectors (UROXC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Smoke-Automatic Fire Detector."

Accessories, Smoke-automatic Fire Detector (URRQC)

USE

This category covers accessories intended for use with certified automatic fire detectors. Their installation and application are restricted to the limitations supplied with the device.

ADDITIONAL INFORMATION

For additional information, see Smoke-Automatic Fire Detectors (UROXC), Detectors, Automatic (UPLVC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S529, "Smoke Detectors for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Accessory, Smoke-Automatic Fire Detector."

EXTINGUISHING SYSTEM ATTACHMENTS, FIRE ALARM (USQTC)

GENERAL

This category covers devices having electrical signalling contacts and designed for attachment to extinguishing system equipment so as to provide:

(a) Alarm signals indicating discharge of extinguishing means.
(b) Supervisory signals indicating abnormal conditions of extinguishing system equipment.
(c) Supervisory signals indicating restoration to normal of extinguishing system equipment.

Plug-type switches do not comply with (c) above and are not intended for ordinary use. They are intended to be installed for unusual conditions such as pit valves and nonrising stem gate valves where no other method of protection is available or practical.

Waterflow in extinguishing systems may also be detected by alarm valves covered under Valves, Alarm (VPLXC).

The signal contacts of these attachments may be of the non-coded or coded type.

Devices classified as non-coded types have contacts that perform a switching function and are intended for connection to actuating circuits of a separate electrically-operated transmitter or to the signalling line circuit of a separate electrical control unit by which their action is indicated.

Devices classified as coded type have contacts that perform a coded signalling impulse function resulting from the operation of a transmitting mechanism which is a part of the attachment, and are intended for connection to the signalling line circuit of a separate electrical control unit by which their action is indicated.

These devices are suitable for use in conjunction with central station watchman, fire alarm and supervisory protective signalling services.

Attachments for automatic sprinkler systems are classified as follows:

Waterflow Alarm Signal Types

Alarm or Dry-Pipe Valve Attachment – Mechanically operated on lifting of alarm valve clapper, or pressure operated, by suitable connection to alarm or dry-pipe valve piping trim.
Waterflow Indicators – Paddle operated.
Special Attachment – Type not included by above classification.

Supervisory Signal Types

Valve Position Signal Attachment – Operated by mechanical linkage to movable parts of valve.
Gate Valve Position Supervisory – Ordinary.
Gate Valve Position Supervisory – Plug-type switch.
Water Level Signal Attachment – Operated by tank float.
Pressure Signal Attachment – Operated by pressure change of air, steam or water.
Temperature Signal Attachment – Operated by water or air temperature change.

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

Extinguishing System Attachments, Fire Alarm (USQTC)−*Continued*

The basic standard used to investigate products in this category is ULC-S548, "Alarm Initiating and Supervisory Devices for Water Type Extinguishing Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Extinguishing System Attachment, Fire Alarm."

FIRE ALARM DEVICES, SINGLE AND MULTIPLE STATION (UTEMC)

This category covers heat-actuated-type single-station fire alarm devices normally intended to be employed in ordinary indoor locations, together with smoke-actuated-type fire alarm devices. Recommendations for typical installations are contained in CAN/ULC-S540-1999, "Installation of Residential Fire Warning Systems."

These devices are self-contained units incorporating means for both fire detection and alarm sounding.

A heat-sensitive element of eutectic alloy or bimetallic metal is generally employed in the detection mechanism. Energy for sounding the alarm may be obtained from a wound spring or compressed gas.

These devices are normally employed as separate units, in which case they are known as single-station devices. However, the units operated by compressed gas may also be connected by tubing with other and similar units. These units are known as multiple-station devices. When connected in this manner, the detection of a fire by one unit results in the sounding of an alarm by all units. The spring-wound units are not capable of being linked together in this way.

Fire Alarm Devices, Heat Actuated (UTEZC)

GENERAL

This category covers heat-actuated devices intended for locations where normal ceiling temperatures prevail (below 38°C). In order to minimize false alarms from premature operation, the operating temperature rating of heat-actuated devices should be appropriate for the maximum ambient temperature expected. Locations where the temperatures at the ceiling level are likely to be unduly high from sources of heat other than fire conditions, such as boiler rooms, etc., require special considerations.

Under these conditions, alarm devices operating normally at higher temperatures and capable of withstanding higher than normal ambient temperatures for long periods of time may be required. Care should be exercised to select alarm devices having the appropriate temperature rating to guard against false alarms from premature operation.

For ceiling temperatures not exceeding 38°C, devices having a temperature rating of 58°C are recommended. For ceiling temperatures exceeding 38°C but not 66°C, devices having a temperature rating of 79°C are recommended.

The response sensitivity of heat-actuated fire alarm devices to standard test fires is indicated in the spacing rating assigned to the device. The spacing rating is the maximum distance between adjacent devices installed in a symmetrical layout with the maximum right-angle distance to any wall or partition one half the distance between the devices.

The spacings as specified in individual certifications are for flat, smooth ceiling construction of ordinary height, generally regarded as the most favourable conditions for distribution of heated air currents resulting from a fire. Under other forms of ceiling construction, reduced spacing of alarm devices may be required.

The placement and spacing of alarm devices should be based on consideration of the normal ceiling temperatures, possible exposure of the devices to abnormal heat, and to the draft conditions likely to be encountered at the time of a fire. Recommendations for typical installations are contained in CAN/ULC-S540, "Installation of Residential Fire Warning Systems."

ADDITIONAL INFORMATION

For additional information, see Fire Alarm Devices, Single and Multiple Station (UTEMC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530, "Heat Actuated Fire Detectors for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Alarm Device, Heat Actuated."

Fire Alarm Devices, Heat Actuated for Household Use (UTERC)

GENERAL

This category covers heat-actuated devices normally installed in locations where normal ceiling temperatures prevail (below 38°C). As the temperature rating of a device decreases, the maximum allowable ceiling temperature decreases accordingly. As a result, the number of areas where these products may be used is limited. Accordingly, devices having a temperature rating of 47°C are suitable for use only in indoor residential locations where the maximum ceiling temperature is 33°C.

The placement of alarm devices should be based on consideration of typical ceiling temperatures, possible exposure of the devices to abnormal heat, and to the draft conditions likely to be encountered at the time of a fire. The number of alarm devices should be based on consideration of the size of the room. Recommendations for typical installations are contained in CAN/ULC-S540-1999, "Installation of Residential Fire Warning Systems."

ADDITIONAL INFORMATION

For additional information, see Fire Alarm Devices, Heat Actuated (UTEZC), Fire Alarm Devices, Single and Multiple Station (UTEMC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530, "Heat Actuated Fire Detectors for Fire Alarm Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Alarm Device, Heat Actuated for Household Use."

Smoke Alarms and Accessories (UTGTC)

GENERAL

This category covers smoke alarms intended for use in ordinary indoor locations, mobile homes or recreational vehicles. Some smoke alarms, as identified in the individual certifications, may utilize certified accessories to supplement the smoke alarm's application.

This category also covers accessories intended for use with smoke alarms, such as relays, remote silencing switches, etc.

Each unit incorporates means for both fire detection and alarm sounding and may be single-station type or multiple-station type as identified in the individual certifications. A single-station-type smoke alarm is a self-contained unit not arranged for interconnection with other units. A multiple-station-type smoke alarm is a self-contained unit designed for interconnection with other units of the same model or catalogue designation within an individual dwelling unit, and functionally arranged so that actuation of one results in alarm sounding by all interconnected units.

Smoke alarms are not intended for use in fire alarm systems. In addition, the acceptability of smoke alarms equipped with ancillary features such as relays, automatic diallers, radio transmitters or interconnections is subject to approval by the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Fire Alarm Devices, Single and Multiple Station (UTEMC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S531, "Smoke-Alarms."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Smoke Alarm" or "Smoke Alarm Accessory."

Smoke-alarm Components (UTHDC)

GENERAL

This category covers devices that are incomplete in certain constructional features or restricted in performance capabilities and intended for use as components of smoke alarms which are submitted for investigation rather than for direct separate installation in the field. The final acceptance of the product is dependent upon its installation and use in complete assemblies of smoke alarms submitted for examination and tests to Underwriters Laboratories of Canada.

ADDITIONAL INFORMATION

For additional information, see Smoke Alarms and Accessories (UTGTC), Fire Alarm Devices, Single and Multiple Station (UTEMC) and Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S531, "Smoke-Alarms."

Smoke-alarm Components (UTHDC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Smoke-Alarm Component.''

HEAT-ACTUATED DEVICES FOR SPECIAL APPLICATION (UTHVC)

GENERAL

This category covers fixed-temperature and rate-of-rise heat-actuated-type detectors or devices employing a special construction different from conventional thermostats, designed to detect an abnormal increase in air temperature.

These detectors and devices are intended to be installed adjacent to the equipment being protected as identified in the installation instructions, and in accordance with CAN/ULC-S530, ''Heat Actuated Fire Detectors for Fire Alarm System,'' CAN/ULC-S524-01, ''Installation of Fire Alarm Systems,'' and CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' The temperature rating of the detector should be taken into consideration with regard to installation in the ambient temperature of the equipment to be protected under operating conditions to guard against false alarms. The detectors are intended to be connected to the initiating device circuits of certified control units that provide audible alarm signals or employed as part of an extinguishing system.

Spacings for Equipment Protection — Reference should be made to the manufacturer's installation drawings and instructions

Authorities Having Jurisdiction should be consulted before installation

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530-1991, ''Heat Actuated Fire Detectors for Fire Protective Signaling Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Heat-Actuated Device for Special Application.''

HOUSEHOLD FIRE WARNING SYSTEMS (UTLQC)

Household Fire Warning System Units (UTOUC)

GENERAL

This category covers the individual units which are interconnected to form an electrically operated household fire-warning system. These units include a main control unit (with integral or separate power supply) and related accessories intended for connection to the control unit.

A control unit may additionally include circuit facilities for connection to intrusion-detection devices and control stations to form a combination fire and burglar alarm system. In such a combination control unit, the fire alarm signal takes precedence over the burglar alarm signal and a distinction between alarm signals is required. A common trouble signal may be employed for both. Combination units are also covered under Household Burglar Alarm System Units (NBSXC).

Installation — The units comprising a system are intended to be installed in accordance with the applicable requirements of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' or CAN/ULC-S540, ''Installation of Residential Fire Warning Systems.''

At least one smoke detector is intended to be provided in a household fire-warning system. The smoke detector can be either electrically wired and operated from the control unit, or be a separately operated device, such as a single-station-type smoke detector covered under Fire Alarm Devices, Single and Multiple Station (UTEMC).

An installation drawing is employed as the controlling factor to ensure proper interconnection of units. The drawing may be attached to the control unit, provided detached, or included as part of an instruction or installation booklet.

Instructions — An instruction booklet illustrating typical installation layouts, operations, maintenance, servicing, and test procedures is provided with each control unit.

RELATED PRODUCTS

Additional equipment, such as bells, horns, heat detectors and smoke detectors, may be required in various applications to complete a system.

Household Fire Warning System Units (UTOUC)−*Continued*

Separate certifications of such equipment are covered under Audible Signal Appliances (ULSZC), Smoke-Automatic Fire Detectors (UROXC), Thermostats – Automatic Fire Detectors (UQGSC) and Fire Alarm Devices, Single and Multiple Station (UTEMC).

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S545, ''Residential Fire Warning System Control Units.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Household Fire Warning System Unit,'' ''Fire Alarm Equipment,'' ''Fire Alarm Subassembly,'' ''Fire Alarm and Security Equipment,'' ''Fire Alarm and Security Subassembly,'' or other appropriate product name as shown in the individual Listings.

POWER SUPPLY UNITS, FIRE ALARM (UTRZC)

USE

The category covers power-supply units intended for application as components of fire-protective signalling systems.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S318, ''Power Supplies for Burglar Alarm Systems,'' in addition to certain applicable clauses of ULC-S527, ''Control Units for Fire Alarm Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Power Supply Unit, Fire Alarm.''

SPEAKERS AND ACCESSORIES FOR FIRE ALARM SYSTEMS (UUMWC)

USE

This category covers speakers and their accessories intended for use in fire alarm and/or emergency communication systems. Some speakers, as identified in the individual certifications, may utilize certified accessories to supplement the operation of the audible device.

ADDITIONAL INFORMATION

For additional information, see Fire and Alarm Equipment (SYKJC).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S541, ''Speakers for Fire Alarm Systems, Including Accessories,'' and ULC-S527, ''Control Units for Fire Alarm Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Speaker for Fire Alarm System'' or ''Speaker Accessory for Fire Alarm System.''

TRANSMITTERS, ELECTRICALLY ACTUATED, FIRE ALARM (UUTVC)

GENERAL

This category covers unit assemblies containing an electrically-controlled mechanism designed to automatically transmit coded signals when actuated by non-coded signalling contacts which are not part of its assembly. The coded signalling contacts are intended to be connected to the line circuit of a control unit by which the transmitter signals are indicated.

These transmitters are usually employed to obtain coded signal indication of the operation of automatic fire detectors, extinguishing system attachments and similar devices having non-coded signalling contacts.

These transmitters are designated as being for central station, proprietary, remote station or local service in accordance with the provisions made for electrical supervision of their actuating circuits and their ability to operate under faulty conditions as specified in the standards applying to the application.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S527, ''Fire Alarm Control Units,'' and ULC/ORD-C693, ''Central Station Fire Protective Signalling Systems and Services.''

Transmitters, Electrically Actuated, Fire Alarm (UUTVC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Transmitter, Electrically Actuated, Fire Alarm."

ROOF COVERING MATERIALS (TEVTC)

This category covers built-up and prepared roof-covering materials intended for the protection of roof decks from external fire exposure. These roof coverings have not been investigated for performance when exposed to a fire from an internal source, i.e., directed onto the underside of the roof deck assembly. For roof deck assemblies investigated for performance under internal fire exposure, see Roof Deck Constructions (TGKXC).

Built-up roof coverings are composed of labeled materials covered under Built-Up Roof Covering Materials (TGFUC), and assembled as indicated to provide Class A, B or C coverings.

Prepared roof coverings, covered under Prepared Roof Covering Materials (TFWZC), applied in accordance with detailed instructions included in the packages of materials as received, provide Class A, B or C coverings as indicated on the label applied to each package.

Authorities Having Jurisdiction should be consulted as to which class of roof coverings will be acceptable in each location.

Class A includes roof coverings that are effective against severe fire exposure. Under such exposure, roof coverings of this class are not readily flammable and do not carry or communicate fire, afford a fairly high degree of fire protection to the roof deck, do not slip from position, possess no flying brand hazard, and do not require frequent repairs in order to maintain their fire-resisting properties.

Class B includes roof coverings that are effective against moderate fire exposure. Under such exposure, roof coverings of this class are not readily flammable and do not readily carry or communicate fire, afford a moderate degree of fire protection to the roof deck, do not slip from position, possess no flying brand hazard, but may require infrequent repairs in order to maintain their fire-resisting properties.

Class C includes roof covering that are effective against light fire exposure. Under such exposure, roof coverings of this class are not readily flammable and do not readily slip from position, possess no flying brand hazard, and may require occasional repairs or renewals in order to maintain their fire-resisting properties.

POLYVINYL CHLORIDE ROOFING MEMBRANE (TFVMC)

GENERAL

This category covers polyvinyl chloride (PVC) roofing membranes certified as to their physical properties.

CAN/CGSB-37.54, "Polyvinyl Chloride Roofing and Waterproofing Membrane," provides for classification of PVC membranes by type (construction) and class (intended use) as follows:

Type 1 — Non-reinforced, for flashing only
Type 2 — Containing embedded fibres
Type 3 — With a non-embedded fabric backing
Type 4 — Reinforced with an embedded fabric
Class A — Non-exposed roofing
Class B — Exposed roofing
Class C — Waterproofing
Class D — Asphalt compatible

REQUIREMENTS FOR PVC MEMBRANES
(Unless otherwise specified, these are minimum requirements)

Property	Type 1	Requirements Type 2	Type 3	Type 4
Overall thickness, mm	1.2			
Coating thickness, mm[a]	—			
Tensile strength, MPa	10.4	10.4	—	—
Breaking strength, kN/m	—	—	35.0	35.0
Elongation at break, %	250.0	250.0	15[b]	15[b]

Polyvinyl Chloride Roofing Membrane (TFVMC)−*Continued*

Property	Type 1	Requirements Type 2	Type 3	Type 4
Lap joint strength as % of tensile breaking strength				
—Initial[c]	75.0		75.0	75.0
—After 7 d in boiling water[d]	70.0		70.0	70.0
Low-temperature impact	8 out of 10 pass			
Retention of properties after heat aging, as % of original[d]	8 out of 10 pass			
—Tensile breaking strength	90.0	90.0	90.0	90.0
—Elongation[b]	90.0	90.0	90.0	90.0
—Low-temperature flexibility	Pass	Pass	Pass	Pass
Resistance to accelerated weathering, Visual inspection	No cracking, blistering appreciable color change			
—Elongation, % of original[b]	90.0	90.0	90.0	90.0
—Low temperature impact	8 out of 10 pass			
—Low-temperature flexibility	Pass	Pass	Pass	Pass
Water vapor transmission, max g/m^2 in 24 h				
—Classes A and B	4.0	4.0	4.0	4.0
—Class C	1.0	1.0	1.0	1.0
Effect of water absorption, Mass increase, max %	30%	30%	30%	30%
Tensile breaking strength, % of original	90%	90%	90%	90%
Elongation, % of original[b]	90%	90%	90%	90%
Dimensional change, max %				
Without loading	2.0	0.5	0.5	0.5
With loading				
—Machine direction	0.5	0.5	0.5	0.5
—Cross machine direction	0.2	0.2	0.2	0.2
Cone penetration, N	30.0	30.0	30.0	30.0
Asphalt compatibility, Class D only Mass decrease, max %	5.0	5.0	5.0	5.0

[a]With no single measurement less than 0.32 mm.
[b]The PVC matrix must not break before the reinforcement.
[c]No shearing of the lap joint shall occur.
[d]With no delamination.

The certifications pertain to the materials themselves and not to the structures in which they may be installed.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on the performance of these products, see Built-Up Roof Covering Materials (TGFUC).

ADDITIONAL INFORMATION

For additional information, see Roof Covering Materials (TEVTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CGSB-37.54, "Polyvinyl Chloride Roofing and Waterproofing Membrane" (current issue).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of

Polyvinyl Chloride Roofing Membrane (TFVMC)−*Continued*

this Directory) together with the word "LISTED," a control number, and the product name "Polyvinyl Chloride Roofing Membrane."

PREPARED ROOF COVERING MATERIALS (TFWZC)

GENERAL

This category covers materials intended to provide Classes A, B and C coverings on combustible (wood – 19 mm thick sheathing boards or minimum 9.5 mm thick plywood or minimum 7.5 mm thick plywood with all joints blocked with solid lumber, unless otherwise indicated) decks when applied in accordance with detailed instructions included with each package.

The roof-covering classifications are applicable for either new work or for re-roofing purposes when installed on roof decks as described above.

Flashings and trimmings are intended to be the same as or not less than the equivalent of the roof coverings in each class, or of copper, or galvanized steel, having a minimum thickness of 0.5 mm.

Class A — Prepared Roof Coverings

Asphalt shingles are composed of matts that have been saturated and coated on both sides with asphalt and surfaced with inorganic granules laid in accordance with the instruction sheets with each package. The shingles are limited to the minimum thickness of roof deck specified and capable of receiving and retaining nails.

Reinforced plastic roof panels are composed of bonding plastic skins to an insulated metal grid core. The panels are self-supported and are tested without a roof deck. The panels are joined together in accordance with the manufacturer's instructions and at maximum inclines indicated in the individual certifications.

Formed steel shingles are composed of galvanized sheet steel with various surface treatments including grit surfacing, laid in accordance with the instruction sheets accompanying packages. The shingles are limited to 12.7 mm minimum plywood decks with an underlayment of one layer of certified 12.7 mm gypsum wallboard and one layer of labelled organic felt.

Class B — Prepared Roof Coverings

Formed steel shingles are composed of galvanized sheet steel with various surface treatments including grit surfacing, laid in accordance with the instruction sheets accompanying packages. The shingles are limited to 12.7 mm minimum plywood decks provided with a layer of 0.05 mm polyethylene-coated steel foil, and to inclines sufficient to permit drainage.

Asphalt shingles are composed of matts that have been saturated and coated on both sides with asphalt and surfaced with inorganic granules laid in accordance with the instruction sheets with each package. The shingles are limited to the minimum thickness of roof deck specified and capable of receiving and retaining nails.

Class C — Prepared Roof Coverings

Fire-retardant-treated red cedar shingle and shake coverings are composed of factory-treated red cedar shingles and shakes laid in accordance with instruction sheets accompanying bundles. The coverings are limited to roof decks capable of receiving and retaining nails and to inclines sufficient to permit drainage.

Asphalt shingles are composed of matts that have been saturated and coated on both sides with asphalt and surfaced with inorganic granules laid in accordance with the instruction sheets with each package. The shingles are limited to the minimum thickness of roof deck specified and capable of receiving and retaining nails.

ADDITIONAL INFORMATION

For additional information, see Roof Covering Materials (TEVTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S107, "Method of Fire Tests for Roof Coverings."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Prepared Roof Covering Material."

BUILT-UP ROOF COVERING MATERIALS (TGFUC)

GENERAL

This category covers materials intended for built-up roof coverings which provide Classes A, B and C coverings on combustible solid decks (wood – 19 mm thick sheathing boards or plywood), unless otherwise indicated. Classifications are applicable to roof-covering systems indicated in the individual certifications.

The roof-covering classifications apply only to coverings composed of labelled materials assembled as described below; flashings and trimmings

Built-Up Roof Covering Materials (TGFUC)−*Continued*

being the same as or not less than the equivalent of the roof coverings in each class, or of copper or galvanized steel having a minimum thickness of 0.5 mm.

Asphalt Organic-Felt Coverings with Hot-Mopping Asphalt — Classes A and B

These coverings are composed of asphalt-saturated organic-felt and/or combinations of cap or base sheets (saturated felts that are asphalt-coated on one or both sides) applied with hot-mopping asphalt as noted below (minima specified) and surfaced with approximately 150 kg of roofing gravel or crushed stone or 150 kg of crushed slag per 10 m^2 of finished roof embedded in a flood coat of hot-mopping asphalt. The roofing gravel, crushed stone, or slag is to be dry, relatively free from dirt and dust, and graded in size from 6 to 16 mm. This covering is limited to roof decks having inclines not exceeding 1:4.

Asphalt Organic-Felt Coverings with Hot-Mopping Asphalt — Class C

These coverings are composed of asphalt-saturated organic-felt combinations of cap or base sheets (saturated felts that are asphalt-coated on one or both sides) applied with hot-mopping asphalt as noted below (minima specified). Coverings are surface-finished with a cold-application coating. See the individual certifications for coating designations and limitation for inclines on which these coverings are intended to be applied.

or

Ballasted as per Classes A and B asphalt organic-felt coverings for roof deck inclines not exceeding 1:4.

The first layer of the constructions noted below are generally nailed to combustible decks through tin discs and hot-mopped to noncombustible decks. Succeeding layers are hot-mopped in place.

Class A

1. Five layers of perforated Type 15 felt.
2. Four layers of Type 15 felt.
3. One layer of Type 30 and two layers of Type 15 felt.
4. One layer of Type 15 felt and two layers of Type 15 or 30 cap or base sheets.
5. Three layers of Type 15 or 30 cap or base sheets.
6. Three layers of Type 15 felt. Limited to noncombustible roof decks.

Class B

1. Four layers of perforated Type 15 felt.
2. Three layers of Type 15 felt.
3. Two layers of Type 15 or 30 cap or base sheets.

Class C

1. Three layers of Type 15 felt.
2. One layer of Type 30 and one layer of Type 15 felt.
3. Two layers of Type 15 or 30 cap or base sheets.
4. Two layers of Type 15 felt and one layer of Type 15 or 30 cap or base sheets.

Tar Organic-Felt Coverings — Classes A and B

These coverings are composed of tar-saturated organic felt in combinations as noted below, applied with hot-mopping coal tar pitch (minima specified), surfaced with approximately 200 kg of roofing gravel or crushed stone or 150 kg of crushed slag per 10 m^2 of finished roof embedded in a flood coat of hot-mopping coal tar pitch. The roofing gravel, crushed stone, or slag is to be dry, relatively free from dirt and dust, and graded in size from 6 to 16 mm. For exceptions, see the individual certifications. This coating is limited to roof decks having inclines not exceeding 0.25:1. It is recommended that wood decks be covered with building paper before application of the roof covering.

Class A

1. Four layers of Type 15 organic felt.
2. Three layers of Type 15 organic-felt. Limited to noncombustible roof decks.

Class B

1. Three layers of Type 15 organic-felt.

See the individual certifications for roof-covering assemblies not covered by the above.

RELATED PRODUCTS

Products used in roof deck constructions and investigated for performance under internal fire exposure are covered under Roof Deck Construction Materials (TGKXC).

ADDITIONAL INFORMATION

For additional information, see Roof-covering Materials (TEVTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S107, "Method of Fire Tests for Roof Coverings."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Built-Up Roof Covering Material."

ROOF DECK CONSTRUCTIONS (TGKXC)

GENERAL

This category covers roof deck constructions as identified by the construction numbers noted below. Tests have demonstrated that they will not contribute materially to flame spread on the underside when subjected to a controlled, standardized, fire exposure.

ULC's tunnel furnace normally used to develop surface burning characteristics of individual building materials has been adapted to tests of these assemblies. The limits of flame spread applicable to construction described in this category were established by analysis of results of tunnel furnace tests of other constructions which, by large-scale fire tests and by experience in actual installations, were known to have contributed extensively to flame spread or, conversely, were regarded as being acceptable from this standpoint.

The primary construction considered for the purpose of establishing limits was a steel roof deck, without vapour barrier or adhesives, insulated with 25-mm thick plain vegetable fibreboard mechanically attached and covered with a 4-ply built-up roof covering with gravel surfacing. As one requisite of Listing under this category, roof deck constructions shall not develop flame spread on the underside in excess of the limits established in tests of the above assembly.

While the tunnel furnace is used to investigate these constructions, these Listings should not be confused with those appearing under either Classification of Materials as to Surface Burning Characteristics (BIKTC) or Fire Resistance Ratings (BXUVC). The surface burning characteristics is a comparative evaluation of materials (occasionally with facings or backing) with respect to flame spread, fuel contributed, and smoke developed. The fire-resistance classification is the time rating of an assembly with respect to resistance to flame passage, heat transfer and maintenance of structural integrity.

Roof deck constructions are various assemblies of materials as described below, Listed on the basis of specific requirements for maximum flame spread on the underside of the assembly within definite time limits. These constructions differ from materials covered under BIKTC in, that in the latter, materials are assigned comparative numerical values. They also differ from assemblies covered under BXUVC since temperature transmission through roof deck constructions and structural performance under load are not measured nor are time ratings assigned.

An investigation of a roof deck construction primarily determines whether the contribution to an igniting fire by any or all of the materials in the assembly is at a sufficient rate to cause propagation of flame on the underside, in excess of the established limits.

Authorities Having Jurisdiction should be consulted before installation.

It should be noted that roof deck constructions are placed in two groups. Constructions beginning with Construction No. C1 pertain to assemblies using metallic decks, and those beginning with Construction No. CNM1 pertain to assemblies using nonmetallic decks.

The specifications for the materials and their assembly are important details in limiting the flame spread on the underside of roof deck constructions. Follow-Up Service of Underwriters Laboratories of Canada is available for those materials so designated in the construction described. The individual Listings of these materials are covered under Roof Deck Construction Materials (TGYVC). Products so Listed and bearing the label or Listing Mark of Underwriters Laboratories of Canada have been subject to countercheck of the specifications established on the basis of the materials used in the construction tested.

REQUIREMENTS

Roof deck constructions are evaluated in accordance with the requirements contained in CAN/ULC-S126, "Standard Method of Test for Fire Spread Under Roof Deck Assemblies."

ROOF DECK CONSTRUCTION MATERIALS (TGYVC)

GENERAL

This category covers roof deck construction materials designated for use in specific constructions as described under Roof Deck Constructions (TGKXC). These materials may be vapour barriers, insulations and adhesives applied over steel roof decks and underneath roof-covering materials. They also include fire-retardant-treated lumber and plywood used as deck material.

ADDITIONAL INFORMATION

For additional information, see Roof Deck Constructions (TGKXC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S126, "Standard Method of Test for Fire Spread Under Roof Deck Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Roof Deck Construction Material."

Roof Deck Construction Materials (TGYVC)–*Continued*

products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Roof Deck Construction Material."

SAFES AND CHESTS (TOXVC)

NIGHT DEPOSITORIES, BURGLARY-RESISTANT (TPZRC)

GENERAL

This category covers night depositories that offer a limited or moderate degree of protection against expert burglary by common tools and cutting torches. The night depositories are classified as follows:

Class C1 – at least 15 minutes protection.

Class C2 – at least 30 minutes protection.

Night depositories are designed to receive deposits after banking hours from outside the bank building. They consist of a depository head, connecting chute, security container and, optionally, a secondary-defence device.

The depository head incorporates a limited degree of theft resistance to reduce the possibility of removing the deposits through the opening using lines, wires, hooks, small pries, wrenches and screwdrivers in a relatively quiet attack.

The secondary-defence device is a device which is activated in the event that the depository head is forcibly removed from the building structure in which it is installed.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S330, "Burglary Resistant Night Depositories."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Night Depository, Burglary-Resistant."

SAFES, TOOL RESISTANT (TQMZC)

GENERAL

This category covers tool-resistant safes that offer a limited degree of protection against expert burglary by common tools. The safes are classified as follows:

A. Tested on six sides:
   1. Class TL-15X6 – at least 15 minute protection.
   2. Class TL-30X6 – at least 30 minute protection.

B. Tested on side containing the door:
   1. Class TL-15 – at least 15 minute protection.
   2. Class TL-30 – at least 30 minute protection.

Safes with single-side protection, or weighing less than 340 kg, are equipped with anchors and instructions for anchoring in larger safes or concrete enclosures.

All safes have a Group 1 or 1R combination lock and are equipped with relocking devices.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S324, "Burglary Resistant Safes."

Safes covered under this category are subject to a retest program to confirm continued compliance with existing published attack test requirements. The frequency of the retest(s) is every seven (7) years following the original year tested.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Safe, Tool-Resistant."

TORCH- AND TOOL-RESISTANT SAFES, CLASS TRTL-30X6 (TROVC)

GENERAL

This category covers combination-locked chests and safes designed to offer protection against entry by common mechanical tools, electrical tools, cutting torches, or any combination of these means.

Performance tests have been conducted against the entire unit.

These safes weigh at least 750 lbs.

Torch- and Tool-Resistant Safes, Class TRTL-30X6 (TROVC)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S324, "Burglary Resistant Safes."

Safes covered under this category are subject to a retest program to confirm continued compliance with existing published attack test requirements. The frequency of the retest(s) is every seven (7) years following the original year tested.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Torch- and Tool-Resistant Safe, Class TRTL-30X6."

SIGNAL APPLIANCES FOR USE IN HAZARDOUS LOCATIONS (UCEVC)

SPEAKERS AND ACCESSORIES, FIRE ALARM, FOR USE IN HAZARDOUS LOCATIONS (UEAYC)

USE

This category covers speakers and their accessories intended for use in fire alarm and/or emergency communication systems, and for general signalling duties in hazardous (classified) locations.

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/ULC-S541, "Speakers for Fire Alarm Systems, Including Accessories"
ULC-S527, "Standard for Control Units for Fire Alarm Systems"
CSA-C22.2 No. 25, "Enclosures for Use in Class II Groups E, F, and G Hazardous Locations"
CSA-C22.2 No. 30, "Explosion-Proof Enclosures for Use in Class I Hazardous Locations"
CAN/CSA-C22.2 No. 157, "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations"

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Speaker for Fire Alarm System," or "Speaker Accessory for Fire Alarm System."

VISUAL AND VISUAL-AUDIBLE SIGNAL APPLIANCES, FIRE ALARM, FOR USE IN HAZARDOUS LOCATIONS (UEJZC)

GENERAL

This category covers visual-signal appliances and appliances that provide a visual and visual-audible signal in hazardous (classified) locations.

The visual signal is a flashing light having a minimum effective luminous intensity of 2 cd. A xenon strobe lamp with a suitable diffuser is commonly employed for the light source. The flash rate falls in the range of one to two flashes per second.

These appliances may incorporate bells, sirens, horns, speakers, etc., and are rated 85 dB(A) at 3.048 m.

The suitability of a visual-signal appliance for any specific area is dependent on the maximum ambient light level, the reflectivity of interior surfaces, and the effective luminous intensity of the flash. Maximum ambient light levels will generally occur in areas subject to direct sunlight. Selection and location of visual-signal appliances should be based on an engineering survey of all factors involved, including the directivity aspects of signal perception.

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories"
CAN/ULC-S526, "Visible Signal Devices for Fire Alarm Systems, Including Accessories"
CAN/ULC-S541, "Speakers for Fire Alarm Systems, Including Accessories"
ULC-S527, "Standard for Control Units for Fire Alarm Systems"

Visual and Visual-Audible Signal Appliances, Fire Alarm, for Use in Hazardous Locations (UEJZC)−*Continued*

CSA-C22.2 No. 25, "Enclosures for Use in Class II Groups E, F, and G Hazardous Locations"
CSA-C22.2 No. 30, "Explosion-Proof Enclosures for Use in Class I Hazardous Locations"
CAN/CSA-C22.2 No. 157, "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations"

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Visual and Visual-Audible Signal Appliance, Fire Alarm for Use in Hazardous Locations."

AUDIBLE-SIGNAL APPLIANCES, FIRE ALARM, FOR USE IN HAZARDOUS LOCATIONS (UGKZC)

USE

This category covers electrically-operated bells, buzzers, horns, sirens, and similar signal-sounding devices intended for fire-protective signalling service and for general signalling duties in hazardous (classified) locations.

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories"
CSA-C22.2 No. 25, "Enclosures for Use in Class II Groups E, F, and G Hazardous Locations"
CSA-C22.2 No. 30, "Explosion-Proof Enclosures for Use in Class I Hazardous Locations"
CAN/CSA-C22.2 No. 157, "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations"

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Audible Signal Appliance, Fire Alarm."

FIRE ALARM DEVICES FOR USE IN HAZARDOUS LOCATIONS (UHMVC)

USE

This category covers coded and noncoded fire alarm and fire and watch boxes intended for use with private fire alarm systems in hazardous (classified) locations.

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/ULC-S528, "Manual Stations for Fire Alarm Systems, Including Accessories"
CSA-C22.2 No. 25, "Enclosures for Use in Class II Groups E, F, and G Hazardous Locations"
CSA-C22.2 No. 30, "Explosion-Proof Enclosures for Use in Class I Hazardous Locations"
CAN/CSA-C22.2 No. 157, "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations"

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Alarm Device for Use in Hazardous Locations."

FLAME DETECTORS, FIRE ALARM, FOR USE IN HAZARDOUS LOCATIONS (UIAZC)

GENERAL

This category covers devices intended to detect the presence of a flame but discriminate against other forms of light-producing processes, such as welding, grinding, luminaires, etc., in hazardous (classified) locations. The signalling contacts of the detector are intended to be connected to the circuit conductors of a fire-protection signalling system.

Intrinsically safe equipment is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

REQUIREMENTS

The basic standards used to investigate products in this category are:

Flame Detectors, Fire Alarm, for Use in Hazardous Locations (UIAZC)−*Continued*

CAN/ULC-S529, "Smoke Detectors for Fire Alarm Systems"
ULC/ORD-C386, "Flame Detectors"
CSA-C22.2 No. 25, "Enclosures for Use in Class II Groups E, F, and G Hazardous Locations"
CSA-C22.2 No. 30, "Explosion-Proof Enclosures for Use in Class I Hazardous Locations"
CAN/CSA-C22.2 No. 157, "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations"

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flame-Automatic Fire Detector for Use in Hazardous Locations."

THERMOSTATS, FIRE ALARM, FOR USE IN HAZARDOUS LOCATIONS (UIRVC)

GENERAL

This category covers fire alarm thermostats intended for use in hazardous (classified) locations. This category covers the thermostats only, not the wiring or other appliances of which they form a part.

Typically, thermostats are intended for locations where normal ceiling temperatures prevail (below 38°C).

Locations where temperatures at ceiling are likely to be unduly high, from sources of heat other than fire conditions, demand special consideration in selecting thermostats having the proper temperature rating to guard against false alarms from premature operation. Usual practice requires a margin of 17 to 36°C between the maximum ambient ceiling temperature and operating temperature of the thermostat. The following are suggestions for usual occupancies:

For ceiling temperatures not exceeding 38°C, install 57 to 74°C rated thermostats.
For ceiling temperatures exceeding 38°C, but not 66°C, install 85 to 100°C rated thermostats.

The spacings specified are for flat, smooth ceiling construction of ordinary height, generally regarded as the most favourable condition for distribution of heated air currents resulting from a fire. Under other forms of ceiling construction, reduced spacing of thermostats may be required.

The placement and spacing of thermostatic devices should be based on consideration of the ceiling construction, ceiling height, room or space areas, space subdivisions, the normal room temperature, possible exposure of the devices to abnormal heat, such as may be produced by manufacturing processes or equipment and to draft conditions likely to be encountered at the time of a fire.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/ULC-S530, "Heat Actuated Fire Detectors for Fire Alarm Systems"
CSA-C22.2 No. 25, "Enclosures for Use in Class II Groups E, F, and G Hazardous Locations"
CSA-C22.2 No. 30, "Explosion-Proof Enclosures for Use in Class I Hazardous Locations"
CAN/CSA-C22.2 No. 157, "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations"

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Thermostat, Fire Alarm."

SMOKE CONTROL SYSTEM EQUIPMENT (UUKLC)

GENERAL

This category covers electrical units intended to be installed in conjunction with heating, ventilating, and air conditioning (HVAC) equipment to form a system for controlling the flow of smoke in a building during a fire condition in accordance with the Fire Safety in High Buildings section of the "National Building Code of Canada."

System equipment may consist of such devices as a main system control unit, remote control units, or fire fighter's smoke control stations. The control unit may be completely stand-alone or integral within a fire alarm system control unit. The Listee furnishes installation instructions necessary for the interconnection of the smoke control equipment, HVAC equipment, and fire alarm system equipment.

Smoke control systems are specially designed to meet the specific needs of an individual building and its occupants, and it is the responsibility of the Authority Having Jurisdiction to determine the acceptability of the system for its intended function.

This category does not cover devices such as fans, dampers, motors, etc., which perform the actual smoke control functions.

Components or modules of the control unit with modular construction that may be shipped separately to the site or that are eligible for field replacement are identified by component labels (see **ULC MARK** below).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S527, "Control Units for Fire Alarm Systems," and ULC/ORD-C100, "Smoke Control System Equipment."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Smoke Control System Equipment," "Component for Smoke Control System Equipment," "Fire Alarm Equipment," "Fire Alarm Subassembly," "Fire Alarm and Security Equipment," "Fire Alarm and Security Subassembly," or other appropriate product name as shown in the individual Listings.

FIRE ALARM SYSTEMS, INSPECTION AND TESTING (UWJSC)

GENERAL

This category covers alarm service companies involved with the testing and inspection of fire alarm systems, and which are eligible to issue ULC certificates for the inspection and testing of fire alarm systems.

The alarm service company issuing a certificate bears the responsibility for the periodic inspection and testing of fire alarm systems, as well as the keeping of records with respect to these activities. All required inspection and testing is intended to be provided for in an appropriate contract between the alarm service company and the subscriber.

System documentation is provided by the alarm service company for a certificated system and includes specification documents and records of the initial inspection and test, and any subsequent inspections and tests.

The locations at which Listed alarm service companies maintain service centres are shown in the individual Listings.

Underwriters Laboratories of Canada makes no representations or warranties, expressed or implied, that the alarm system will prevent any loss by fire, smoke, water damage or otherwise, or that the system will provide the protection for which it is installed or intended. The certificate is evidence that the system has been inspected and tested by a ULC Listed alarm service company and that it is subject to countercheck field inspections by ULC representatives. ULC does not assume or undertake to discharge any liability for any loss which may result from failure of the equipment, incorrect certification, non conformity with requirements, cancellation of the certificate or withdrawal of the alarm service company from Listing by ULC prior to the expiration date appearing on the certificate. If an installation is found not in conformity with requirements, it shall be corrected or the certificate is subject to cancellation.

To provide recognition of the degrees of competence required to inspect and test fire alarm systems of different levels of complexity, each Listed fire alarm service centre is identified with the highest level of complexity for which it has been certified.

The levels of complexity of fire alarm systems are defined as follows:

- **LEVEL 1** — a fire alarm system of a generic type which does not exceed twenty four (24) zones;
- **LEVEL 2** — a fire alarm system of the Level 1 type which exceeds twenty four (24) zones;
- OR
- — a fire alarm system manufactured to a specification that may include programming of the operating system;
- **LEVEL 3** — a fire alarm system of the Level 2 type which includes voice alarm features;
- **LEVEL 4** — a fire alarm system, computer based, having multiple control units networked or multiplexed together.

REQUIREMENTS

The basic standard used to investigate the services in this category is CAN/ULC-S536, "Inspection and Testing of Fire Alarm Systems."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to iden-

tify services which are under its Listing and Follow-Up Service. The Listing Mark for these services includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the service name.

SPRINKLER SYSTEM AND WATER SPRAY SYSTEM DEVICES (VDGTC)

This category covers devices and equipment intended for use in sprinkler systems and water spray systems.

In addition to ANSI/NFPA 13, "Standard for the Installation of Sprinkler Systems," ANSI/NFPA 15, "Standard for Water Spray Fixed Systems for Fire Protection," and ANSI/NFPA 16, "Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems," Authorities Having Jurisdiction should be consulted before installation.

AIR COMPRESSORS, SPECIAL TYPE (VDURC)

USE

This category covers special units intended for use with sprinkler equipment of special designs.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C753, "Guide for the Investigation of Alarm Accessories for Automatic Water-Supply Control Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Air Compressor, Special Type."

GAUGES, PRESSURE (VEVXC)

USE

This category covers nonrecording spring pressure gauges of the Bourdon spring, single-tube type. They are designed for use in automatic and open sprinkler systems, standpipe systems and similar types of fire fighting equipment.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C393, "Indicating Pressure Gauges for Fire Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gauge, Pressure."

HANGERS, PIPE (VFXTC)

GENERAL

This category covers pipe hangers intended for supporting piping in sprinkler systems, water spray systems and other piping systems used for fire protection service.

Pipe hangers are designed for the following rod and pipe sizes:

Rod Size, NPS	Nom Pipe Size
3/8	3/4 to 4 inclusive
1/2	5 to 8 inclusive
5/8	10 and 12

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C203, "Pipe Hanger Equipment for Fire Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these

Hangers, Pipe (VFXTC)−*Continued*

products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pipe Hanger."

NOZZLES, SPRAY TYPE, FIXED (VGYZC)

This category covers spray nozzles that discharge water in a specific spray pattern as defined by the manufacturer. Spray nozzles consist of the automatic or nonautomatic (open) type, and are intended for installation in fixed piping systems.

Nozzles, Automatic Pattern (VHMXC)

GENERAL

This category covers automatic spray nozzles assembled of frames and operating parts, in some cases, quite similar to those of automatic sprinklers, and with deflectors which may or may not be shaped similar to those of automatic sprinklers. Identification by Authorities Having Jurisdiction may require check of the markings on the nozzles against the "Marking" information given in the individual certifications.

Temperature Ratings — The standard temperature ratings of automatic spray nozzles are as follows:

Rating	Operating Temp of Fusible Element, °C	Colour	Max Normal Temp at Point of Installation, °C
Ordinary	57-66-71-74	Uncoloured*	38
Intermediate	79-100	White*	66
High	121-138-141	Blue	107
Extra high	163-171-182	Red	149
Very extra high	204-213	Green	191
	232	Orange	218
	260	Orange	246

* The 57°C spray nozzles of some manufacturers are half black and half uncoloured.

The 79°C nozzles of the same manufacturers are yellow.

The frame arms only are coloured to show temperature rating.

Manufacturers are able to supply these automatic water spray nozzles with their operating parts omitted.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199, "Automatic Sprinklers for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Automatic Pattern Spray Type Fixed Nozzle."

Nozzles, Non-automatic Pattern (VIAVC)

GENERAL

This category covers water spray nozzles of the non-automatic (open) pattern. These nozzles are of a distinctive shape that differentiate them from automatic sprinklers unless otherwise noted in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199, "Automatic Sprinklers for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Non-Automatic Pattern Spray Type Fixed Nozzle."

AIR PRESSURE MAINTENANCE DEVICES, AUTOMATIC (VIOTC)

GENERAL

This category covers automatically controlled air or nitrogen supply valves or assemblies of components to be used to maintain desired pres-

Air Pressure Maintenance Devices, Automatic (VIOTC)−*Continued*

sure in dry-pipe sprinkler systems and in special sprinkler systems employing supervising pressure by feeding air or nitrogen as needed from a dependable pressure source. The suitability for air or nitrogen is indicated in the individual certifications and is marked on each valve or assembly.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, ''Guide for the Investigation of Dry Pipe, Deluge and Pre-Action Valves for Fire-Protection Service.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Air Pressure Maintenance Device, Automatic.''

QUICK OPENING DEVICES, ACCELERATORS AND EXHAUSTERS (VJPZC)

USE AND INSTALLATION

This category covers auxiliary attachments for dry-pipe valves designed to reduce time delay in operation of the valve after the opening of one or more sprinklers.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C193, ''Guide for the Investigation of Alarm Valves for Fire-Protection Service.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Quick Opening Device,'' ''Accelerator'' or ''Exhauster.''

SPECIAL SYSTEM WATER CONTROL VALVES AND SYSTEM ACCESSORIES (VKRVC)

Special System Water Control Valves, Class I and Clean Agent Extinguishing System Unit Assemblies (VKYPC)

GENERAL

This category covers assemblies comprised of a single enclosure that houses three main assemblies which include 1) electronic control and signaling equipment, 2) a fire-suppression-system water control valve assembly, and 3) a clean agent extinguishing system unit, connected and assembled in the enclosure and intended for connection to a water supply, electrical power connection, water system piping, clean agent system piping, and heat- or smoke-detection devices.

The water-based fire-suppression assembly consists of a fire main control valve, water flow control valve (deluge type), electrically-operated solenoid valves, check valve, trim and drain valves, gauges, supervisory devices and special system accessories as indicated in the individual certifications. The water-based fire-suppression assembly may incorporate products covered under Special System Water Control Valves, Class I (VLFTC), Check Valves (HMERC), Valves, Trim and Drain Certified for Canada (VQGU7), Gauges, Pressure (VEVXC), Extinguishing System Attachments (USQTC), Switches, Pressure (VOXZC), Accessories for Special Systems, Class III Ordinary Locations (VLTRC), and other products as indicated in the individual certifications. The water-based fire-suppression assembly is rated for a maximum pressure of 1206 kPa unless otherwise indicated in the individual certifications.

Clean agent extinguishing system unit assemblies are covered under Clean Agent Extinguishing System Units (GAQFC).

Electronic control and signaling assemblies are covered under Control Units, Releasing Device Service (SYZVC).

Special System Water Control Valves, Class I and Clean Agent Extinguishing System Unit Assemblies (VKYPC)−*Continued*

Authorities Having Jurisdiction should be consulted regarding installation, operational programming and approval of working plans before installation of the assemblies.

These assemblies are intended to be installed in accordance with the manufacturer's installation instructions and the applicable requirements of the National Fire Protection Association, including ANSI/NFPA 13, ''Installation of Sprinkler Systems,'' ANSI/NFPA 15, ''Water Spray Fixed Systems for Fire Protection,'' and ANSI/NFPA 25, ''Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.''

Clean agent extinguishing systems are intended to be designed, installed and maintained in accordance with ANSI/NFPA 2001, ''Clean Agent Fire Extinguishing Systems,'' and the manufacturer's installation, operation and maintenance manual.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C260, ''Guide for the Investigation of Dry-Pipe, Deluge and Pre-Action Valves for Fire-Protection Service,'' UL 2127, ''Inert Gas Clean Agent Extinguishing System Units,'' UL 2166, ''Halocarbon Clean Agent Extinguishing System Units,'' ULC-S527, ''Control Units for Fire Alarm Systems,'' and ANSI/UL 864, ''Control Units and Accessories for Fire Alarm Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Special System Water Control Valve and Clean Agent Extinguishing System Unit Assembly.''

Special System Water Control Valves, Class I (VLFTC)

GENERAL

This category covers valves intended for use in controlling water flow to deluge, pre-action, and foam-water sprinkler systems and water spray systems. Small sizes of the valves may be useful as automatic cold weather valves and for installation on larger dry-pipe valves as a means of triggering their operation.

These valves are installed with a number of accessory devices to form systems.

RELATED PRODUCTS

The following accessory devices are useful in other types of systems in addition to those covered under this category:

1. Air compressors for supervisory air supply (see VDURC)
2. Air pressure maintenance devices (see VIOTC)
3. Alarm devices – Pressure switches (electric) – Water motor and gongs (see VPLXC)
4. Dry-pipe valves (see VPZVC)
5. Releasing devices (see SZNTC)
6. Sprinkler alarm and supervisory devices (see USQTC)
7. Automatic and open sprinklers (see VNIVC)
8. Foam-water sprinklers (see VNWTC)
9. Fire alarm thermostats (see UIRVC)
10. Quick-opening devices (see VJPZC)
11. Automatic and nonautomatic water spray nozzles (see VHMXC and VIAVC, respectively)

Several accessory devices designed especially for these special systems are certified as ''Accessories for Special Systems'' and are covered under Accessories for Special Systems, Class III Ordinary Locations (VLTRC).

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, ''Guide for the Investigation of Dry Pipe, Deluge and Pre-Action Valves for Fire-Protection Service.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Special System Water Control Valve, Class I.''

Special System Water Control Valves, Class II (VLMTC)

USE

This category covers valves intended for use as pressure control and/or indicator-type water flow valves for fire extinguishing systems.

Special System Water Control Valves, Class II (VLMTC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C312, "Check Valves for Fire Protection Service," and ANSI/UL 1739, "Pilot-Operated Pressure-Control Valves for Fire-Protection Service." The following requirements from ANSI/UL 1739 supersede or are added to the applicable requirements in ULC/ORD-C312: ANSI/UL 1739 section or paragraph reference, 5, 8, 12.4, 12.5, 14.1, 16, 17, 18, 19, 22, 23, 24.3, 24.4, 25.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Special System Water Control Valve, Class II."

Accessories for Special Systems, Class III Ordinary Locations (VLTRC)

For Use in Ordinary Locations

USE

This category covers accessory units intended for use in special-type systems.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, "Guide for the Investigation of Dry Pipe, Deluge and Pre-Action Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Accessory for Special Systems."

Expansion Chambers (VLTZC)

USE AND INSTALLATION

This category covers expansion chambers intended to be installed in fire protection service systems incorporating a backflow prevention device and supplying water, with or without antifreeze, up to the maximum rated working pressure and limitations as specified in the individual certifications. When properly sized and pre-charged with air, expansion chambers are capable of compensating for the effects of thermal expansion of the system solution.

These expansion chambers are intended for use and for installation in accordance with ANSI/NFPA 13, "Standard for the Installation of Sprinkler Systems."

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Expansion Chamber."

SPRINKLERS, AUTOMATIC, OPEN AND OUTSIDE (VNIVC)

GENERAL

This category covers automatic sprinklers, which are heat-sensitive devices for automatically distributing water on a fire in sufficient quantity either to extinguish it or prevent its spread. Open sprinklers serve the same function but operate under separate automatic or manual control. Outside sprinklers are open sprinklers intended for use in the protection of windows, walls and roofs from exposure fires.

Sprinklers are designed for upright, pendent or horizontal installation as indicated in the individual certifications. "Old style" sprinklers may be installed in either upright or pendent positions.

Sprinklers may be utilized under "ordinary" or "special service" conditions. Ordinary conditions are generally considered to include ordinary

Sprinklers, Automatic, Open and Outside (VNIVC)−*Continued*

hazards and encompass the majority of installations. Special-service conditions include those where special water distribution patterns or flows are required or where unusual hazards, high ambient temperatures or corrosive atmospheres exist.

Special-service sprinklers should only be made by qualified fire protection specialists. Extended-coverage sidewall sprinklers are intended for use in light hazard occupancies only where they are installed from 100 to 150 mm below the ceiling, unless otherwise indicated in the individual certifications. The coverage area, minimum flow rate and orifice size are specified in the individual certifications. When extended coverage sprinklers are installed in multiple sprinkler applications per room, the maximum allowable ceiling height is intended to be 2.1 m unless otherwise indicated in the individual certifications.

Residential sprinklers are designed to discharge water, at the pressures indicated in the individual certifications, in specific patterns and flows over designated areas for the control of fire in one- and two-family dwellings and mobile homes.

Unless otherwise indicated, sprinklers have nominal orifice of 13 mm diameter or provide flows equivalent to a nominal 13 mm variable orifice.

Small-orifice sprinklers are intended for light hazard occupancies unless otherwise indicated in the individual certifications. They have a pintle extending above the deflector and the nominal orifice size stamped or cast on the wrench flat.

Sprinklers are manufactured in various temperature ratings. The common ratings in use are as follows:

Rating	Operating Temp, °C	Colour Code	Max Normal Temp at Point of Installation, °C
Ordinary	57 to 77	Uncoloured*	38
Intermediate	79 to 107	White	66
High	121 to 149	Blue	107
Extra high	163 to 191	Red	149
Very extra high	204 to 240	Green	191
Ultra high	260 to 302	Orange	246
Ultra high	343	Orange	329

* Occasionally, 57°C sprinklers are colour-coded black.

The colour code appears normally on the sprinkler frame arms only.

Ceiling (flush) type sprinklers with cover plates are intended to be installed in accordance with the temperature rating of the sprinkler, not the temperature rating of the ceiling cover plate.

The following abbreviations are used in the individual certifications:

Adj. – Adjustable
Br. – Brass
Bl. – Black plated (nickel/tin)
C – Chrome plated
Cad. – Cadmium plated
Calc. Chl. – Calcium chloride
Conc. – Concealed
CR – Corrosion resistant
DP – Dry pendent
EC – Extended coverage
En. – Enamel coated
En./L – Enamel over lead coating
Fl. – Flush
H – Horizontal
Int. – Intermediate level
L – Lead coated
Lacq. – Lacquer coated
LH – Light hazard
N – Natural
N. Adj. – Nonadjustable
Ni. – Nickel
Orf. – Orifice
P – Pendent
Pol. – Polyester
QR – Quick release
RS – Rack storage
Rec. – Recessed
Res. – Residential
Sdw. – Sidewall
Std. – Standard
Tf. – Teflon
U – Upright
W – Wax coated
W/L – Wax over lead coating
Win. – Window

Sprinklers, Automatic, Open and Outside (VNIVC)−*Continued*

The individual certifications are presented in metric SI units. The following equivalents of frequently used figures are provided for immediate reference.

Temperatures		Lineal Dimensions	
°C	°F	mm	in.
57	135	6.4	1/4
71	160	7.9	5/16
74	165	9.5	3/8
77	170	11.1	7/16
79	175	12.7	1/2
100	212	13.5	17/32
107	225		
121	250	m	ft
141	286	2.7	9
149	300	3.1	10
163	325	3.7	12
182	360	4.3	14
191	375	4.9	16
204	400	5.5	18
246	475	6.1	20
260	500	6.7	22
302	575	7.3	24
	343	650	

Pressure		Flow	
kPa	psi	L/min	US gpm
114	16.5	76	20
152	22.0	95	25
228	33.0	114	30
283	41.0	133	35
1200	175.0	151	40

Sprinklers are marked to indicate position of installation, temperature ratings, nonstandard orifices, year of manufacture, and other information relevant to their application. Small orifice sprinklers, and large orifice sprinklers with 1/2 NPS inlet threads, are provided with a pintle extending above their deflectors.

Authorities Having Jurisdiction should be consulted as to the proper type, pattern and temperature rating of sprinklers required in any given location.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199, ''Automatic Sprinklers for Fire-Protection Service.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Sprinkler, Automatic, Open and Outside.''

ATTACHMENTS TO SPRINKLER SYSTEMS (VNSYC)

USE AND INSTALLATION

This category covers devices installed as part of water-spray systems intended to protect restaurant-type cooking equipment. They are placed in a branch line, serving the water-spray nozzles protecting the cooking and exhaust equipment, to monitor the pressure and flow within the system. In event of nozzle activation, a water-flow sensing device actuates a solenoid valve or electrical contactor, shutting off the source of fuel or energy to the cooking equipment and activates alarm systems.

These devices are intended to be used only with those sprinklers or spray nozzles indicated in the manufacturer's installation instructions.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

Attachments to Sprinkler Systems (VNSYC)−*Continued*

The basic requirements used to investigate products in this category are contained in UL Subject 199B, ''Outline of Investigation for Control Cabinets for Automatic Sprinkler Systems Used for Protection of Commercial Cooking Equipment.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Attachment to Sprinkler Systems.''

SPRINKLER SYSTEM ACCESSORIES (VNTWC)

Plastic Pipe and Fittings for Sprinkler Systems (VIWTC)

USE AND INSTALLATION

This category covers plastic pipe and fittings for sprinkler systems intended for use in light-hazard occupancies and residential occupancies.

Plastic pipe and fittings are intended for use in wet-pipe systems and are not suitable for outdoor applications. Their use in ceiling spaces above non-sprinklered areas has not been investigated.

As the performance of plastic pipe and fittings can be adversely affected by elevated temperatures, it is important that they not be installed where ambient temperatures normally exceed the maximum temperature ratings specified in the individual certifications.

Plastic pipe and fittings are intended to be installed in accordance with the manufacturer's installation instructions and the ''National Building Code of Canada.'' Special installation and design criteria relative to pipe hanger spacings, piping and sprinkler restraint, sprinkler temperature ratings, piping location, testing procedures and friction loss characteristics are specified in the manufacturer's installation instructions provided with the pipe and fittings.

Authorities Having Jurisdiction should be consulted before installation.

Protected Installations — It is important that plastic pipe and fittings, when used in conjunction with standard-response sprinklers, be separated from the area served by the sprinkler system, by ceilings, walls or soffits consisting of, as a minimum, lath and plaster, 9 mm thick gypsum board, 13 mm thick plywood, or a suspended membrane ceiling with lay-in panels or tiles, classified with respect to surface burning characteristics, having a mass of not less than 1.7 kg/m^2 and installed in steel suspension grids.

During remodelling or ceiling repair operations, precautions should be taken to properly shield the pipe from the protected space. The provision of supplementary fire protection during such operations is strongly recommended.

Exposed Installations — Plastic pipe and fittings can be used without ceiling protection (exposed) where indicated in the individual certifications. Such use is limited to installations under smooth, flat, horizontal, fixed ceilings in conjunction with quick-response or residential sprinklers, maximum rating 77°C.

System Risers — When protected, plastic pipe and fittings can also be used as system risers.

Underground Service — Where indicated in the individual certifications, plastic pipe and fittings can also be used for underground service.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199P, ''Combustible Piping for Sprinkler Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Plastic Pipe and Fittings for Sprinkler Systems.''

Thermoplastic Support Devices and Cover Systems for Sprinkler Piping (VIXOC)

GENERAL

This category covers support devices and cover systems intended for use with certified thermoplastic piping installed in sprinkler systems in the types of occupancies specified in Plastic Pipe and Fittings for Sprinkler Systems (VIWTC).

The support devices are intended for use with CPVC pipe only, whereas the cover systems are for use with CPVC, copper tubing or steel piping as indicated in the individual certifications.

Thermoplastic Support Devices and Cover Systems for Sprinkler Piping (VIXOC)−*Continued*

The support devices and cover systems are intended to be installed in accordance with the requirements specified in the manufacturer's installation instructions and ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes," or ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height." Special installation and design criteria relative to pipe support spacings, piping restraint and piping location are specified in the manufacturer's installation instructions provided with the pipe.

The cover systems are intended for installation below smooth, flat horizontal ceilings and are intended to be supported in accordance with the manufacturer's installation instructions. As indicated in the individual certifications, the cover system may function as a protective membrane for CPVC piping, or as a decorative cover only. Cover systems referenced as decorative are not an acceptable means of providing protection for CPVC piping when a protective membrane is required.

The manufacturer's installation instructions should be reviewed and Authorities Having Jurisdiction should be consulted before installation.

Unless otherwise indicated in the individual certifications, these thermoplastic pipe support devices and cover systems have not been investigated for use in air-handling spaces.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199P, "Combustible Piping for Sprinkler Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Thermoplastic Support Device and Cover System for Sprinkler Piping."

Steel Sprinkler Pipe (VIZYC)

GENERAL

This category covers steel sprinkler pipe intended for use in wet, preaction, deluge or dry-pipe sprinkler systems as indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

Schedule 10, 30 and 40 Pipe

This pipe is manufactured to dimensions and materials specified in ASTM A53/A53M, "Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless," ASTM A135/A135M, "Standard Specification for Electric-Resistance-Welded Steel Pipe," and ASTM A795/A795M, "Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use."

Generally, joining by roll-grooving is limited to Schedule 10 (lightweight) pipe, and joining by threading, roll-grooving or cut-grooving to Schedule 30 and 40 (standard-weight) pipe. All pipe is suitable for joining by welding or with certified plain-end fittings. The pressure rating of this pipe is determined by the lowest-pressure-rated component in the system.

Lightwall Pipe

This pipe may have lesser wall thicknesses than Schedule 40 pipe. The pipe may be threaded or unthreaded as specified in the individual certifications. Threading requires the use of thread gauges conforming to the dimensions of ANSI/ASME B1.20.1, "Pipe Threads, General Purpose (Inch)." This pipe has been investigated for both mechanical strength and relative corrosion resistance expressed in terms of a corrosion resistance ratio (CRR). The ratio for each size pipe is defined as follows:

$$CRR = \frac{X^3}{X_{40}}$$

Where X = Thickness of the certified pipe measured either under the first exposed thread for threaded pipe or at the thinnest wall section for unthreaded pipe.

Where X_{40} = Thickness of Schedule 40 pipe measured either under the first exposed thread for threaded pipe or at the thinnest wall section for unthreaded pipe.

The "first exposed thread" is the minimum pipe thickness exposed to both interior and exterior corrosion and occurs at a threaded joint assembly at a line defined by the thread width just before the pipe engages the fitting.

While the CRR is an indication of relative resistance to corrosion, the actual corrosion performance of steel pipe can vary depending on the composition or quality of the steel of which it is formed, the composition of the water(s) to which it is exposed, and other related service conditions.

Steel Sprinkler Pipe (VIZYC)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C199S, "Light Wall Steel Pipes for Sprinkler Systems for Fire Protection Service," ASTM A53/A53M, "Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless," ASTM A135/A135M, "Standard Specification for Electric-Resistance-Welded Steel Pipe," and ASTM A795/A795M, "Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Steel Sprinkler Pipe."

Heating Cables for Sprinkler Systems (VNUCC)

USE AND INSTALLATION

This category covers heating cables intended for installation on Schedule 40 steel pipe of a wet sprinkler system to prevent freezing in unheated areas at ambient temperatures down to -40°C unless otherwise indicated in the individual certification. Generally, the sprinkler piping will also require insulation around the heating cable and pipe. Limitations of use are as detailed in the manufacturer's installation instructions and the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 130, "Requirements for Electrical Resistance Heating Cables and Heating Device Sets."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Heating Cables for Sprinkler Systems."

SPRINKLERS, FOAM-WATER (VNWTC)

USE

This category covers fixed nozzles intended for installation on piping of spray systems for fire protection. The sprinklers produce and distribute air foam when foam liquid is introduced into the water supply and distribute water over the same area in the absence of foam liquid.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S564, "Categories 1 and 2 Foam Liquid Concentrates."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sprinkler, Foam Water."

VALVES, ALARM (VPLXC)

GENERAL

This category covers automatic alarm valves intended for use in automatic wet-pipe sprinkler equipment. Valves of certain makes may be installed without a retarding chamber for steady pressure service, and with a retarding chamber for variable pressure service. Unless otherwise stated in the individual certifications, these alarm valves may be installed either vertically or horizontally. Valves may be provided with either a pressure switch (electric circuit closer) for giving electrical alarms, or a water motor and gong for mechanical alarms, or both.

These valves are capable of withstanding a moderate degree of service pressure increase, but different makes vary in this respect and all may send false alarms when installed in systems containing considerable

Valves, Alarm (VPLXC)−*Continued*

entrapped air and are subject to fluctuations of service pressure, such as occur in sprinkler installations having city service connections.

The most frequent causes of failure to give alarms are failure of current supply for electrical bells where batteries are used, misalignment of the shaft of the water motor and gong, and clogging of the nozzle that directs the stream of water to the wheel of the water motor.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C193, "Guide for the Investigation of Alarm Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Alarm Valve."

VALVES, DRY-PIPE (VPZVC)

GENERAL

This category covers dry-pipe valves manufactured in nominal pipe sizes ranging from 2 to 8 inclusive. They are intended for use as automatic means of controlling water flow to automatic dry-pipe sprinkler systems.

In addition to normal operation tests, dry-pipe valves are investigated to determine that they are provided with necessary "trim," such as gate and check valves, which are not specifically tested unless they have a specific effect on operation of the valve. Accessories such as alarm devices, alarm line strainers, etc., which are of importance to proper operation, including alarm signals, are normally examined and/or tested for suitability of use in connection with valves covered under Valves, Alarm (VPLXC).

The individual certifications include so-called cold-weather valves, and air-check valves, which are small size dry-pipe valves for special uses.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices (VDGTC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, "Guide for the Investigation of Dry Pipe, Deluge, and Pre-Action Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Dry Pipe Valve."

STANDPIPE EQUIPMENT (VROZC)

This category covers devices intended for use in standpipe equipment.

Requirements for the use and installation of these devices are included in ANSI/NFPA 14, "Standard for the Installation of Standpipe and Hose Systems," ANSI/NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection," ANSI/NFPA 24, "Standard for the Installation of Private Fire Service Mains and Their Appurtenances," and ANSI/NFPA 25, "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems."

Authorities Having Jurisdiction should be consulted before use and installation.

FIRE DEPARTMENT CONNECTIONS (VSQVC)

USE AND INSTALLATION

This category covers fire department connections intended for installation on the exterior of buildings having standpipe and hose or sprinkler systems to enable a fire department to connect hose lines directly to the system to supplement existing water supplies.

ADDITIONAL INFORMATION

For additional information, see Standpipe Equipment (VROZC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 405, "Fire Department Connections."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Department Connection."

Fire Department Connections (VSQVC)−*Continued*

HOSE CABINETS AND RACKS (VTETC)

USE

This category covers cabinets intended for the enclosure of a hose rack and for storage of hose and other related equipment The hose racks are of the semiautomatic type for the storage of 15 to 30 m of 32 and 38 mm unlined fire hose. Semiautomatic racks are not intended for use by individuals untrained in handling fire streams.

ADDITIONAL INFORMATION

For additional information, see Standpipe Equipment (VSQVC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C47, "Fire Hose Rack Assemblies."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Hose Cabinet and Rack."

HOSE VALVES (VTSRC)

GENERAL

This category covers hose valves manufactured in the standard patterns and sizes indicated below.

Gate Type — Nominal pipe size 2-1/2 – for hose connections to standpipes and fire pumps.

Angle Type — Nominal pipe sizes 1-1/2 and 2-1/2 – for hose connections to standpipes.

ADDITIONAL INFORMATION

For additional information, see Standpipe Equipment (VSQVC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C668, "Guide for the Investigation of Hose Valves for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Hose Valve."

NOZZLES, SPRAY TYPE, PORTABLE (VUFZC)

GENERAL

This category covers portable spray-type nozzles intended for use with rubber-lined hose only, unless otherwise indicated in the individual certifications.

The use of nonadjustable spray nozzles is not likely to prove hazardous when used at distances in excess of 3 m from live electrical apparatus and circuits involving voltages not in excess of 250,000, where such nozzles are designed so as not to discharge a straight stream.

The use of applicators and adjustable nozzles around live electrical apparatus and circuits may involve serious accident hazards, therefore, these devices are not recommended for use on Class C fires.

ADDITIONAL INFORMATION

For additional information, see Standpipe Equipment (VSQVC).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 401, "Portable Spray Hose Nozzles for Fire-Protection Service."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Spray Type Nozzle."

PRESSURE-REDUCING AND -RESTRICTING DEVICES (VUTXC)

USE AND INSTALLATION

This category covers devices intended for use in wet-pipe systems and intended to be installed in the supply piping of standpipe systems or at

Pressure-reducing and -Restricting Devices (VUTXC)−*Continued*

the hose outlets as a means of reducing existing high pressure in the piping system to a level that the fire hose nozzle can be managed by an operator.

Pressure-restricting devices are designed to reduce outlet pressures under flowing (residual) conditions only and are intended to be used in situations where the inlet pressure does not exceed 1200 kPa. Pressure-reducing devices are designed to reduce outlet pressures under both flowing (residual) and nonflowing (static) conditions. The type of device is indicated in the individual certifications.

These devices are intended to be installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," and ANSI/NFPA 14, "Installation of Standpipe and Hose Systems," and maintained in accordance with ANSI/NFPA 25, "Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," and the manufacturer's installation instructions. The manufacturer's instructions include a description of the performance characteristics of these devices under flowing (residual) and nonflowing (static) conditions.

Pressure-reducing or -restricting devices having a 1-1/2 NPS outlet are intended to be used in Class II standpipe systems, and devices having a 2-1/2 NPS outlet are intended for use in Class I or III standpipe systems.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Standpipe Equipment (VSQVC).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C668, "Guide for the Investigation of Hose Valves for Fire Protection Service," and ANSI/UL 1468, "Direct Acting Pressure Reducing and Pressure Restricting Valves."

The following requirements from ANSI/UL 1468 supersede or are added to the applicable requirements in ULC/ORD-C668: ANSI/UL 1468 section or paragraph reference, 7.2, 8.1, 8.2, 9, 9A, 10.2, 17, 19, 20, 21, 22, 23, 27, 28, 30.1 e), f), 30.4, 30.5, 31.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Pressure-reducing Device," "Pressure-reducing Valve," "Pressure-restricting Device" or "Pressure-restricting Valve."

TANKS (WWXRC)

HOLDING TANKS, SEWAGE (WXYXC)

USE AND INSTALLATION

This category covers underground and aboveground tanks in which sewage is received and retained prior to its collection for further treatment.

These tanks are intended for installation in accordance with the requirements specified by the Authority Having Jurisdiction.

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B66, "Prefabricated Septic Tanks and Sewage Holding Tanks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Holding Tank, Sewage."

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FIRESTOP SYSTEMS (XHEZC)

GENERAL

This category covers firestop systems intended for installation in fire separations and assigned fire ratings when investigated to CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

These firestop systems are intended for use in fire-resistive wall and/or floor assemblies investigated to CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials"; see Fire Resistance Ratings (BXUVC).

These firestop systems are composed of various materials. Typically, the illustrated system reflects the precise dimensions and conditions of the sample assembly which has been subjected to the fire endurance and hose stream test. The hourly ratings apply only to the complete systems. Individual components are not assigned ratings and are not intended to be interchanged between systems.

Materials used in the firestop systems are intended to be installed in accordance with the manufacturer's instructions provided with the materials. The structural integrity of the floor or wall assembly needs to be investigated when providing openings for the penetrating items.

The minimum and/or maximum annular space referenced in the firestop system must be maintained in order to achieve the hourly rating of the system. The annular space of a penetrating item through a rectangular opening is determined by measuring the distance from the closest point of the penetrating item to a point perpendicular to each of the four sides of the opening. The diagonal dimension is not intended to represent the annular space of a rectangular opening. The annular space between multiple penetrating items within a rectangular opening is determined by measuring the closest point of one penetrating item to the closest point of the adjacent penetrating item.

Unless otherwise stated in the individual designs, the differential pressure between the exposed and unexposed surfaces of the tested assembly measured during the fire test is 2.5 – 10 Pa.

Unless otherwise stated in the text under each illustrated system, the use of insulation as batts and blankets, packing or forming material is restricted to mineral wool insulation with a minimum density of 81 kg/m^3 compressed a minimum of 50% within the opening.

When concrete block wall or hollow-core concrete slab is indicated in a firestop system, concrete or mortar should be installed in voids to create a solid surround for the opening. The structural integrity of the floor or wall assembly is intended to be investigated in accordance with the requirements of the building code when providing openings for the penetrating items.

FIRESTOP SYSTEM TYPES

Head-of-Wall Joint Firestop Systems (HW)

These systems are identified by system numbers that begin with the prefix "HW." These systems are generally intended for installation in vertical separations between wall and floor or roof structures. These systems are generally not limited in length unless indicated, but are limited in width and depth as specified. These firestop systems do not incorporate penetrating items such as pipe or cable. The use of such penetrating items can significantly affect the rating(s) of the systems.

Joint Firestop Systems (JF)

These systems are identified by system numbers that begin with the prefix "JF." These systems are generally intended for installation in openings such as construction joints, gaps and spaces in floors or walls or at floor and wall intersections, as indicated in the illustrated assemblies. These systems are generally not limited in length unless indicated, but are limited in width and depth as specified. These firestop systems do not incorporate penetrating items such as pipe or cable. The use of such penetrating items can significantly affect the rating(s) of the systems.

Perimeter Joint Firestop Systems (PJ)

The assigned ratings are governed by the lowest of the fire-resistance ratings of the individual components (i.e., the wall, floor, or joint system). These systems are identified by system numbers that begin with the prefix "PJ." These systems consist of a floor with a fire-endurance rating, an exterior wall with or without a fire-endurance rating, and a perimeter joint system. The individual components are not assigned ratings and are not intended to be interchanged between systems. These perimeter joint firestopping systems do not incorporate penetrating items such as pipe or cable. The use of such penetrating items may significantly affect the rating(s) of the systems.

Service Penetration Firestop Systems (SP)

These systems are identified by system numbers that begin with the prefix "SP." These systems are generally intended for installation in openings of limited dimensions and shape in floor or wall assemblies, as specified in the illustrated systems. If tested, permitted penetrating items such as pipe, cable, cable trays, etc., will be specifically identified in the illustrated systems and corresponding text. Unless specifically described in the individual systems, the use of penetrating items of alternate size, type, quantity, etc., can significantly affect the rating(s) of the system.

Service Penetration for Combustible Systems (SPC)

These systems are identified by system numbers that begin with the prefix "SPC." These systems are generally intended for installation in openings of limited dimensions and shape in floor or wall assemblies, as specified in the illustrated systems.

These systems are tested with a minimum differential pressure of 50 Pa between the exposed and unexposed surfaces of the assembly to meet the requirements for combustible pipe for use in drain, waste and vent piping as referenced in the "National Building Code of Canada." Similar requirements also exist in other jurisdictions for combustible pipe used for various applications.

Unless specifically described in the individual systems, the use of penetrating items of alternate size, type, quantity, etc., can significantly affect the rating(s) of the system.

ALTERNATE NUMBERING SYSTEMS

Alternate Numbering System for Through-Penetration Firestop Systems

The alternate systems are identified by an alpha-alphanumeric identification system. The alpha components identify the type of assembly being penetrated and the numeric component identifies the type of penetrating item. The first alpha component is F, W or C. The F signifies a floor is being penetrated, the W signifies a wall is being penetrated, and C signifies either a floor or a wall is being penetrated.

The second alpha component may be any letter. The significance of the letter used is:

Letter	Description
A	Concrete floors with a minimum thickness less than or equal to 127 mm (5 in.)
B	Concrete floors with a minimum thickness greater than 127 mm (5 in.)
C	Framed floors
D	Steel decks in marine vessels
E through I	Not used at present time
J	Concrete or masonry walls with a minimum thickness less than or equal to 203.2 mm (8 in.)
K	Concrete or masonry walls with a minimum thickness greater than 203.2 mm (8 in.)
L	Framed walls
M	Bulkheads in marine vessels
N through Z	Not used at present time

The numeric component uses sequential numbers to identify the penetrating item. The significance of the number used is:

No. Range	Description
0000-0999	No penetrating items
1000-1999	Metallic pipe, conduit or tubing
2000-2999	Nonmetallic pipe, conduit or tubing
3000-3999	Electrical cable
4000-4999	Cable trays with electrical cable
5000-5999	Insulated pipe
6000-6999	Miscellaneous electrical penetrants, such as busducts
7000-7999	Miscellaneous mechanical penetrants, such as air ducts
8000-8999	Groupings of penetrations, including any combination of items listed above
9000-9999	Not used at present time

Alternate Numbering Systems for Joint Systems

The alternate systems are identified by an alphanumeric identification system. The alpha components identify the type of joint system and whether the joint system has movement capabilities. The numeric components identify the nominal joint width. In the case of head-of-wall joint system, the width of the joint does not include the voids created under the crests of metal deck floor or roof systems.

The first two alpha characters identify the type of joint system as follows:

Alpha Characters	Description of Joint System
FF	Floor-to-Floor
WW	Wall-to-Wall
FW	Floor-to-Wall
HW	Head-of-Wall
CG	Wall-to-Wall Joints Intended for use as Corner Guards

The third alpha character is either S or D. The S signifies joint systems which do not have movement capabilities. The D signifies joint systems which do have movement capabilities.

The numeric component uses sequential numbers to identify the nominal width of the joint systems. The significance of the number used is:

No. Range	Nom Joint Width
0000-9999	Less than or equal to 2 in.
1000-1999	Greater than 2 in. and less than or equal to 6 in.
2000-2999	Greater than 6 in. and less than or equal to 12 in.
3000-3999	Greater than 12 in. and less than or equal to 24 in.
4000-4999	Greater than 24 in.

RATINGS

Five ratings may be established for each firestop system: F, FT, FH, FTH and L. An F rating is based upon flame occurrence on the unexposed surface. An FT rating is based upon temperature rise criteria as well as flame occurrence on the unexposed surface. When a test sample is also subjected to a hose stream test, FH and FTH ratings may be established. An FH rating is based upon flame occurrence on the unexposed surface and acceptable performance during the hose stream test. An FTH rating is based upon a temperature rise criterion, flame occurrence on the unexposed surface and acceptable performance during the hose stream test. An L rating is based on the volume of air flowing, per unit of time, through the openings around the test sample under a specified pressure difference. The hourly ratings apply only to the complete systems. Individual components are designated for use in a specific system to achieve specified ratings. The individual components are not assigned ratings and are not intended to be interchangeable between systems. The rating of a firestop system applies to its use in the specific assembly of materials, penetration and floors or walls in which it was tested.

F Rating

A firestop system is considered as meeting the requirements for an F rating if it remains in the opening during the fire test for the rating period without permitting the passage of flame through openings, or the occurrence of flaming on any element of the unexposed side of the assembly.

FT Rating

A firestop system is considered as meeting the requirements for the FT rating if it remains in the opening during the fire test within the limitations as specified for an F rating and, additionally, the transmission of heat through the firestop system during the rating period will not have been such as to raise the temperature of any thermocouple on the unexposed surface of the firestop system more than 181°C above its initial temperature.

FH Rating

A firestop system is considered as meeting the requirements for an FH rating if it remains in the opening during the fire test and hose stream within the limitations for an F rating and, additionally, during the hose stream test, the firestop system will not develop any opening that would permit a projection of water from the stream beyond the unexposed side.

FTH Rating

A firestop system is considered as meeting the requirements for an FTH rating if it remains in the opening during the fire test and hose stream test within the limitations as described for F, FT and FH ratings.

L Rating

An L rating is based on the volume of air flowing, per unit of time, through the openings around the test sample under a specified pressure difference applied across the surface of the system. The rating is intended to assist Authorities Having Jurisdiction and others in determining the acceptability of firestop systems with reference to the control of air movement through the assembly. The rating is expressed in litres per second (L/s) per linear metre of opening for joint systems.

SIMPLIFIED USE INSTRUCTIONS

Identify the type of construction (e.g., concrete floor, gypsum wall) and firestop system (e.g., JF, SP) for which a fire-resistance rating is required.

Numbered items refer to the descriptive test below each drawing. Items identified by "•" are ULC Listed items. These items are of a proprietary nature over which it is necessary to exercise control at the manufacturing location and are Listed under the Follow-Up Program of Underwriters Laboratories of Canada. They are required to bear the Listing Mark of ULC. Look under Guide Number, Listing Category, and Manufacturer's Name for more information on the product.

FILL, VOID OR CAVITY MATERIALS (XHHWC)

USE AND INSTALLATION

This category covers fill, void or cavity materials, which are proprietary materials installed at the job site in accordance with the application instructions provided with the product and with the instructions specified in the individual joint system or through-penetration firestop system.

Properties of the fill, void or cavity materials other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Fill, Void or Cavity Materials (XHHWC)−*Continued*

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fill, Void or Cavity Material."

FIRESTOP DEVICES (XHJIC)

USE AND INSTALLATION

This category covers firestop devices, which are factory-built products intended to provide a degree of fire resistance to openings in fire-resistive walls or floors to accommodate penetrating items, such as electrical cable, cable trays, conduit and pipe.

Firestop devices are intended to be installed in accordance with the instructions provided with the device and the instructions specified in the individual through-penetration firestop system. Certifications of these firestop devices contemplates installation within a heated and air-conditioned environment, unless stated otherwise in the individual certifications.

Properties of the firestop devices other than their capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Firestop Device."

FIRESTOP SYSTEM COMPONENTS (XHJZC)

USE

This category covers firestop system components designated for use in specific assemblies covered under Firestop Systems (XHEZC).

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Firestop System Component."

FORMING MATERIALS (XHKUC)

USE AND INSTALLATION

This category covers forming materials investigated for use in firestop systems and joint systems. The forming materials are manufactured from proprietary materials, processed into the form of boards or sheets and formed into various sizes and shapes.

These materials are used as a form and seal to prevent leakage during the installation and curing of some fill, void or cavity materials and should be installed in accordance with the instructions specified in the individual joint system or through-penetration firestop system. After installation, forming materials are left in place and, together with the fill material, provide a degree of fire resistance for the opening.

Properties of the forming materials other than their capacity to provide a degree of the fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

Forming Materials (XHKUC)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Forming Material."

LIGHT-GAUGE FRAMING (XHLIC)

USE AND INSTALLATION

This category covers light-gauge framing members, which are proprietary products installed at the job site in accordance with the installation instructions provided with the product and with the instructions specified in the individual joint system.

Properties of the light-gauge framing members other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Light-gauge Framing."

MECHANICAL JOINT ASSEMBLIES (XHLPC)

USE AND INSTALLATION

This category covers mechanical joint assemblies, which are proprietary products installed at the job site in accordance with the application instructions provided with the product and with the instructions specified in the individual joint system.

Properties of the mechanical joint assemblies other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Mechanical Joint Assembly."

PIPE-COVERING MATERIALS (XHLUC)

USE AND INSTALLATION

This category covers pipe-covering materials intended to be installed in accordance with the instructions specified in the individual through-penetration firestop systems. Certification of these products contemplates installation within a heated and air-conditioned environment, unless stated otherwise in the individual certifications.

Properties of the pipe-covering materials other than their capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pipe-covering Material."

THROUGH-PENETRATING PRODUCTS (XHLYC)

USE AND INSTALLATION

This category covers proprietary products, such as cable, conduit, pipe and tubing, whose fire-resistive properties have been investigated for specific applications in which they pass through openings in fire-rated walls or floors, or both, within a building.

Properties of the through-penetrating products other than their capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Firestop Systems (XHEZC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, ''Standard Method of Fire Tests of Firestop Systems.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Through-penetrating Product.''

TORCHES (XLFXC)

This category covers blowpipes and torches for welding, cutting, heating, metal spraying and lighting. The individual Listings identify the intended fluid and use.

TORCHES, UTILITY, PROPANE-FIRED (XMHTC)

USE

This category covers utility torches designed for industrial uses, such as heat treatment, expanding, brazing, softening and melting. These torches include, as a minimum, a venturi, a control valve, a fixed orifice, and one or more burner tips. They are intended for connection only to CTC or DOT propane containers through approved LP-gas high-pressure hose, high-pressure regulators, and shipping-container valves. When designed for use with fuel in the liquid phase, it is indicated in the individual certifications. Utility torches are intended to be used only under the constant supervision of an attendant.

REQUIREMENTS

The basic standard used to investigate products in this category is CSA/CGA 2.29 (1997), ''Hand-Held Torches for Fuel Gases.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Torch, Utility, Propane-Fired.''

TRUCKS, INDUSTRIAL AND OTHER POWER-OPERATED MOBILE EQUIPMENT (XVHZC)

This category covers industrial equipment of the power-operated, riding or walking type, such as lift trucks, platform trucks, towing tractors, floor maintenance machines, etc.

These devices may be electric, battery powered, internal combustion engine, or pneumatic powered.

TRUCKS, ELECTRIC BATTERY-POWERED (XVVXC)

This category covers battery-operated electric industrial trucks where the fire hazard, incident to their use in ordinary locations, has been reduced to an acceptable degree. Where tests have been conducted to determine their suitability for use in hazardous (classified) locations as defined by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' the truck may be designated Type EX covering Class I, Group D, and Class II, Group G locations.

Electric battery-powered industrial trucks are designated Type E, EE, ES or EX.

Unless marked to indicate otherwise, industrial trucks are tested on a course having a ramp with a 5% minimum grade.

Trucks, Industrial, Type EX (XWXTC)

GENERAL

Trucks, Industrial, Type EX (XWXTC)−*Continued*

This category covers electric-battery-powered trucks with safeguards in addition to those required for Type E and EE trucks.

ADDITIONAL INFORMATION

For additional information, see Trucks, Electric Battery-Powered (XVVXC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583, ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Truck, Industrial Type EX.''

TRUCKS, INDUSTRIAL, INTERNAL COMBUSTION ENGINE-POWERED (XXLRC)

This category covers industrial lift trucks that present inherent fire hazards incident to the storage and use of fuel, and have been investigated for fire hazards associated with the fuel, electrical and exhaust systems. Storage and use of these trucks should conform to the requirements of the Authority Having Jurisdiction.

Internal combustion engine-powered industrial trucks are classified as Types D, DS, DY, G, GS, LP and LPS.

Trucks, Industrial, Type DS (XYMXC)

GENERAL

This category covers diesel-engine-powered trucks that are judged under requirements similar to those applying to Type D trucks. Special features are provided as additional safeguards to further reduce the inherent fire hazards of the electrical, fuel and exhaust systems.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, ''Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Truck, Industrial, Type DS.''

Trucks, Industrial, Type DY (XZAVC)

GENERAL

This category covers Type DY trucks fuelled with diesel fuel provided with all safeguards required for Type DS trucks without any electrical equipment, including ignition equipment and equipped with temperature-limitation features.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558 (1975), ''Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks.''

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Truck, Industrial, Type DY.''

TRUCKS, INDUSTRIAL, MISCELLANEOUS (YBEOC)

Trucks, Industrial, Pneumatic-powered (YBEXC)

USE

This category covers pneumatic-powered trucks without electric or fuel components. They are provided with safeguards such that they are suitable for use in the Hazard Classification, Class I, Division I, Group D of ANSI/NFPA 505, ''Fire Safety Standards for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations.''

Authorities Having Jurisdiction should be consulted relative to the use of these vehicles.

Trucks, Industrial, Pneumatic-powered (YBEXC)–*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583, "Guide for the Investigation of Electric Battery Powered Industrial Trucks."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Truck, Industrial, Pneumatic-Powered."

VALVES (YEWTC)

This category covers valves intended for use in the assembly of appliances or equipment or in piping handling gases or liquids. The fluids and the specific or general kind of service for which the valves are intended are noted in the individual Listings.

CHECK VALVES (YFKRC)

LP-gas Excess-flow Check Valves (YHNTC)

USE AND INSTALLATION

This category covers valves intended to automatically restrict the propane gas fuel supply if the flow rate exceeds the rated capacity.

These valves are intended to be installed in accordance with CAN/CGA-B149.2, "Propane Storage and Handling Code."

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C125, "Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief)."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "LP-Gas Excess-Flow Check Valve."

Flash Arresters (YIIQC)

USE

This category covers flash arresters for oxy-fuel gas systems, intended for use at pressures up to 2070 kPa. They are intended to be inserted in leads not exceeding 6 mm pipe size that connect cylinders to a header or coupler block, or to supply gas regulators, or to torches as indicated in the individual certifications.

REQUIREMENTS

The basic standard used to investigate products in this category is ISO 5175, "Equipment Used in Gas Welding, Cutting and Allied Processes – Safety Devices for Fuel Gases and Oxygen or Compressed Air – General Specifications, Requirements and Tests."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flash Arrester."

REGULATORS (YJQVC)

This category covers gas regulators, which are divided into two groups: compressed gas regulators and LP-gas regulators. Regulators designed as compressed gas regulators are not investigated for their ability to maintain the delivery pressure within predetermined limits. Regulators designed as LP-gas regulators are investigated to determine that they are capable of controlling and maintaining a uniform gas delivery pressure.

Compressed Gas Regulators (YKFTC)

GENERAL

This category covers regulators designed for use with the compressed gases specified in the individual certifications, to reduce the storage cylinder pressure or line pressure to the delivery pressure.

These regulators or reducing valves are investigated to determine that they do not leak across operating seats in the no-flow position; also, regulators designed for inlet pressures in excess of 1720 kPa are investigated to determine that the design prevents throwing of parts if the seat fails.

The ability of these regulators to maintain the delivery pressure within predetermined limits, the effects of overpressure on connected equipment, and the physiological effects of the use of medical equipment regulators has not been investigated.

Compressed Gas Regulators (YKFTC)–*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C252, "Compressed-Gas Pressure Regulators."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Compressed Gas Regulator."

SHUT-OFF VALVES (YPMTC)

This category covers shut-off valves exclusive of the electrically-operated types and are manually, float, or pressure actuated.

LP-gas Shut-off Valves (YSDTC)

GENERAL

This category covers LP-gas shut-off valves, which include CTC and DOT authorized shipping container, gas line service, and other valves as identified in the individual certifications, suitable for use in systems storing and handling LP-gas in either the liquid or gaseous phase. These valves are intended for use where the working pressure does not exceed 1720 kPa. These valves are, unless otherwise specified, suitable for installation where a positive shut-off is required. Metal-to-metal seat-type valves are suitable for installation only in branch or bypass lines where a positive shut-off is not essential.

Safety-relief devices included in the assembly of a shut-off valve for CTC or DOT authorized compressed gas shipping containers, which devices are to comply with the requirements of the Canadian Transport Commission, have not been investigated.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C125, "Valves for Anhydrous Ammonia and Propane (Other than Safety Relief)," and CGA-3.16, "Lever Operated Non-Lubricated Gas Shut-Off Valves."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "LP Gas Shut-Off Valve."

VAULT DOORS, BURGLARY-RESISTANT (YUSRC)

GENERAL

This category covers combination-and-time-locked vault doors designed to offer protection against expert burglary attacks by cutting torches, fluxing rods, portable electric power and common hand tools. as follows:

The burglary classifications for these doors are:

M – 15 minute protection
C1-30 – 30 minute protection
C2-60 and **C2-90** – 60 and 90 minute protection, respectively
C3-120 – 2 hour protection

These doors are intended for installation as closures for reinforced concrete vaults in accordance with the requirements of the Authority Having Jurisdiction and under the supervision of an authorized representative of the manufacturer, or for vaults constructed of modular vault panels certified for the same classification.

These doors are equipped with relocking devices. They are constructed of reinforced concrete, combined with special materials to resist torches, carbide drills, or abrasive cutting tools. The door lugs are of substantial design and material.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S321, "Burglary Resistant Vault Doors and Modular Panels."

Vaults covered under this category are subject to a retest program to confirm continued compliance with existing published attack test requirements. The frequency of the retest(s) is every seven (7) years following the original year tested.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Vault Door, Burglar Resistant, Class I."

BURGLARY-RESISTANT MODULAR VAULT INSTALLATION AGENCIES (YUTPC)

GENERAL

This category covers agencies engaged in the installation of burglary-resistant modular vaults.

Burglary-resistant vault assembly components (e.g., modular doors and panels) are rated according to the length of time they withstand attack by common mechanical tools, electrical tools, cutting torches, or any combination of these means in the hands of experienced operators. The ratings based on the net working time to effect entry are as follows:

Class C1 30 – Minimum 30 minutes protection
Class C2 60 – Minimum 60 minutes protection
Class C2 90 – Minimum 90 minutes protection
Class C3 120 – Minimum 2 hours protection dd

Installation agencies, as referenced here, include self-employed individuals, agencies, companies, divisions of companies, and other definable entities who are engaged in the installation of modular vaults.

Certified installation agencies have demonstrated their ability to install specific modular vaults, as described in the individual Listings, in accordance with the modular vault manufacturer's installation instructions.

The installation agency bears the responsibility for the correctness of the installation performed. Underwriters Laboratories of Canada makes no representations or warranties, expressed or implied, that the modular vault will prevent any loss or will, in all instances, provide the protection for which it is installed or intended. ULC does not assume or undertake to discharge any liability for any loss which may result from failure of the modular vault to perform as intended.

ADDITIONAL INFORMATION

For additional information, see Vault Doors, Burglary-Resistant (YUSRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S321, "Burglary Resistant Vault Doors and Modular Panels."

ULC MARK

The Listing Mark (certificate) of Underwriters Laboratories of Canada for a certified installation is the only evidence provided by ULC to identify services which are under its Listing and Follow-Up Service. The Listing Mark of these services include the ULC symbol (as illustrated in the Introduction of this List of Equipment and Materials) together with the service name.

VAULT PANELS, BURGLARY-RESISTANT (YUTZC)

GENERAL

This category covers prefabricated modular units constructed at the manufacturer's plant and assembled, together with the same class of vault door, on site, to form a complete vault.

The burglary classifications for these panels are:

Class C1 30 – Minimum 30 minutes protection
Class C2 60 – Minimum 60 minutes protection
Class C2 90 – Minimum 90 minutes protection
Class C3 120 – Minimum 2 hours protection

ADDITIONAL INFORMATION

For additional information, see Vault Doors, Burglary-Resistant (YUSRC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S321, "Burglary Resistant Vault Doors and Modular Panels."

Vaults covered under this category are subject to a retest program to confirm continued compliance with existing published attack test requirements. The frequency of the retest(s) is every seven (7) years following the original year tested.

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Vault Panel, Burglary-Resistant."

VAULT VENTILATORS AND VAULT-VENTILATING PORTS (YUUTC)

GENERAL

This category covers devices intended for installation in a vault wall to provide means for introducing fresh air to persons locked in the vault by accident or during a robbery.

Vault ventilators and ports are examined primarily for safety of integral electrical equipment and strength to resist burglary. When installed in a concrete wall according to the manufacturer's instructions, these ventilator assemblies do not reduce the burglary resistance of the vault wall significantly.

Ventilators are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Also, the conduit for electrical connections should not form a direct path through the wall but should be offset at least once, and preferably twice, so as not to invalidate the burglary classification of the vault.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S322, "Vault Ventilators and Vault-Ventilating Ports."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Vault Ventilator."

VENTILATING EQUIPMENT FOR RESTAURANT COOKING APPLIANCES (YXLTC)

This category covers filter units, cleaning and recycling assemblies, exhaust hoods, grease ducts, grease duct insulation, power ventilators and other apparatus intended for installation as parts of ventilating and exhaust systems serving restaurant-type cooking appliances and in accordance with ANSI/NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations."

Where there are differences between the particular requirements contained in ANSI/NFPA 96 and the ULC Standard indicated in the individual product categories, the requirements of the ULC Standard shall govern unless explicitly stated otherwise by the Authority Having Jurisdiction.

FILTER UNITS, KITCHEN EXHAUST (AKUSC)

GENERAL

This category covers devices intended for the removal of grease and other contaminants from exhaust stream serving equipment installed in accordance with ANSI/NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations."

Grease filter units are capable of removing grease from air streams and provide surfaces that retain only small amounts of grease, which is susceptible to ignition when exposed to flame. These units have been investigated as to flammability after exposure to grease-laden air stream.

Where there are differences between the particular requirements contained in ANSI/NFPA 96 and the referenced ULC Standard, the requirements of the ULC Standard shall govern unless explicitly stated otherwise by the Authority Having Jurisdiction.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S649, "Grease Filters for Commercial and Institutional Kitchen Exhaust Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Filter Unit, Grease."

EXHAUST CLEANING AND RECYCLING ASSEMBLIES FOR COMMERCIAL KITCHEN EXHAUST SYSTEMS (YXMTC)

GENERAL

This category covers assemblies intended to reduce the level of contaminants in kitchen exhaust systems and to allow its discharge at levels other than 1000 mm above the roof as required by ANSI/NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations." They are also designed to limit exhaust temperatures to 138°C maximum to permit their conveyance through air ducts conforming to the requirements for low-capacity heating systems as contained in the "National Building Code of Canada." By means of an optional exhaust recycling system, provision is made to allow the tempering of make-up air by recirculating a portion of the exhaust air to the kitchen area only.

The assembly may include a hood and damper assembly as an integral unit.

These assemblies are intended to be installed in accordance with the manufacturer's recommended installation instructions and the applicable section of ANSI/NFPA 96.

Exhaust Cleaning and Recycling Assemblies for Commercial Kitchen Exhaust Systems (YXMTC)−*Continued*

Where there are differences between the particular requirements contained in ANSI/NFPA 96 and the referenced ULC Standard, the requirements of the ULC Standard shall govern unless explicitly stated otherwise by the Authority Having Jurisdiction.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S647, "Exhaust Cleaning and Recirculation Assemblies for Commercial and Institutional Kitchen Exhaust Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Exhaust Cleaning and Recycling Assembly for Commercial Kitchen Exhaust Systems."

EXHAUST HOODS FOR COMMERCIAL OR INSTITUTIONAL KITCHENS (YYCWC)

GENERAL

This category covers exhaust hoods intended for placement over restaurant-type cooking equipment. These devices have been investigated for smoke and vapor capture, and the ability to remove a large percentage of grease and other airborne particulates from the exhaust stream. Where duct temperature-limiting devices are provided, their ability to limit duct temperatures to a maximum of 190°C has also been investigated.

Hoods may be provided with any of the following features:

Fixed grease-extraction devices
Removable grease-extraction devices
Means to limit the temperature of gases entering the exhaust duct to 190°C
Hot water and detergent cleaning systems*
Other cleaning systems*
Make-up air plenums
Make-up air dampers
Lighting fixtures

* The efficiency of cleaning systems has not been investigated.

Exhaust hoods are intended for installation in compliance with the applicable sections of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations."

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S646, "Exhaust Hoods and Related Controls for Commercial and Institutional Kitchens."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Exhaust Hood for Commercial or Institutional Kitchens."

Exhaust Hood Accessories (YYCZC)

USE

This category covers exhaust hood accessories used to supplement the operation of hood maintenance, and which may be connected to a fire alarm system as indicated by the installation wiring diagram pertinent to its application.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S646, "Exhaust Hoods and Related Controls for Commercial and Institutional Kitchens."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Exhaust Hood Accessory."

GREASE DUCT INSULATION (YYETC)

GENERAL

This category covers grease duct insulation materials intended for insulating metal grease ducts in commercial institutional kitchen systems to protect adjacent combustibles from ignition in the event of an internal grease duct fire. They have been investigated for the ability to permit the

Grease Duct Insulation (YYETC)−*Continued*

reduction of clearances to combustible construction in accordance with the requirements of "ULC Grease Duct Insulation Test Protocol," and are intended to be installed in accordance with the manufacturer's recommended installation instructions and the applicable section of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations."

Minimum clearances to combustible construction are indicated in the individual certifications.

The fire-resistance performance of these materials has not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies which have been assigned fire-resistance ratings are covered under Fire-Resistant Ducts (HNKNC) in the ULC List of Equipment and Materials entitled "Fire Resistance."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Grease Duct Insulation."

GREASE DUCTS FOR RESTAURANT COOKING APPLIANCES (YYGQC)

GENERAL

This category covers grease ducts intended for commercial institutional kitchen exhaust systems. They are intended to be installed in accordance with the manufacturer's recommended installation instructions and the applicable section of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations."

The fire-resistance performance of these materials has not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products associated with assemblies that have been assigned fire-resistance ratings are covered under Fire Resistant Ducts (HNKNC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S646, "Exhaust Hoods and Related Controls for Commercial and Institutional Kitchens."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Grease Duct for Restaurant Cooking Appliances."

POWER VENTILATORS FOR COMMERCIAL KITCHEN EXHAUST SYSTEMS (YZHWC)

GENERAL

This category covers assemblies intended to provide the motive power for the exhausting of grease and contaminant-laden air from commercial kitchen exhaust systems. They are designed such that the exit point of the exhaust is a minimum of 1000 mm above roof level, or terminate through an exterior masonry wall as specified in the individual certifications.

These ventilators are intended to be installed in accordance with the manufacturer's installation instructions and the applicable section of ANSI/NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations."

Where there are differences between the particular requirements contained in ANSI/NFPA 96 and the referenced ULC Standard, the requirements of the ULC Standard shall govern unless explicitly stated otherwise by the Authority Having Jurisdiction.

Authorities Having Jurisdiction should be consulted before installation.

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S645, "Power Roof Ventilators for Commercial and Institutional Kitchen Exhaust Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Power Ventilator for Commercial Kitchen Exhaust Systems."

VENTS, SMOKE AND HEAT (ZAQRC)

This category covers smoke and heat vents designed to relieve smoke and heat from the seat of a fire in a building, thereby minimizing sprinkler operation, lowering building temperatures, exhausting smoke, and improving accessibility for fire-fighting personnel to permit close approach and direct action against the seat of the fire. The advantages or disadvantages of venting and the conditions under which venting should be provided have not been investigated.

For information concerning the spacing of vents and venting ratios, see ANSI/NFPA 204, "Smoke and Heat Venting."

ROOF VENTS, AUTOMATICALLY OPERATED (ZBDZC)

GENERAL

This category covers automatically-operated roof vents consisting of a body, frame, one or more doors and operating mechanisms.

The roof vents are intended to be operated manually and automatically in the event of fire. Operation does not depend on electrical power or other energy sources that may be interrupted during a fire.

The investigation of automatically-operated roof vents includes determination as to their design and construction, practicability of installation, durability, reliability of operation and uniformity. The vents are intended to be installed in accordance with the instructions provided by the manufacturer and operated periodically.

These devices are designed to operate against snow loads of 49 kg/m^2 or less. To avoid excessive snow loads they should be located at a minimum horizontal distance of 10 h from any object projecting above the roof on which the vent is installed (where h is the vertical height of the top of the object above the level of the roof on which the vent is installed).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Vents, Smoke and Heat (ZAQRC).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C793, "Guide for the Investigation of Automatically Operated Smoke and Heat Roof Vents."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Roof Vent, Automatically Operated."

WATER SAFETY PRODUCTS (ZDSNC)

LIFEBUOYS (ZDTLC)

GENERAL

This category covers small-vessel lifebuoys and SOLAS lifebuoys intended primarily for use as a throwable device on vessels.

PRODUCT MARKINGS

The markings on each small-vessel lifebuoy include the Listee's name/trademark/logo and address, model, lot number, mass of the lifebuoy, and pertinent use data. All markings are required to be in English and French.

The markings on each SOLAS lifebuoy include the Listee's name/trademark/logo and address, model, lot number, drop test height, mass of the lifebuoy, the statement, "Suitable for quick release from the bridge" or "Not suitable for quick release from the bridge," and pertinent use data. All markings are required to be in English and French.

REQUIREMENTS

The basic standard used to investigate products in this category is TP 14475E, "Canadian Life Saving Appliance Standard."

Lifebuoys (ZDTLC)−*Continued*

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the statement, "Complies with Transport Canada Requirements in TP 14475E," and the product name "Small-vessel Lifebuoy" or "SOLAS Lifebuoy."

PERSONAL BUOYANT WATER SAFETY PRODUCTS (ZDTQC)

USE

This category covers personal buoyant water safety products, such as personal flotation devices (PFD) and life jackets, suitable for use on recreational boats.

REQUIREMENTS

These products have been approved by Transport Canada and found to meet the applicable requirements of:

1. **Personal Flotation Devices (PFD):** — CAN/CGSB-65.11, "Personal Flotation Devices," CAN/CGSB-65.15, "Personal Flotation Devices for Children," and the Canadian Addendum to ANSI/UL 1180, "Fully Inflatable Recreational Personal Flotation Devices."
2. **Life Jackets:** — CAN/CGSB-65.7, "Life Jackets."
3. **Standard Life Jackets Inherently Buoyant:** — CGSB-65-GP-14, "Life Jackets, Inherently Buoyant, Standard Type."
4. **Life Jackets:** — TP 13571, "Standards for SOLAS Life Jackets."
5. **Marine Abandonment Immersion Suit Systems:** — CAN/CGSB-65.16, "Immersion Suit Systems."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," an issue number, and the product name "Personal Buoyant Water Safety Product."

Components for Personal Buoyant Water Safety Products (ZDTCC)

GENERAL

This category covers components or materials used in the construction of personal buoyant water safety products (see ZDTQC) such as foam, fabrics, threads, webbing, zippers, buckles, adjusters, etc.

ADDITIONAL INFORMATION

For additional information, see Personal Buoyant Water Safety Products (ZDTQC).

REQUIREMENTS

The products covered under this category have been investigated as follows:

1. **Components for Personal Flotation Devices (PFD):** — Constructed in accordance with CAN/CGSB 65.11, "Personal Flotation Devices," and CAN/CGSB 65.15, "Personal Flotation Devices for Children."
2. **Components for Life Jackets:** — Constructed in accordance with CAN/CGSB 65.7, "Life Jackets."
3. **Closed-Cell Foamed Polymeric Materials:** — Constructed in accordance with CAN/CGSB 65.18, "Closed-Cell Foamed Polymeric Materials."
4. **Textile Components of Life Jackets and Personal Flotation Devices:** — Constructed in accordance with CAN/CGSB 65.19, "Textile Components of Lifejackets and Personal Flotation Devices."

ULC MARK

The Listing Mark of Underwriters Laboratories of Canada on the product is the only method provided by ULC to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the ULC symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Personal Buoyant Water Safety Product."

BUILDING MATERIALS CERTIFIED FOR CANADA (AABM7)

GENERAL

Building materials include adhesives, coatings, acoustical materials and the like, investigated for surface burning characteristics, such as flame spread and smoke developed during fire exposure. Other building materials include prefabricated buildings, structural building products, gypsum board, fireplaces and chimneys, elevator equipment, and exiting equipment, such as exit signs, exit appliances, and emergency lighting and power equipment.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

FIRE PROTECTION EQUIPMENT CERTIFIED FOR CANADA (AAFP7)

GENERAL

Fire protection equipment includes fire suppression equipment and systems, fire alarm equipment and fire fighting equipment, such as fire hoses, fire service protective clothing, and automotive fire apparatus. Also included are furnishings in buildings investigated for combustibility, such as upholstered furniture, mattresses, and warehouse pallets.

This equipment is intended for use only as described in the general Guide Information for each product category and individual Listings. This equipment has been investigated for use as described in the instructions and markings provided with the equipment. The use of the equipment in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category has not been investigated by UL.

CERTIFICATE SERVICE

Fire alarm systems require extensive installation work and maintenance by the Listed installing company. UL's Standards for these systems cover installation methods, extent of protection, and maintenance service, which are supervised under UL's Certificate Service.

Under Certificate Service, UL authorizes the issuance of UL's certificates to installations which the Listed installing company represents to be in compliance with requirements established for the product category. The certificate indicates the classification, extent, location of equipment, period covered by the certificate, and name of the installing company.

UL conducts countercheck field examinations of representative installations of the Listed installing company. UL assumes no liability for any loss that may result from failure of the equipment, incorrect certification or nonconformity with requirements. If installations not in compliance with UL's requirements are found as a result of field examinations, they are subject to correction by the Listed installing company or cancellation of the certificate.

All of a company's alarm system installations may not be covered under UL's Certificate Service. Only those installations for which a certificate has been properly issued are covered under UL's Certificate Service.

UL maintains a Certificate Verification Service (ULCVS) that allows Authorities Having Jurisdiction (AHJs) to verify up-to-date Certificate information and identify companies eligible to issue Certificates as of the date of the inquiry. Only those alarm or signal system installations for which a Certificate has been issued are covered under UL's Certificate Service. The verification of a Certificate on ULCVS is the only method UL provides to identify the Certificated alarm systems actively covered under its Listing and Follow-Up Service.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

INDOOR AND OUTDOOR USE

Unless outdoor use is specifically indicated in the general Guide Information for the product category or included in the individual Listings of the product, individual appliances have been investigated only for use indoors, unless the product, by its inherent nature, is obviously intended for use outdoors.

ELECTRICAL INSTALLATIONS

General — The ampere or wattage marking on electrical power-consuming equipment is valid only when the equipment is supplied at its marked rated voltage. In general, the current input to electric heating appliances or resistance heating equipment will increase in direct proportion to an increase in the supply voltage, while the current input to an induction motor supplying a constant load will increase approximately in direct proportion to a decrease in the supply voltage. These increases in current can cause overcurrent protection devices to open even when these devices are properly selected on the basis of nameplate ratings.

Supply Conductors — Except as noted in the general Guide Information for some product categories, most terminals are for use only with copper wire unless marked otherwise. If aluminum wire can be used, marking to indicate this fact is provided. Such marking is required to be independent of any marking on terminal connectors, such as on a wiring diagram or other visible location. The marking may be in an abbreviated form, such as "AL-CU."

Except as noted below or in the general Guide Information for certain product categories, the electrical termination provisions on equipment are based on the use of 60°C insulated conductors in circuits rated 100 A or less and the use of 75°C insulated conductors in higher rated circuits.

If the electrical termination provisions on equipment are based on the use of other conductors, the equipment is either marked with both the size and temperature rating of the conductors to be used or with only the temperature rating of the conductors to be used. If the equipment is only marked for use with conductors having a higher (75 or 90°C) temperature rating (wire size not specified), the 60°C ampacities (for circuits rated 100 A or less) and 75°C ampacities (for circuits rated over 100 A) specified in Table 2 of the CEC should be used to determine wire size. Conductors having a temperature rating higher than specified may be used, though not required, if the size of the conductors is determined on the basis of the 60°C ampacity (circuits rated 100 A or less) or 75°C ampacity (circuits rated over 100 A).

Terminations — Copper pigtail leads may be used with aluminum supply wires in dry locations if 1) the splicing devices are Listed for use in joining copper to aluminum, 2) there is sufficient wiring space, and 3) the means provided for connecting the wiring system are acceptable for the wire size used.

FIRE PROTECTION EQUIPMENT CERTIFIED FOR CANADA (AAFP7)

Supply terminals of 15 A and 20 A switches and receptacles not marked "CO/ALR" are for use with copper conductors only. Terminals marked "CO/ALR" are for use with aluminum or copper conductors.

Screwless pressure terminal connectors of the conductor push-in type are for use only with copper conductors, both solid and stranded unless otherwise limited by marking.

Terminals of switches and receptacles rated 30 A and above not marked "AL/CU" are for use with copper conductors only. Terminals of switches rated 30 A and above marked "AL/CU" are for use with aluminum or copper conductors.

Combination of dissimilar conductors in terminal or splicing connectors is acceptable only in dry locations and when the connectors are identified as suitable for such intermixing.

Hazardous Locations — Electrical equipment and appliances are not intended for use in hazardous (classified) locations, as defined in the CEC, unless specifically identified as suitable for use in hazardous locations.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

HEATING, COOLING, VENTILATING AND COOKING EQUIPMENT CERTIFIED FOR CANADA (AAHC7)

GENERAL

This equipment is intended for heating, cooling, refrigerating, ventilating and cooking, and uses various energy sources including electricity, gas, petroleum-base liquid, solid fuel or solar energy.

Fuel-fired equipment is intended for use only with the fuels described in the general Guide Information for each product category and individual Listings. This equipment has been investigated for use as described in the instructions and markings provided with the equipment. The use of the equipment with other fuels, and in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category, has not been investigated by UL.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

In addition, certain products have been investigated with reference to environmental and public health effects and for potential conformity to the installation and use provisions of applicable environmental and public health requirements, if so indicated in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

INDOOR AND OUTDOOR USE

Unless outdoor use is specifically indicated in the general Guide Information for the product category or included in the individual Listings of the product, individual appliances have been investigated only for use indoors, unless the product, by its inherent nature, is obviously intended for use outdoors.

ELECTRICAL INSTALLATIONS

General — The ampere or wattage marking on electrical power-consuming equipment is valid only when the equipment is supplied at its marked rated voltage. In general, the current input to electric heating appliances or resistance heating equipment will increase in direct proportion to an increase in the supply voltage, while the current input to an induction motor supplying a constant load will increase approximately in direct proportion to a decrease in the supply voltage. These increases in current can cause overcurrent protection devices to open even when these devices are properly selected on the basis of nameplate ratings.

Supply Conductors — Except as noted in the general Guide Information for some product categories, most terminals are for use only with copper wire unless marked otherwise. If aluminum wire can be used, marking to indicate this fact is provided. Such marking is required to be independent of any marking on terminal connectors, such as on a wiring diagram or other visible location. The marking may be in an abbreviated form, such as "AL-CU."

Except as noted below or in the general Guide Information for certain product categories, the electrical termination provisions on equipment are based on the use of 60°C insulated conductors in circuits rated 100 A or less and the use of 75°C insulated conductors in higher rated circuits.

If the electrical termination provisions on equipment are based on the use of other conductors, the equipment is either marked with both the size and temperature rating of the conductors to be used or with only the temperature rating of the conductors to be used. If the equipment is only marked for use with conductors having a higher (75 or 90°C) temperature rating (wire size not specified), the 60°C ampacities (for circuits rated 100 A or less) and 75°C ampacities (for circuits rated over 100 A) specified in Table 2 of the CEC should be used to determine wire size. Conductors having a temperature rating higher than specified may be used, though not required, if the size of the conductors is determined on the basis of the 60°C ampacity (circuits rated 100 A or less) or 75°C ampacity (circuits rated over 100 A).

Terminations — Copper pigtail leads may be used with aluminum supply wires in dry locations if 1) the splicing devices are Listed for use in joining copper to aluminum, 2) there is sufficient wiring space, and 3) the means provided for connecting the wiring system are acceptable for the wire size used.

Supply terminals of 15 A and 20 A switches and receptacles not marked "CO/ALR" are for use with copper conductors only. Terminals marked "CO/ALR" are for use with aluminum or copper conductors.

Screwless pressure terminal connectors of the conductor push-in type are for use only with copper conductors, both solid and stranded unless otherwise limited by marking.

Terminals of switches and receptacles rated 30 A and above not marked "AL/CU" are for use with copper conductors only. Terminals of switches rated 30 A and above marked "AL/CU" are for use with aluminum or copper conductors.

Combination of dissimilar conductors in terminal or splicing connectors is acceptable only in dry locations and when the connectors are identified as suitable for such intermixing.

Hazardous Locations — Electrical equipment and appliances are not intended for use in hazardous (classified) locations, as defined in the CEC, unless specifically identified as suitable for use in hazardous locations.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

EQUIPMENT FOR USE IN AND RELATING TO CLASS I, II AND III, DIVISION 1 AND 2 HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AAIZ7)

GENERAL

Electrical equipment for use in and relating to Class I, II and III, Division 1 and 2 hazardous (classified) locations has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). Those products investigated for conformity to the installation and use provisions of the Canadian Coast Guard Regulations are identified in the general Guide Information for each product category or the individual Listings for the product. Attention is called to the limitations of the individual Listings and Classifications specified in the general Guide Information for each product category, such as current, voltage, horsepower limits, markings, special descriptions and installation provisions.

Unless equipment is identified in 1) the product category title as relating to hazardous (classified) locations or 2) the individual Listings as apparatus for use in unclassified locations, all product categories contain electrical equipment for use in Class I, II and III hazardous (classified) locations.

Electrical equipment for use in and relating to hazardous (classified) locations must also comply with the applicable requirements for the same type of equipment for use in unclassified locations. For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

HAZARDOUS (CLASSIFIED) LOCATIONS — GENERAL INFORMATION

Hazardous (classified) locations, as defined in the CEC, are locations where fire or explosion hazards may exist due to the presence of flammable gases, vapors or flammable liquids (Class I), combustible dusts (Class II), or ignitable fibers or flyings (Class III).

There are two independent classification systems as described in the CEC. One system divides all hazardous (classified) locations into Classes, Divisions and Groups. Division 1 is a location where a flammable or combustible atmosphere is present under normal operating conditions. Division 2 is a location where a combustible atmosphere is present only under abnormal conditions.

The other classification system divides only Class I hazardous (classified) locations into Zones and Gas Groups. Zone 0 is a location where an explosive or flammable atmosphere is present continuously or for long period of time. Zone 1 is a location where the explosive or flammable atmosphere is likely to occur during normal operation. Zone 2 is a location where the explosive or flammable atmosphere is not likely to occur in normal operation and, if it occurs, will exist for only a short time.

Protection against explosion in hazardous (classified) locations requires that all equipment that could be exposed to the flammable or combustible atmospheres be of a type suitable for installation in such locations. The Classes and Groups for which equipment has been Listed or Classified are shown in the individual Listings and Classifications under the respective categories and are marked on the equipment itself. In addition, intrinsically safe circuit wiring terminals and intrinsically safe equipment is marked "Intrinsically Safe."

Gas, Vapor and Dust Groups

The following paragraphs group flammable and explosive mixtures of specific gases, vapors and dusts in accordance with the CEC.

Class I Equipment

Equipment for use in Class I hazardous (classified) locations, as defined in the CEC, is tested with respect to acceptability of operation in the presence of flammable and explosive mixtures of specific vapors and gases with air. For purposes of location classification for Divisions 1 and 2, such mixtures have been grouped on the basis of their characteristics as follows:

Class I, Group A — Atmospheres containing acetylene.

Class I, Group B — Atmospheres containing acrolein, butadiene, ethylene oxide, propylene oxide, hydrogen, or fuel and combustible process gases containing more than 30% hydrogen by volume.

Class I, Group C — Atmospheres containing ethyl ether, ethylene, or gases or vapors of equivalent hazard.

Class I, Group D — Atmospheres containing acetone, ammonia, benzene, butane, cyclopropane, ethanol, gasoline, hexane, methane, methanol, naphtha, propane, or gases or vapors of equivalent hazard.

Class I, Zone 0, 1 and 2 Gas Groups

For purposes of location classifications for Zones, such mixtures have been grouped on the basis of their characteristics as follows:

Class I, Group IIA — Atmospheres containing acetone, ammonia, benzene, butane, ethanol, gasoline, hexane, methane, methanol, naphtha, propane, or gases or vapors of equivalent hazard.

Class I, Group IIB — Atmospheres containing ethyl ether, ethylene, or gases or vapors of equivalent hazard.

Class I, Group IIC — Atmospheres containing hydrogen, acetylene, ethyl nitrate, or gases or vapors of equivalent hazard.

The following table compares Class I, Division 1 and 2 Gas Groups with Class I, Zone 0, 1 and 2 Gas Groups. The gases shown are representative of others in the Group.

Division 1 & 2	Zone 0, 1 & 2
A (acetylene)	IIC (acetylene and hydrogen)
B (hydrogen)	IIC (acetylene and hydrogen)
C (ethylene)	IIB (ethylene)
D (propane)	IIA (propane)

Class I Equipment in Class II Locations

Equipment Listed or Classified for use in Class I locations is not necessarily acceptable for Class II locations as it may not be dust-tight or operate at a safe temperature when blanketed with dust.

Class II Equipment

Dust-ignition-proof equipment for use in Class II hazardous (classified) locations, as defined in the CEC, is tested with respect to acceptability of operation in the presence of combustible dusts in air. For purposes of location classification, the CEC groups combustible dust-air mixtures as follows:

Class II, Group E — Atmospheres containing combustible metal dusts, including aluminum, magnesium, and their commercial alloys, or other combustible dusts whose particle size, abrasiveness, and conductivity present an equivalent hazard.

Class II, Group F — Atmospheres containing carbon black, charcoal, coal or coke dusts which have more than 8% total volatile material, or atmospheres containing these dusts sensitized by other materials so that they present an explosion hazard.

Class II, Group G — Atmospheres containing combustible dusts not included in Group E or F, including flour, grain, wood, plastic and chemicals.

Class II Equipment in Class III Locations

Equipment Listed or Classified for Class II, Group G hazardous (classified) locations is also suitable for use in Class III locations, except for 1) those products marked for Division 2 only, and 2) fan-cooled type motors where there is a very large amount of lint or combustible flyings which are likely to choke or clog the air passages of the motor.

Class III Equipment

Equipment for use in Class III hazardous (classified) locations, as defined in the CEC, is tested with respect to acceptability of operation in the presence of easily ignitable fibers or flyings. These fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures.

Intrinsically Safe Circuits and Apparatus, and Associated Apparatus

Intrinsically safe circuits and apparatus may be investigated for any or all of the Classes and Groups as defined in the CEC. In an intrinsically safe circuit, the energy level available in the hazardous (classified) location under normal and abnormal conditions is sufficiently low as not to cause ignition of the specified explosive atmospheres. To maintain the low energy levels, it is necessary that the intrinsically safe and associated apparatus be installed and interconnected in accordance with the CEC and the instructions provided with the equipment.

Associated apparatus is apparatus in which the circuits are not necessarily intrinsically safe, but which affect the energy in the intrinsically safe circuits and are relied upon to maintain intrinsic safety. Associated apparatus is not intended for use in hazardous (classified) locations unless use in hazardous (classified) locations is specifically indicated.

When interconnecting associated apparatus with equipment for use in the hazardous (classified) location, special attention should be paid to installation instructions, control drawings, or product markings which may limit the types of connections that are acceptable.

Equipment Relating to Hazardous (Classified) Locations

Equipment relating to hazardous (classified) locations includes 1) devices, products, and materials for use in locations where it is necessary for safety to avoid the accumulation of static electricity on personnel or equipment, 2) anesthesia equipment, 3) devices not intended for operation in hazardous (classified) locations, but which are designed to indicate certain potentially dangerous conditions with respect to such locations, 4) electrical equipment not intended for installation in hazardous (classified) locations except for provision of certain intrinsically safe (low energy) circuit extensions as indicated in the individual Listings and Classifications, and 5) paint spray booths.

EQUIPMENT FOR USE IN AND RELATING TO CLASS I, II AND III, DIVISION 1 AND 2 HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AAIZ7)

Suitability of Listed or Classified Equipment

Equipment intended for use in a hazardous (classified) location Class and Group and marked "Division 1" (or "Div. 1") or without any Division indication is suitable for use in both Division 1 and 2 locations as defined in the CEC, and in unclassified locations. Equipment marked "Division 2" (or "Div. 2") is suitable only for Division 2 and unclassified locations. In addition, the CEC permits equipment Listed for Class I, Division 1 to be used in a Class I, Zone 1 or 2 location of the same gas group and with a suitable temperature rating. Equipment Listed for Class I, Division 2 is permitted to be used in a Class I, Zone 2 location of the same gas group and with a suitable temperature rating. Equipment marked for use in or relating to Class I, Zone 0 locations is also suitable for use in or relating to Zones 1 and 2 locations of the same gas group and with suitable temperature rating. Equipment marked for use in or relating to Class I, Zone 1 locations is also suitable for use in or relating to Class I, Zone 2 locations of the same gas group with suitable temperature rating. Equipment marked for use in or relating to Class I, Zone 2 locations is suitable only for use in or relating to those locations classified as Class I, Zone 2, and in unclassified locations.

In addition, equipment for use in hazardous (classified) locations is also suitable for use in unclassified locations.

RELATED EQUIPMENT

For additional information on equipment for use in Zone classified locations, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

For additional information on electrical equipment for use in unclassified locations, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

CLASS I TEMPERATURE CONSIDERATIONS

The marked operating temperature of the equipment is based on either the maximum external temperature or internal temperature of the equipment, depending on the protection technique used.

For Class I, Division 1 and Zone 1 equipment, in general, the operating temperature is the maximum temperature of external surfaces of the equipment. For Class I, Division 2 and Zone 0 or 2 equipment, in general, the operating temperature is the maximum temperature of all parts of the equipment, including internal parts, that may be exposed to the flammable material.

Equipment is required to be marked with the operating temperature or operating temperature code if the maximum operating temperature is more than 100°C (212°F).

This temperature marking should not exceed the ignition temperature of the specific gas or vapor to be encountered.

AMBIENT TEMPERATURES

Unless the equipment is marked otherwise, it has been investigated only for use under normal atmospheric conditions in an ambient temperature within the range of -25°C (-13°F) to +40°C (+104°F). Use of equipment under conditions of higher than normal atmospheric pressure or oxygen partial pressure, use in artificial atmospheres, and use under conditions of excessively high ambient temperatures can increase the likelihood of ignition of flammable atmospheres. In addition, low ambient temperatures may increase explosion pressures developed within explosion-proof equipment.

ENCLOSURE MODIFICATION AND MAINTENANCE

The integrity of an enclosure for explosion-proof or dust-ignition-proof equipment must be maintained. Making holes (other than conduit openings specified in the instructions) or alterations in the enclosure during installation may compromise the ability of the enclosure to contain the explosion or to exclude dust. Holding bolts and threaded parts must be screwed tight. The continued acceptability of the equipment will depend upon proper maintenance.

ENVIRONMENTAL CONSIDERATIONS

Unless the equipment is marked otherwise, it is intended to be used indoors where severe corrosive conditions are not likely to be present. Equipment investigated for severe environmental conditions is marked with an enclosure type designation or other designation indicating the suitability of the equipment in different environments. See **ENCLOSURE CONSIDERATIONS FOR ALL EQUIPMENT** below for more information.

ENCLOSURE CONSIDERATIONS FOR ALL EQUIPMENT

The CEC directs that equipment shall not be used in damp or wet locations; locations where exposed to gases, fumes, vapors, liquids or other agents having a deteriorating effect on the equipment; or locations where exposed to excessive temperatures unless the equipment is identified for use in such environments. To assist Authorities Having Jurisdiction, electrical equipment Listed or Classified for use in and relating to hazardous (classified) locations may be investigated for use in certain operating environments and marked with enclosure type numbers. The following table summarizes the intended uses of the various enclosure types:

EQUIPMENT FOR USE IN AND RELATING TO CLASS I, II AND III, DIVISION 1 AND 2 HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AAIZ7)

Provides a Degree of Protection Against the Following Environmental Conditions:	Type of Enclosure															
	1	2	3	3R	3S	3X	3RX	3SX	4	4X	5	6	6P	12	12K	13
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Falling dirt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dripping and light splashing of noncorrosive liquids	—	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rain, snow and sleet	—	—	X	X	X	X	X	X	X	X	—	X	X	—	—	—
Rain, snow and sleet (external mechanism shall be operable when ice covered)	—	—	—	—	X	—	—	X	—	—	—	—	—	—	—	—
Circulating dust, lint, fibers and flyings	—	—	X	—	X	X	—	X	X	X	—	X	X	X	X	X
Settling airborne dust, lint, fibers and flyings	—	—	X	—	X	X	—	X	X	X	X	X	X	X	X	X
Windblown dust	—	—	X	—	X	X	—	X	X	X	—	X	X	—	—	—
Hosedown and splashing water	—	—	—	—	—	—	—	—	X	X	—	X	X	—	—	—
Oil and coolant seepage	—	—	—	—	—	—	—	—	—	—	—	—	—	X	X	X
Oil or coolant spraying and splashing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	X
Corrosive agents	—	—	—	—	—	X	X	X	—	X	—	—	X	—	—	—
Occasional temporary submersion	—	—	—	—	—	—	—	—	—	—	—	X	X	—	—	—
Occasional prolonged submersion	—	—	—	—	—	—	—	—	—	—	—	—	X	—	—	—

Enclosures for indoor locations include Types 1, 2, 5, 7, 9, 12, 12K and 13; enclosures for indoor or outdoor locations include Types 3, 3R, 3S, 4, 4X, 6 and 6P.

In some cases, individual appliances and equipment may be marked "Raintight" or "Rainproof" indicating that they have been subjected to a test designed to simulate exposure to beating rain. For equipment designated as "Raintight" such exposure will not result in entrance of water. For equipment designated as "Rainproof" such exposure will not interfere with the operation of the apparatus or result in wetting of live parts and wiring within the enclosure.

Additionally or alternatively, IEC 60529, "Degrees of Protection Provided by Enclosures (IP Code)," describes a system for classifying the degrees of ingress protection (or IP Code) provided by the enclosures of electrical equipment as follows:

EQUIPMENT FOR USE IN AND RELATING TO CLASS I, II AND III, DIVISION 1 AND 2 HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AAIZ7)

First Characteristic Numeral	• Degrees of Protection Against Ingress of Solid Foreign Objects • Degrees of Protection Against Access to Hazardous Parts	Second Characteristic Numeral	Degrees of Protection Against Ingress of Water Harmful Effects
IP0X	• Nonprotected • Nonprotected	IPX0	Nonprotected
IP1X	• 50 mm diameter and greater	IPX1	Vertically dripping
IP2X	• Back of hand • 12.5 mm diameter and greater	IPX2	Dripping (15 degrees tilted)
IP3X	• Finger • 2.5 mm diameter and greater	IPX3	Spraying
IP4X	• Tool • 1.0 mm diameter and greater	IPX4	Splashing
IP5X	• Wire • Dust-protected	IPX5	Jetting
IP6X	• Wire • Dust-tight	IPX6	Powerful jetting
	• Wire	IPX7	Temporary immersion
		IPX8	Continuous immersion

FITTINGS AT SUPPLY ENTRIES

Consideration should be given to the Type or IP rating of fittings used at supply entries. When the manufacturer supplies a fitting with the enclosure, enclosures are to be connected to the wiring system using the fitting provided. If no fitting is provided by the manufacturer, the fitting employed must meet or exceed the Type or IP rating of the enclosure, so that the assembly maintains its protection against contaminants.

PROCESS SEALS

Process-connected electrical equipment provided with seals to prevent the migration of process fluids into the electrical system are either the single-seal or dual-seal types. The construction, testing and marking requirements for process seals are found in ANSI/ISA-12.27.01, "Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids."

REQUIREMENTS

The standards used to investigate these products address the risk of explosion associated with installation in a hazardous (classified) location, as well as the risk of fire and electric shock associated with any electrical equipment. Unless indicated otherwise in the Guide Information for the product category, the basic hazardous (classified) locations standards used to investigate these products with respect to risk of explosion are referenced below for the protection techniques shown.

Protection Technique	Standard
Explosion-proof	CSA-C22.2 No. 30-1986, "Explosion-Proof Enclosures for Use in Class I Hazardous Locations"
Dust-ignition-proof	CSA-C22.2 No. 25-1966, "Enclosures for Use in Class II Groups E, F and G Hazardous Locations," or CAN/CSA-E61241-1-1-2002, "Electrical Apparatus for Use in the Presence of Combustible Dust – Part 1-1: Electrical Apparatus Protected by Enclosures and Surface Temperature Limitation – Specification for Apparatus"
Intrinsic safety	CAN/CSA-C22.2 No. 157-1992, "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations"
Nonincendive circuits, components and equipment; hermetically sealed and sealed components; nonsparking equipment	CSA-C22.2 No. 213-1987, "Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations"
Purged and pressurized	ANSI/NFPA 496, "Standard for Purged and Pressurized Enclosures for Electrical Equipment"

The basic unclassified locations standard used to investigate these products with respect to risk of fire and electric shock is CSA-C22.2 No. 14,

"Industrial Control Equipment," unless specified otherwise in the general Guide Information for each product category.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

GLOBAL POSITIONING SYSTEMS

If provided as part of the equipment, global positioning system (GPS) and/or enhanced 911 (E911) hardware, GPS and/or E911 operating software, or other GPS-related and/or E911-related aspects of equipment have not been investigated for performance or reliability. The equipment has only been investigated for the explosion, fire, shock and casualty hazards required by the applicable hazardous (classified) locations standards. Certification of the equipment does not cover the performance or reliability of any GPS and/or E911 hardware, GPS and/or E911 operating software, or other GPS-related and/or E911-related aspects of the equipment. **UL makes no representations, warranties or certifications whatsoever regarding the performance or reliability of any GPS-related and/or E911-related functions of the equipment.**

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

MARINE EQUIPMENT

Certain equipment has been specifically investigated and certified for use aboard Canadian marine vessels. Such equipment has been investigated in accordance with the applicable requirements of UL and the Canadian Coast Guard. For additional information, see the general Guide Information for the specific product category. Equipment bearing UL's Marine Mark for Canada is suitable for use only with stranded copper wire.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

ELECTRICAL EQUIPMENT FOR USE IN ORDINARY LOCATIONS CERTIFIED FOR CANADA (AALZ7)

GENERAL

Electrical equipment for use in unclassified (ordinary) locations is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). Electrical equipment for use in hazardous (classified) locations, as defined by the CEC, may also be used in ordinary locations.

INVESTIGATION REQUIREMENTS AND STANDARDS

Electrical equipment for use in ordinary locations has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the CEC.

Some products are certified for uses not within the scope of the CEC. Such products are investigated for the specifications or the use conditions indicated in the general Guide Information for each product category.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

The general Guide Information for each product category describes the limitations relative to the products covered, such as current, voltage and horsepower limits, markings, special descriptions and installation provisions.

INSTALLATION REQUIREMENTS

Ordinary locations, as defined in the CEC, include:

Damp Location — An exterior or interior location that is normally or periodically subject to condensation of moisture in, on, or adjacent to electrical equipment and includes partially protected locations under canopies, marquees, roofed open porches, and similar locations.

Dry Location — A location not normally subject to dampness, but may include a location subject to temporary dampness as in the case of a building under construction, provided ventilation is adequate to prevent an accumulation of moisture.

Wet Location — A location in which uncontrolled liquids may drip, splash, or flow on or against electrical equipment.

Outdoor Use — In general, individual appliances and equipment have been investigated only for use indoors, in dry locations. An exception is where outdoor use is specifically permitted by the Rule of the CEC concerned with the product installation. See also the general Guide Information for the product category or included in the individual Listing. In some cases the title (e.g., Snow Movers, Swimming Pool Fixtures) indicates the conditions for which the product has been investigated.

Cord- and plug-connected appliances obviously intended for outdoor use, such as gardening appliances, are not intended for use in the rain, and should be stored indoors when not in use.

Enclosure Types

Rule 2-400 of the CEC specifies that equipment shall be identified for use in certain operating environments. Rule 2-112 provides guidance regarding protection against corrosion and Table 65 provides the basis for selecting motor controller enclosure types for use in specific locations. To assist inspection authorities, UL requires type designations on power distribution and control equipment enclosures such as cabinets and cutout boxes, enclosed panelboards or switchboards, meter sockets, enclosed circuit breakers or switches, industrial control and other equipment. The following table summarizes the intended uses of the various type enclosures for other than hazardous locations:

Enclosure Type Number	Provides a Degree of Protection Against the Following Environmental Conditions*
1	Indoor use
2	Indoor use, limited amounts of falling water
3R	Outdoor use, undamaged by the formation of ice on the enclosure**
3RX	Same as 3R plus resists corrosion
3	Same as 3R plus windblown dust
3X	Same as 3 plus resists corrosion
3S	Same as 3R plus windblown dust, external mechanisms remain operable while ice laden
3SX	Same as 3S plus resists corrosion
4	Outdoor use, splashing water, windblown dust, hose-directed water, undamaged by the formation of ice on the enclosure**
4X	Same as 4 plus resists corrosion
5	Indoor use to provide a degree of protection against settling airborne dust, falling dirt, and dripping noncorrosive liquids
6	Same as 3R plus entry of water during temporary submersion at a limited depth
6P	Same as 3R plus entry of water during prolonged submersion at a limited depth
12, 12K	Indoor use, dust, dripping noncorrosive liquids
13	Indoor use, dust spraying water, oil and noncorrosive coolants

*All type enclosures provide a degree of protection against ordinary corrosion and against accidental contact with the enclosed equipment when doors of covers are closed and in place. All type enclosures provide protection against a limited amount of falling dirt.

**All outdoor type enclosures provide a degree of protection against rain, snow and sleet. Outdoor enclosures are also suitable for use indoors if they meet the environmental conditions present.

An enclosure that complies with the requirements for more than one type of enclosure may be marked with multiple designations.

Enclosures marked with a type may also be marked as follows:

- A Type 1 enclosure may be marked "Indoor Use Only"
- A Type 3, 3X, 3S, 3SX, 4, 4X, 6 or 6P enclosure may be marked "Raintight"
- A Type 3R or 3RX enclosure may be marked "Rainproof"

- A Type 4, 4X, 6 or 6P enclosure may be marked "Watertight"
- A Type 3X, 3RX, 3SX, 4X or 6P enclosure may be marked "Corrosion Resistant"
- A Type 2, 5, 12, 12K or 13 enclosure may be marked "Driptight"
- A Type 3, 3X, 3S, 3SX, 5, 12K, or 13 enclosure may be marked "Dusttight"

For equipment designated "Raintight," testing designed to simulate exposure to beating rain will not result in entrance of water. For equipment designated "Rainproof," testing designed to simulate exposure to beating rain will not interfere with the operation of the apparatus or result in wetting of live parts and wiring within the enclosure. "Watertight" equipment is so constructed that water does not enter the enclosure when subjected to a stream of water. "Corrosion resistant" equipment is so constructed that it provides degree of protection against exposure to corrosive agents such as salt spray.

"Driptight" equipment is so constructed that falling moisture or dirt does not enter the enclosure. "Dusttight" equipment is so constructed that circulating or airborne dust does not enter the enclosure.

Sizes and Ratings

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

Marked ratings of utilization equipment include ampere, wattage or volt-ampere ratings. Motor-operated utilization equipment may also be marked with a horsepower rating. The actual marked ratings (other than the horsepower rating) and other markings or instructions, if any, are to be used to select branch-circuit conductors, branch-circuit overcurrent protection, control devices and disconnecting means.

The ampere or wattage marking on power-consuming equipment is valid only when the equipment is supplied at its marked rated voltage. In general, the current input to heating appliances or resistance heating equipment will increase in direct proportion to an increase in the supply voltage, while the current input to an induction motor supplying a constant load will increase approximately in direct proportion to a decrease in the supply voltage. These increases in current can cause overcurrent protection devices to open even when these devices are properly selected on the basis of nameplate ratings.

Appliance and Utilization Equipment Terminations

Except as noted in the general Guide Information for some product categories, most terminals, unless marked otherwise, are for use only with copper wire. If aluminum wire can be used, marking to indicate this fact is provided. Such marking is required to be independent of any marking on terminal connectors, such as on a wiring diagram or other visible location. The marking may be in an abbreviated form, such as "AL-CU."

Except as noted in the general Guide Information for some product categories, the termination provisions are based on the use of 60°C insulated conductors in circuits rated 100 A or less, and the use of 75°C insulated conductors in higher rated circuits as specified in Table 2 of the CEC. If the termination provisions on equipment are based on the use of other conductors, the equipment is either marked with both the size and temperature rating of the conductors to be used or with only the temperature rating of the conductors to be used. If the equipment is only marked for use with conductors having a higher (75 or 90°C) temperature rating (wire size not specified), the 60°C ampacities (for circuits rated 100 A or less) and 75°C ampacities (for circuits rated over 100 A) should be used to determine wire size. Conductors having a temperature rating higher than specified may be used, though not required, if the size of the conductors is determined on the basis of the 60°C ampacity (circuits rated 100 A or less) or 75°C ampacity (circuits rated over 100 A).

Distribution and Control Equipment Terminations

Most terminals are suitable for use only with copper wire. Where aluminum wire can or shall be used (some crimp terminals may be Listed only for aluminum wire), there is marking to indicate this. Such marking is required to be independent of any marking on terminal connectors, such as on a wiring diagram or other visible location. The marking may be in an abbreviated form, such as "AL-CU."

Except as noted in the following paragraphs or in the general Guide Information for some product categories, the termination provisions are based on the use of 60°C ampacities for wire size Nos. 14-1 AWG, and 75°C ampacities for wire size Nos. 1/0 AWG and larger, as specified in Table 2 of the CEC.

Some distribution and control equipment is marked to indicate the required temperature rating of each field-installed conductor. If the equipment, normally intended for connection by wire sizes within the range 14-1 AWG, is marked "75C" or "60/75C," it is intended that 75°C insulated wire may be used at full 75°C ampacity. Where the connection is made to a circuit breaker or switch within the equipment, such a circuit breaker or switch must also be marked for the temperature rating of the conductor.

A 75°C conductor temperature marking on a circuit breaker or switch normally intended for wire sizes 14-1 AWG does not in itself indicate that 75°C insulated wire can be used unless 1) the circuit breaker or switch is used by itself, such as in a separate enclosure, or 2) the equipment in which the circuit breaker or switch is installed is also so marked.

A 75 or 90°C temperature marking on a terminal (e.g., AL7, CU7AL, AL7CU or AL9, CU9AL, AL9CU) does not in itself indicate that 75 or 90°C insulated wire can be used unless the equipment in which the terminals are installed is marked for 75 or 90°C.

Higher temperature rated conductors than specified may be used if the size is based on the above statements.

Copper Pigtail Leads — Copper pigtail leads may be used with aluminum supply wires in dry locations if 1) the splicing devices are Listed for use in joining copper to aluminum, 2) there is sufficient wiring space, and 3) the means provided for connecting the wiring system are acceptable for the wire size used.

Wiring Devices — Supply terminals of 15 A and 20 A switches and receptacles not marked "CO/ALR" are for use with copper conductors only. Terminals marked "CO/ALR" are for use with aluminum and copper conductors.

Screwless pressure terminal connectors of the conductor push-in type are for use only with copper conductors, both solid and stranded, unless otherwise limited by marking.

Terminals of switches and receptacles rated 30 A and above not marked "AL/CU" are for use with copper conductors only. Terminals of switches rated 30 A and above marked "AL/CU" are for use with aluminum and copper conductors.

Wire Connectors — Combinations of dissimilar conductors in terminal or splicing connectors are acceptable only in dry locations and when the connectors are identified as suitable for such intermixing. See also the information under Wire Connectors and Soldering Lugs Certified for Canada (ZMVV7).

Terminals — Product terminals, including wire connectors and terminal screws, are acceptable for connection of only one conductor, unless there is marking or a wiring diagram indicating the number of conductors which may be connected.

Tightening Torque — Some equipment may be marked to show a tightening torque for wire connectors intended for use with field wiring.

Supply Cords — When flexible supply cords or cord sets are replaced on utilization equipment and appliances, the replacement should be of the same type, AWG size, voltage rating and temperature rating as originally used.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

MARINE EQUIPMENT

Certain equipment has been specifically investigated and certified for use aboard Canadian marine vessels, and for potential conformity to the installation and use provisions of the Canadian Coast Guard Technical Publication TP-1332. For additional information, see the general Guide Information for the specific product category. Equipment bearing UL's Marine Mark for Canada is suitable for use only with stranded copper wire.

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MECHANICAL EQUIPMENT AND ASSOCIATED PRODUCTS CERTIFIED FOR CANADA (AAME7)

GENERAL

Mechanical equipment includes mechanically operated and gasoline-powered products, worker safety-related products, toys, and other products that have been investigated for mechanical strength and operation with regard to personal injury and for other specific hazards.

This equipment is intended for use only as described in the general Guide Information for each product category and individual Listings. This equipment has only been investigated for use as described in the instructions and markings provided with the equipment. The use of the equipment in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category has not been investigated by UL.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

INDOOR AND OUTDOOR USE

Unless outdoor use is specifically indicated in the general Guide Information for the product category or included in the individual Listings of the product, individual appliances have been investigated only for use indoors, unless the product, by its inherent nature, is obviously intended for use outdoors.

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MECHANICAL EQUIPMENT AND ASSOCIATED PRODUCTS CERTIFIED FOR CANADA (AAME7)

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

MARINE PRODUCTS CERTIFIED FOR CANADA (AAMP7)

GENERAL

Marine products are specifically investigated and certified for use aboard Canadian marine vessels, and for potential conformity to the installation and use provisions of the Canadian Coast Guard Technical Publication TP-1332.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

In addition, certain products have been investigated with reference to environmental and public health effects and for potential conformity to the installation and use provisions of applicable environmental and public health requirements, if so indicated in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

EQUIPMENT FOR USE IN AND RELATING TO ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AANZ7)

GENERAL

Electrical equipment intended for use in and relating to Class I, Zone 0, 1 and 2 hazardous (classified) locations has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). Attention is called to the limitations of the individual Listings and Classifications specified in the general Guide Information for each product category, such as current, voltage, horsepower limits, markings, special descriptions and installation provisions.

Unless equipment is identified in 1) the product category title as relating to Zone classified hazardous locations or 2) the individual Listings as apparatus for use in unclassified locations, all product categories contain electrical equipment for use in Class I, Zone 0, 1 and 2 hazardous (classified) locations.

Regarding electrical equipment for use in and relating to Division classified locations, some general technical information is provided together with the specific technical information provided regarding Zone classified locations. For additional specific technical information regarding Division classified locations, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

Electrical equipment for use in and relating to hazardous (classified) locations must also comply with the applicable requirements for the same type of equipment for use in unclassified locations. For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

HAZARDOUS (CLASSIFIED) LOCATIONS — GENERAL INFORMATION

Class I hazardous (classified) locations, as defined in the CEC, are locations where fire or explosion hazards may exist due to the presence of flammable gases, vapors or flammable liquids. Equipment specifically investigated for hazardous (classified) locations is identified by a single Class (Class I) that is divided into Zones (0, 1 and 2) and gas Groups (IIA, IIB and IIC), as described in the CEC. Essentially, if the location has a flammable or combustible atmosphere present continuously or for long periods of time, it is a Zone 0 location. If the atmosphere is flammable or combustible and likely to exist under normal conditions, it is a Zone 1 location. If the atmosphere of flammable or combustible gases or vapors is not likely to exist in normal operation, it is a Zone 2 location.

Protection against explosion in hazardous (classified) locations requires that all equipment that could be exposed to the flammable or combustible atmospheres be of a type suitable for installation in such locations. The Class, Zone and Groups for which equipment has been Listed or Classified is shown in the individual Listings and Classifications under the respective categories and is marked on the equipment itself.

Gas and Vapor Groups

The following paragraphs group flammable and explosive mixtures of specific gases and vapors in accordance with the CEC classifications. For a complete list of group classifications for Class I materials, see IEC 60079-12, "Classification of Mixtures of Gases or Vapors with Air According to their Maximum Experimental Safe Gaps and Minimum Igniting Currents."

Equipment for use in Class I, Zone 0, 1 and 2 hazardous (classified) locations, as defined in the CEC, is tested with respect to acceptability of operation in the presence of flammable and explosive mixtures of specific vapors and gases with air. For purposes of location classification, such mixtures have been grouped on the basis of their characteristics as follows:

Class I, Group IIC — Atmospheres containing hydrogen, acetylene, ethyl nitrate, or gases or vapors of equivalent hazard.

Class I, Group IIB — Atmospheres containing ethyl ether, ethylene, or gases or vapors of equivalent hazard.

Class I, Group IIA — Atmospheres containing acetone, ammonia, benzene, butane, ethanol, gasoline, hexane, methane, methanol, naphtha, propane, or gases of vapors of equivalent hazard.

Intrinsically Safe Circuits and Apparatus, and Associated Apparatus

Intrinsically safe circuits and apparatus may be investigated for any or all of the Class I Zones and Groups as defined in the CEC. In an intrinsically safe circuit, the energy level available in the hazardous (classified) location under normal and abnormal conditions is sufficiently low as not to cause ignition of the specified explosive atmospheres. To maintain the low energy levels, it is necessary that the intrinsically safe and associated apparatus be installed and interconnected in accordance with the CEC and the instructions provided with the equipment.

Associated apparatus is apparatus in which the circuits are not necessarily intrinsically safe, but which affect the energy in the intrinsically safe circuits and are relied upon to maintain intrinsic safety. Associated apparatus is not intended for use in hazardous (classified) locations unless use in hazardous (classified) locations is specifically indicated.

When interconnecting associated apparatus with equipment for use in the hazardous (classified) location, special attention should be paid to installation instructions, control drawings, or product markings which may limit the types of connections that are acceptable.

Equipment Relating to Hazardous (Classified) Locations

Equipment relating to Class I, Zone 0, 1 and 2 hazardous (classified) locations includes electrical equipment not intended for installation in hazardous (classified) locations except for provision of certain intrinsically safe (low energy) circuit extensions as indicated in the individual Listings and Classifications.

Suitability of Listed or Classified Equipment

Equipment marked for use in or relating to Class I, Zone 0 locations is also suitable for Zone 1 and 2 locations of the same gas group and with similar temperature marking, and in unclassified locations. Equipment marked for use in or relating to Class I, Zone 1 locations is also suitable for use in or relating to Class I, Zone 2 locations of the same gas group with similar temperature marking, and in unclassified locations.

Equipment marked for use in or relating to Class I, Zone 2 locations is suitable only for use in or relating to those locations classified as Class I, Zone 2 and in unclassified locations. In addition, the CEC states that equipment that is Listed for Zone 0, 1 or 2 is permitted in a Class I, Division 2 location of the same gas group and with a suitable temperature rating.

In addition, equipment for use in hazardous (classified) locations is also suitable for use in unclassified locations.

RELATED EQUIPMENT

For additional information on equipment for use in Division classified locations, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

For additional information on electrical equipment for use in unclassified locations, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

PROTECTION TECHNIQUES

Equipment for use in Class I, Zone 0, 1 or 2 locations may employ one or more of the following protection techniques:

Location Classification	Protection Technique	Protection Technique Identification
Zone 0	Intrinsic safety (2 fault)	ia
Zone 1	Intrinsic safety (1 fault)	ib
	Flameproof	d
	Purged and pressurized	px, py
	Oil immersion	o
	Increased safety	e
	Encapsulation	m
	Powder filling	q
Zone 2	Nonsparking	nA
	Sparking with protected contacts	nC
	Restricted breathing	nR
	Energy-limited	nL
	Purged and pressurized	pz
Unclassified	Associated apparatus with I.S. connections for Zone 0 (2 fault)	[ia]
	Associated apparatus with I.S. connections for Zone 1 (1 fault)	[ib]

Intrinsic Safety — Equipment in which any spark or thermal effect produced under normal or fault conditions is incapable of causing ignition of the atmosphere. See **Intrinsically Safe Circuits and Apparatus, and Associated Apparatus** above for more information.

Flameproof — The enclosure of the equipment will withstand an internal explosion, and prevent passage of flame to the surrounding atmosphere. Care must be taken to maintain the length and clearance (gap) of flameproof joints in service.

Purged and Pressurized — A protective inert gas is maintained inside the equipment enclosure at a pressure above that of the surrounding atmosphere, in order to prevent ingress of the explosive gas or vapor.

Oil Immersion — Arcing contacts are immersed in a protective liquid.

Increased Safety — The equipment contains no normally arcing parts, and additional measures (such as larger spacings between wiring connections) are taken to prevent the possibility of high temperatures or sparks. A minimum IP rating of IP 54 is required.

Encapsulation — Arcing contacts are completely surrounded by an encapsulating material.

Powder Filling — Arcing contacts are surrounded by a filling material (glass or quartz powder).

Nonsparking — The equipment has no normally arcing parts or thermal effects capable of ignition.

Sparking with Protected Contacts — Arcing contacts are in nonincendive circuits, or are inside a hermetically sealed container or sealed device.

Restricted Breathing — The enclosure relies on tight seals and gaskets to prevent diffusion of the explosive atmosphere into the equipment enclosure. Provision for checking that the restricted breathing properties of the enclosure are maintained is provided.

Energy-Limited — No spark or thermal effect is capable of causing ignition of a given gas or vapor under specified conditions.

The one- or two-letter identification of the protection technique is marked on the product. Products employing multiple protection techniques are marked with all applicable identifications. For example, a control station containing a flameproof switch and an encapsulated pilot light, mounted in an increased safety enclosure, will be marked with all three protection techniques: "edm."

TEMPERATURE CONSIDERATIONS

For equipment investigated for Class I, Zone 0, 1 and 2 hazardous (classified) locations, the operating temperature is the maximum temperature of any external or internal surface to which the surrounding atmosphere has access, based on the protection method employed.

Equipment is required to be marked with the operating temperature or operating temperature code.

The marked temperature should not exceed the ignition temperature of the specific gas or vapor mixture to be encountered.

AMBIENT TEMPERATURES

Unless the equipment is marked otherwise, it has been investigated only for use under normal atmospheric conditions in an ambient temperature within the range of -20°C (-4°F) to +40°C (+104°F). Use of flameproof equipment under conditions of higher than normal atmospheric pressure or oxygen partial pressure, use in artificial atmospheres, and use under conditions of excessively high ambient temperatures can increase the likelihood of ignition of flammable atmospheres. In addition, low ambient temperatures may increase explosion pressures developed within the equipment. Plastic parts of enclosures or encapsulating materials may not maintain their integrity in excessively high or low ambient, unless marked otherwise.

ENCLOSURE MODIFICATION AND MAINTENANCE

The integrity of an enclosure must be maintained. Making holes (other than conduit openings specified in the instructions) or alterations in the enclosure during installation may compromise the ability of a flameproof enclosure to contain an explosion. Most other protection techniques require a minimum IP rating and alterations in the enclosure may impair the enclosure's ability to protect against ingress of contaminants or water. See **ENCLOSURE CONSIDERATIONS FOR ALL EQUIPMENT** below for more information. Holding bolts and threaded parts must be screwed tight. The continued acceptability of the equipment will depend upon proper maintenance.

ENVIRONMENTAL CONSIDERATIONS

Unless the equipment is marked otherwise, it is intended to be used indoors where severe corrosive conditions are not likely to be present. Equipment investigated for severe environmental conditions is marked with an enclosure type designation or other designation indicating the suitability of the equipment in different environments. See **ENCLOSURE CONSIDERATIONS FOR ALL EQUIPMENT** below for more information.

ENCLOSURE CONSIDERATIONS FOR ALL EQUIPMENT

The CEC directs that equipment shall not be used in damp or wet locations; locations where exposed to gases, fumes, vapors, liquids or other agents having a deteriorating effect on the equipment; or locations where exposed to excessive temperatures unless the equipment is identified for use in such environments. To assist Authorities Having Jurisdiction, electrical equipment Listed or Classified for use in and relating to hazardous (classified) locations may be investigated for use in certain operating environments and marked with enclosure type numbers. The following table summarizes the intended uses of the various enclosure types:

Provides a Degree of Protection Against the Following Environmental Conditions:	Type of Enclosure															
	1	2	3	3R	3S	3X	3RX	3SX	4	4X	5	6	6P	12	12K	13
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Falling dirt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

EQUIPMENT FOR USE IN AND RELATING TO ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AANZ7)

Provides a Degree of Protection Against the Following Environmental Conditions:	Type of Enclosure															
	1	2	3	3R	3S	3X	3RX	3SX	4	4X	5	6	6P	12	12K	13
Dripping and light splashing of noncorrosive liquids	—	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rain, snow and sleet	—	—	X	X	X	X	X	X	X	X	—	X	X	—	—	—
Rain, snow and sleet (external mechanism shall be operable when ice covered)	—	—	—	—	X	—	—	X	—	—	—	—	—	—	—	—
Circulating dust, lint, fibers and flyings	—	—	X	—	X	X	—	X	X	X	—	X	X	X	X	X
Settling airborne dust, lint, fibers and flyings	—	—	X	—	X	X	—	X	X	X	X	X	X	X	X	X
Windblown dust	—	—	X	—	X	X	—	X	X	X	—	X	X	—	—	—
Hosedown and splashing water	—	—	—	—	—	—	—	—	X	X	—	X	X	—	—	—
Oil and coolant seepage	—	—	—	—	—	—	—	—	—	—	—	—	—	X	X	X
Oil or coolant spraying and splashing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	X
Corrosive agents	—	—	—	—	—	X	X	X	—	X	—	—	X	—	—	—
Occasional temporary submersion	—	—	—	—	—	—	—	—	—	—	—	X	X	—	—	—
Occasional prolonged submersion	—	—	—	—	—	—	—	—	—	—	—	—	X	—	—	—

In some cases, individual appliances and equipment may be marked "Raintight" or "Rainproof," indicating that they have been subjected to a test designed to simulate exposure to beating rain. For equipment designated as "Raintight" such exposure will not result in entrance of water. For equipment designated as "Rainproof" such exposure will not interfere with the operation of the apparatus or result in wetting of live parts and wiring within the enclosure.

Enclosures for indoor locations include Types 1, 2, 5, 7, 9, 12, 12K and 13; enclosures for indoor or outdoor locations include Types 3, 3R, 3S, 4, 4X, 6 and 6P.

Additionally or alternatively, IEC 60529, "Degrees of Protection Provided by Enclosures (IP Code)," describes a system for classifying the degrees of ingress protection (or IP Code) provided by the enclosures of electrical equipment as follows:

EQUIPMENT FOR USE IN AND RELATING TO ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AANZ7)

First Characteristic Numeral	• Degrees of Protection Against Ingress of Solid Foreign Objects • Degrees of Protection Against Access to Hazardous Parts	Second Characteristic Numeral	Degrees of Protection Against Ingress of Water Harmful Effects
IP0X	• Nonprotected	IPX0	Nonprotected
IP1X	• Nonprotected • 50 mm diameter and greater	IPX1	Vertically dripping
IP2X	• Back of hand • 12.5 mm diameter and greater • Finger	IPX2	Dripping (15 degrees tilted)
IP3X	• 2.5 mm diameter and greater • Tool	IPX3	Spraying
IP4X	• 1.0 mm diameter and greater • Wire	IPX4	Splashing
IP5X	• Dust-protected • Wire	IPX5	Jetting
IP6X	• Dust-tight • Wire	IPX6	Powerful jetting
		IPX7	Temporary immersion
		IPX8	Continuous immersion

FITTINGS AT SUPPLY ENTRIES

Consideration should be given to the Type or IP rating of fittings used at supply entries. When the manufacturer supplies a fitting with the enclosure, enclosures are intended to be connected to the wiring system using the fitting provided. If no fitting is provided by the manufacturer, the fitting employed must meet or exceed the Type or IP rating of the enclosure, so that the assembly maintains its protection against contaminants.

PROCESS SEALS

Process-connected electrical equipment provided with seals to prevent the migration of process fluids into the electrical system are either the single-seal or dual-seal types. The construction, testing and marking requirements for process seals are found in ANSI/ISA-12.27.01, ''Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids.''

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate these products with respect to risk of explosion are indicated below for the location classifications and protection techniques shown. Note that for all equipment, CAN/CSA-C22.2 No. 60079-0 (2011), ''Explosive Atmospheres – Part 0: Equipment – General Requirements,'' is also used.

Location Classification	Canadian Standard	Protection Technique Identification
Zone 0		ia
	CAN/CSA-C22.2 No. 60079-11 (2011),''Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety 'i'"	
Zone 1		d
	CAN/CSA-C22.2 No. 60079-1 (2011), "Explosive Atmospheres – Part 1: Equipment Protection by Flameproof Enclosures 'd'"	
		px, py
	CAN/CSA-C22.2 No. 60079-2 (2012), "Explosive Atmospheres – Part 2: Equipment Protection by Pressurized Enclosures 'p'"	
		q
	CAN/CSA-C22.2 No. 60079-5 (2011), "Explosive Atmospheres – Part 5: Equipment Protection by Powder Filling 'q'"	

Location Classification	Canadian Standard	Protection Technique Identification
		o
	CAN/CSA-C22.2 No. 60079-6 (2011), "Explosive Atmospheres – Part 6: Equipment Protection by Oil Immersion 'o'"	
		e
	CAN/CSA-C22.2 No. 60079-7 (2012), "Explosive Atmospheres – Part 7: Equipment Protection by Increased Safety 'e'"	
		ib
	CAN/CSA-C22.2 No. 60079-11 (2011),"Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety 'i'"	
		m
	CAN/CSA-C22.2 No. 60079-18 (2012), "Explosive Atmospheres – Part 18: Equipment Protection by Encapsulation 'm'"	
Zone 2		pz
	CAN/CSA-C22.2 No. 60079-2 (2012), "Explosive Atmospheres – Part 2: Equipment Protection by Pressurized Enclosures 'p'"	
		nA, nC, nL, nR, nZ
	CAN/CSA-C22.2 No. 60079-15 (2012), "Electrical Apparatus for Explosive Gas Atmospheres – Part 15: Construction, Test and Marking of Type of Protection 'n' Electrical Apparatus"	
Unclassified		[ia], [ib]
	CAN/CSA-C22.2 No. 60079-11 (2011),"Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety 'i'"	

The basic unclassified locations standard used to investigate these products with respect to risk of fire and electric shock is CSA-C22.2 No. 14, "Industrial Control Equipment,'' unless otherwise specified in the general Guide Information for each product category.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

GLOBAL POSITIONING SYSTEMS

If provided as part of the equipment, global positioning system (GPS) and/or enhanced 911 (E911) hardware, GPS and/or E911 operating software, or other GPS-related and/or E911-related aspects of equipment have not been investigated for performance or reliability. The equipment has only been investigated for the explosion, fire, shock and casualty hazards required by the applicable hazardous (classified) locations standards. Certification of the equipment does not cover the performance or reliability of any GPS and/or E911 hardware, GPS and/or E911 operating software, or other GPS-related and/or E911-related aspects of the equipment. **UL makes no representations, warranties or certifications whatsoever regarding the performance or reliability of any GPS-related and/or E911-related functions of the equipment.**

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switch-

board may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

MARINE EQUIPMENT

Certain equipment has been specifically investigated and certified for use aboard Canadian marine vessels. Such equipment has been investigated in accordance with the applicable requirements of UL and the Canadian Coast Guard. For additional information, see the general Guide Information for the specific product category. Equipment bearing UL's Marine Mark for Canada is suitable for use only with stranded copper wire.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

PLUMBING AND ASSOCIATED PRODUCTS CERTIFIED FOR CANADA (AAPP7)

GENERAL

Plumbing products include plumbing fixtures, fixture fittings, pipe and fittings, and appliances, as well as accessories associated with such equipment.

This equipment is intended for use only as described in the general Guide Information for each product category and individual Listings. This equipment has only been investigated for use as described in the instructions and markings provided with the equipment. The use of the equipment in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category has not been investigated by UL.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

In addition, certain products have been investigated with reference to environmental and public health effects and for potential conformity to the installation and use provisions of applicable environmental and public health requirements, if so indicated in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

INDOOR AND OUTDOOR USE

Unless outdoor use is specifically indicated in the general Guide Information for the product category or included in the individual Listings of the product, individual appliances have been investigated only for use indoors, unless the product, by its inherent nature, is obviously intended for use outdoors.

ELECTRICAL INSTALLATIONS

General — The ampere or wattage marking on electrical power-consuming equipment is valid only when the equipment is supplied at its marked rated voltage. In general, the current input to electric heating appliances or resistance heating equipment will increase in direct proportion to an increase in the supply voltage, while the current input to an induction motor supplying a constant load will increase approximately in direct proportion to a decrease in the supply voltage. These increases in current can cause overcurrent protection devices to open even when these devices are properly selected on the basis of nameplate ratings.

Supply Conductors — Except as noted in the general Guide Information for some product categories, most terminals are for use only with copper wire unless marked otherwise. If aluminum wire can be used, marking to indicate this fact is provided. Such marking is required to be independent of any marking on terminal connectors, such as on a wiring diagram or other visible location. The marking may be in an abbreviated form, such as "AL-CU."

Except as noted below or in the general Guide Information for certain product categories, the electrical termination provisions on equipment are based on the use of 60°C insulated conductors in circuits rated 100 A or less, and the use of 75°C insulated conductors in higher rated circuits.

If the electrical termination provisions on equipment are based on the use of other conductors, the equipment is either marked with both the size and temperature rating of the conductors to be used or with only the temperature rating of the conductors to be used. If the equipment is only marked for use with conductors having a higher (75 or 90°C) temperature rating (wire size not specified), the 60°C ampacities (for circuits rated 100 A or less) and 75°C ampacities (for circuits rated over 100 A) specified in Table 2 of the CEC should be used to determine wire size. Conductors having a temperature rating higher than specified may be used, though not required, if the size of the conductors is determined on the basis of the 60°C ampacity (circuits rated 100 A or less) or 75°C ampacity (circuits rated over 100 A).

Terminations — Copper pigtail leads may be used with aluminum supply wires in dry locations if 1) the splicing devices are Listed for use in joining copper to aluminum, 2) there is sufficient wiring space, and 3) the means provided for connecting the wiring system are acceptable for the wire size used.

Supply terminals of 15 A and 20 A switches and receptacles not marked "CO/ALR" are for use with copper conductors only. Terminals marked "CO/ALR" are for use with aluminum or copper conductors.

Screwless pressure terminal connectors of the conductor push-in type are for use only with copper conductors, both solid and stranded unless otherwise limited by marking.

Terminals of switches and receptacles rated 30 A and above not marked "AL/CU" are for use with copper conductors only. Terminals of switches rated 30 A and above marked "AL/CU" are for use with aluminum or copper conductors.

Combination of dissimilar conductors in terminal or splicing connectors is acceptable only in dry locations and when the connectors are identified as suitable for such intermixing.

Hazardous Locations — Electrical equipment and appliances are not intended for use in hazardous (classified) locations, as defined in the CEC, unless specifically identified as suitable for use in hazardous locations.

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FLAMMABLE AND COMBUSTIBLE LIQUIDS AND GASES EQUIPMENT CERTIFIED FOR CANADA (AAPQ7)

GENERAL

This equipment is intended for the storing, containing, conveying, dispensing, regulating or use of flammable and combustible gases, liquids or waste materials. This equipment also includes chemical products that are Classified with respect to fire hazard.

This equipment is intended for use only with the liquids and gases described in the general Guide Information for each product category and individual Listings. This equipment has only been investigated for use as described in the instructions and markings provided with the equipment. The use of the equipment with other liquids and gases, and in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category, has not been investigated by UL.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

INDOOR AND OUTDOOR USE

Unless outdoor use is specifically indicated in the general Guide Information for the product category or included in the individual Listings of the product, individual appliances have been investigated only for use indoors, unless the product, by its inherent nature, is obviously intended for use outdoors.

ELECTRICAL INSTALLATIONS

FLAMMABLE AND COMBUSTIBLE LIQUIDS AND GASES EQUIPMENT CERTIFIED FOR CANADA (AAPQ7)

General — The ampere or wattage marking on electrical power-consuming equipment is valid only when the equipment is supplied at its marked rated voltage. In general, the current input to electric heating appliances or resistance heating equipment will increase in direct proportion to an increase in the supply voltage, while the current input to an induction motor supplying a constant load will increase approximately in direct proportion to a decrease in the supply voltage. These increases in current can cause overcurrent protection devices to open even when these devices are properly selected on the basis of nameplate ratings.

Supply Conductors — Except as noted in the general Guide Information for some product categories, most terminals are for use only with copper wire unless marked otherwise. If aluminum wire can be used, marking to indicate this fact is provided. Such marking is required to be independent of any marking on terminal connectors, such as on a wiring diagram or other visible location. The marking may be in an abbreviated form, such as "AL-CU."

Except as noted below or in the information at the beginning of certain product categories, the electrical termination provisions on equipment are based on the use of 60°C insulated conductors in circuits rated 100 A or less and the use of 75°C insulated conductors in higher rated circuits.

If the electrical termination provisions on equipment are based on the use of other conductors, the equipment is either marked with both the size and temperature rating of the conductors to be used or with only the temperature rating of the conductors to be used. If the equipment is only marked for use with conductors having a higher (75 or 90°C) temperature rating (wire size not specified), the 60°C ampacities (for circuits rated 100 A or less) and 75°C ampacities (for circuits rated over 100 A) specified in Table 2 of the CEC should be used to determine wire size. Conductors having a temperature rating higher than specified may be used, though not required, if the size of the conductors is determined on the basis of the 60°C ampacity (circuits rated 100 A or less) or 75°C ampacity (circuits rated over 100 A).

Terminations — Copper pigtail leads may be used with aluminum supply wires in dry locations if 1) the splicing devices are Listed for use in joining copper to aluminum, 2) there is sufficient wiring space, and 3) the means provided for connecting the wiring system are acceptable for the wire size used.

Supply terminals of 15 A and 20 A switches and receptacles not marked "CO/ALR" are for use with copper conductors only. Terminals marked "CO/ALR" are for use with aluminum or copper conductors.

Screwless pressure terminal connectors of the conductor push-in type are for use only with copper conductors, both solid and stranded unless otherwise limited by marking.

Terminals of switches and receptacles rated 30 A and above not marked "AL/CU" are for use with copper conductors only. Terminals of switches rated 30 A and above marked "AL/CU" are for use with aluminum or copper conductors.

Combination of dissimilar conductors in terminal or splicing connectors are acceptable only in dry locations and when the connectors are identified as suitable for such intermixing.

Hazardous Locations — Electrical equipment and appliances are not intended for use in hazardous (classified) locations, as defined in the CEC, unless specifically identified as suitable for use in hazardous locations.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

ROOFING MATERIALS AND SYSTEMS CERTIFIED FOR CANADA (AARM7)

GENERAL

Roofing materials and systems are investigated for protection from external fire exposure. Roof deck assemblies are investigated for performance under internal fire exposures and for uplift resistance.

These materials are intended for use only in specific construction designs as described in the general Guide Information for each product category and individual Listings. The use of the materials in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category has not been investigated by UL.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a

published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC), and the applicable model codes identified in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

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ACCESS CONTROL SYSTEM UNITS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AATF7)

USE

This category covers units for access control systems, providing a means of regulating or controlling entry into an area, or access to or the use of a device by electrical, electronic and/or mechanical means.

Intrinsically safe systems covered under this category have been investigated on the basis that all equipment connected to the system is certified as part of the system unless otherwise indicated and is used as intended.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Access Control System Unit for Hazardous Locations,'' ''Access Control System (Associated Apparatus)'' or ''Access Control System Unit (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

ADAPTERS, VEHICLE BATTERY CERTIFIED FOR CANADA (AATX7)

USE

This category covers portable adapters that are intended to be supplied from the battery-powered electrical system of a vehicle. Connection to a vehicle electrical system is by means of a connector intended for insertion into a cigarette lighter receptacle or vehicle power outlet. Vehicle battery adapters may supply output for appliances such as portable computers, telephones, radios, tape players, battery chargers and tools.

Products covered under this category include (1) cord assemblies consisting of the connector for insertion into a receptacle, a flexible cord and connector intended for connection to an appliance, (2) units consisting of the connector for insertion into a receptacle, a flexible cord and permanently attached filtering or regulating circuitry, which may include an additional enclosure, output cord and connector or battery receptacle.

This category does not cover (1) products intended for marine use in areas where ignition-protected equipment is required, and (2) power inverters intended to be supplied from the battery-powered electrical system of a vehicle; see Power Converters/Inverters and Power Converter/Inverter Systems Certified for Canada (QPPY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1, ''General Use Power Supplies,'' in addition to one or more of the following:

CSA Technical Information Letter No. I-35, ''Interim Certification Requirements for Inverters for Use in Vehicles''
CAN/CSA-C22.2 No. 107.2, ''Battery Chargers''
CAN/CSA-C22.2 No. 223, ''Power Supplies with Extra-Low-Voltage Class 2 Outputs''
CAN/CSA-C22.2 No. 60950-1 (2007), ''Information Technology Equipment – Safety – Part 1: General Requirements''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Vehicle Battery Adaptor,'' ''Vehicle Battery Adapter'' (or ''VBA''), ''Vehicle Power Adapter'' (or ''VPA'') or ''Cigarette Lighter DC Power Supply,'' or other appropriate product name as shown in the individual Listings.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

ADVERTISING DISPLAYS, NONILLUMINATED CERTIFIED FOR CANADA (AAVU7)

USE

This category covers electrically operated, nonilluminated units intended to draw attention to, or to display, demonstrate or advertise products.

Advertising displays intended for permanent installation indoors only are so marked. Cord-and-plug-connected advertising displays suitable for outdoor use are marked ''Outdoor.''

RELATED PRODUCTS

Advertising displays including illumination are covered under Signs Certified for Canada (UXYT7).

Advertising displays that include a changing-message sign are covered under Signs Certified for Canada (UXYT7) and Signs, Changing Message Certified for Canada (UYFS7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207 (1989), ''Portable and Stationary Electric Signs and Displays.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Advertising Display,'' ''Non-Illuminated Advertising Display'' or ''Animated Display,'' or other appropriate product name.

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AIR CONDITIONING EQUIPMENT CERTIFIED FOR CANADA (AAYZ7)

ACCESSORIES, AIR CONDITIONING EQUIPMENT CERTIFIED FOR CANADA (ABFY7)

GENERAL

This category covers accessories intended for installation only on certified equipment as designated in the individual certifications of the equipment and accessory. These accessories are intended primarily for field installation, but may be factory installed.

The equipment on which an accessory covered under this category may be field installed is marked to indicate that it is certified for use with the specific accessory as designated by model, catalog number, part number, etc. in this category. Markings on the equipment also indicate any changes in the equipment ratings with the accessory installed.

Information concerning field-wiring connections, mounting location, installation clearances, etc., are marked on the accessory, and/or in detailed installation instructions accompanying each accessory.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 236 (2005), ''Heating and Cooling Equipment,'' in addition to the standards applicable to the heating and cooling equipment on which the heater assemblies are intended to be installed.

Alternatively, single-phase appliances rated not more than 250 V, and all other appliances rated not more than 600 V are investigated to CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Electrical Appliances, Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60335-2-40 (2012), ''Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Air Conditioning Equipment Accessory.''

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ACCESSORIES, AIR-DUCT MOUNTED CERTIFIED FOR CANADA (ABQK7)

USE AND INSTALLATION

This category covers products consisting of parts and/or subassemblies employing ultraviolet lamps for the purpose of treating air by the effects of ultraviolet radiation and having provisions for mounting on heating and ventilation ducts used for air distribution.

This equipment is intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

PRODUCT MARKINGS

Information concerning field-wiring connections, mounting location, installation clearances, etc., are either marked on the accessory and/or in detailed installation instructions accompanying each accessory.

Products intended for use with germicidal lamps are marked ''This product (fixture) is designed for use with germicidal lamps and must be installed in compliance with competent technical directions so that the user's eye and bare skin will not be subjected to ultraviolet rays.''

Accessories, Air-duct Mounted Certified for Canada (ABQK7)−*Continued*

FACTORS NOT INVESTIGATED

The health aspects associated with the use of these products and their ability to aid in disinfection of environmental air have not been investigated. This limitation is specified in the instruction manual and on the product for all products covered under this category.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12 (1982), ''Portable Luminaires,'' CSA-C22.2 No. 250.0 (2004), ''Luminaires,'' and CAN/CSA-C22.2 No. 236 (2005), ''Heating and Cooling Equipment,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

AIR DUCT MOUNTED ACCESSORY
WITH RESPECT TO ELECTRIC SHOCK, FIRE AND CASUALTY HAZARDS ONLY
Control No.

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AIR CONDITIONERS, PACKAGED TERMINAL CERTIFIED FOR CANADA (ACKZ7)

USE AND INSTALLATION

This category covers packaged terminal air conditioners rated 600 V or less, intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' They consist of a wall sleeve and a combination of assemblies designed as a unit, and are intended as the prime source of refrigeration and dehumidification. They may also have provision for heating by hot water, reverse cycle refrigeration, steam, electricity or gas-fired burner(s). They are intended for installation through walls and are basically intended to serve a single room, zone or space although some units may have provision to additionally serve an adjacent room. These units employ alternating current, hermetic refrigerant motor compressors with factory-charged refrigeration systems and include a means for ventilation and circulating air.

This category does not cover equipment intended for connection to duct systems for the purpose of providing central cooling and/or heating.

Permanently connected units are intended to be connected to a branch circuit protected by overcurrent devices as specified on the data plate. This marked protective device rating is the maximum for which the unit has been investigated and found acceptable. If time-delay fuses are required for restarting, the unit is marked to this effect.

Cord-connected units that require a circuit breaker or time-delay fuses to permit restarting are marked to this effect.

Units employing gas heat are intended to be installed in accordance with the installation instructions and markings on the appliance, and are intended to be connected to a gas supply of the type specified on the appliance. Equipment is intended to be installed in accordance with the current edition of ANSI Z223.1/NFPA 54, ''National Fuel Gas Code.''

RELATED PRODUCTS

See Air Conditioners, Room Certified for Canada (ACOT7) and Gas-fired Room Heaters, Vented Certified for Canada (LPNH7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate the refrigeration portion of the products in this category are CSA-C22.2 No. 117, ''Room Air Conditioners,'' and CSA-C22.2 No. 236, ''Heating and Cooling Equipment,'' or CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Appliances, Part 1: General Requirements,'' and CAN/CSA-C22.2 No.

Air Conditioners, Packaged Terminal Certified for Canada (ACKZ7)−*Continued*

60335-2-40 (2012), ''Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.''

The basic standard used to investigate the gas heating portion of the products in this category, if provided, is the current edition and effective addenda thereto of ANSI Z21.86/CSA 2.32, ''Vented Gas-Fired Space Heating Appliances.''

UL MARK

The Listing Mark and Gas-fired Listing Mark, if gas heat is provided, of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Packaged Terminal Air Conditioner,'' ''Section of Packaged Terminal Air Conditioner'' or ''Cooling Portion of Packaged Terminal Air Conditioner.''

The Gas-fired Listing Mark for the gas heating portion of these products, if provided, includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name ''Gas Heating Portion of Packaged Terminal Air Conditioner,'' and the standard designation ''ANS Z21.86(+) CSA-2.32(+)-(++) Fan-Type Direct Vent Wall Furnace.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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AIR CONDITIONERS, ROOM CERTIFIED FOR CANADA (ACOT7)

GENERAL

This category covers room air conditioners and recreational vehicle (RV) air conditioners. They are encased assemblies designed as a unit and intended as the prime source of cooling and dehumidification, intended to serve a single room, zone, or space. These products may be self-contained or split-system. Accessories intended for use with room air conditioners are also covered under this category.

INSTALLATION

This equipment is rated 600 V ac or less and is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Room air conditioners are intended for installation in windows, through walls, or as consoles located in or adjacent to the room, zone, or space to be conditioned. They may also be split-system, where the evaporator section is installed inside, and the condensing unit is installed outside. The two sections are connected by refrigerant piping and electrical wiring.

These units employ hermetic refrigerant motor-compressors with factory-charged refrigeration systems and include a means for circulating air. They may also have provision for electric heating, reverse cycle heating, and ventilation. Room air conditioners are not intended for connection to duct systems for the purpose of providing central cooling and/or heating. RV air conditioners may be ducted to remote areas of the vehicle as specified in the installation instructions, which include the minimum duct size, maximum length, and minimum register size.

A console or in-wall type room air conditioner may have provision to additionally serve a single adjacent room.

Split-system room air conditioners are designed for field interconnection with a matching section. Such units and sections are marked to relate the two for proper installation. The sections may be shipped separately.

RV air conditioners are intended for roof-top or underfloor mounting as indicated in the installation instructions, and are intended only for permanent connection to the source of electrical supply.

Permanently connected units are intended to be connected to a branch circuit protected by overcurrent devices that do not exceed the value marked on the data plate or attached wiring diagram. This marked protective device rating is the maximum for which the unit has been investigated and found acceptable. If the marking specifies fuses, the unit is intended to be protected by fuses only. If time-delay fuses are required for restarting, the unit is so marked.

PRODUCT MARKINGS

Cord-connected units that require circuit breakers or time-delay fuses to permit restarting are so marked.

Units with water-cooled condensers investigated for connection to ground water sources are so marked.

Air Conditioners, Room Certified for Canada (ACOT7)−*Continued*

Some equipment may be designed to accept accessories installed in the field. In such cases, both the room air conditioner and the accessory are marked to relate the two for proper installation.

If parts or sections of the room air conditioner are separately shipped from the factory, they are marked to relate the sections to one another for proper installation.

RELATED PRODUCTS

Packaged terminal air conditioners are covered under Air Conditioners, Packaged Terminal Certified for Canada (ACKZ7).

Air conditioners for spot cooling or environmental control of electronic enclosures are covered under Air Conditioners, Special Purpose Certified for Canada (ACVS7).

Dehumidifiers are covered under Dehumidifiers, Refrigeration Type Certified for Canada (AFFT7).

Products Verified for energy efficiency are covered under Air Conditioners, Room Verified for Energy Efficiency (ZYAT).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 117, ''Room Air Conditioners.''

Split-system air conditioners are investigated to CSA-C22.2 No. 236, ''Heating and Cooling Equipment.''

Alternatively, the basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Appliances, Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60335-2-40 (2012), ''Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.''

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Room Air Conditioner,'' ''Split System Air Conditioner,'' ''Split Type Air Conditioner,'' ''Section of Room Air Conditioner'' or ''Accessory for Room Air Conditioner.''

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AIR CONDITIONERS, SPECIAL PURPOSE CERTIFIED FOR CANADA (ACVS7)

GENERAL

This category covers equipment designed for special purposes, such as portable spot cooling, environmental control of electronic enclosures, or supplementary cooling of computer rooms or computer equipment. These products may be self-contained or sectional, and are designed to provide conditioned air to a single room or space. Accessories are also covered under this category.

INSTALLATION

This equipment is rated 600 V or less and is intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This equipment consists of one or more factory-made sections. If the equipment is provided in two or more sections, each such section is designed for field interconnection with a matched section(s) to make the air conditioner assembly. Unless so indicated in the individual certifications, the evaporator blower is provided as part of the assembly, and may be an integral part of the evaporator section or furnished as a separate section. The individual certifications show the distinctive designation of each section comprising the assembly.

The proper method of electrical installation (number of branch circuits, disconnects, etc.) is shown on the wiring diagram and/or marking required to be attached to the unit, if intended for permanent connection to the source of electrical supply.

Accessories for special purpose air conditioners are provided with instructions for installation into the product.

Units suitable for use with certified field-installed accessories, such as electric resistance heaters, are specifically indicated in the individual certifications.

PRODUCT MARKINGS

Units suitable for outdoor installation are so marked. Units not marked as suitable for outdoor installation are for indoor use only.

Air Conditioners, Special Purpose Certified for Canada (ACVS7)−*Continued*

Where a clearance is required to be maintained to combustible construction, the minimum clearance is designated in the individual certifications and is also marked on the unit. Unless otherwise indicated, the designated clearances (other than "zero") are based on tests of units with uninsulated sheet-metal ducts and plenum attached. Under these conditions, temperatures below established criteria have been measured on a wooden test enclosure, representing combustible construction, spaced at the specified clearance (air) from the unit, ducts and plenum.

Some equipment is designed to accept accessories installed in the field. In such cases, both the air conditioner and the accessory are marked to relate the two for proper installation.

RELATED PRODUCTS

See Air Conditioners, Room Certified for Canada (ACOT7), Air Conditioners, Packaged Terminal Certified for Canada (AFFT7), Dehumidifiers, Refrigeration Type Certified for Canada (ACKZ7) and Heating and Cooling Equipment Certified for Canada (LZFE7).

Equipment without a refrigeration system is covered under Heating and Cooling Equipment Certified for Canada (LZFE7).

Permanently connected computer room air conditioners are covered under Heating and Cooling Equipment Certified for Canada (LZFE7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 236 (1990), "Heating and Cooling Equipment," CSA-C22.2 No. 117, "Room Air Conditioners," or CAN/CSA-C22.2 No. 60335-1 (2011), "Safety of Household and Similar Appliances, Part 1: General Requirements," and CAN/CSA-C22.2 No. 60335-2-40 (2012), "Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers."

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Special Purpose Air Conditioner," "Section of Special Purpose Air Conditioner" or "Accessory for Special Purpose Air Conditioner," or other appropriate product name as shown in the individual Listings.

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PACKAGED TERMINAL AIR CONDITIONERS, REPLACEMENT CERTIFIED FOR CANADA (ADAU7)

GENERAL

This category covers replacement packaged terminal air conditioner and replacement packaged terminal heat pump chassis investigated for field installation with existing wall sleeves, louvers, and panels as marked on the unit. They are rated 600 V or less and intended as the prime source of air conditioning and dehumidification.

These units may also have provision for heating by hot water, reverse-cycle refrigeration, steam or electric resistance elements. They employ alternating current, hermetic refrigerant motor-compressors with factory-charged refrigeration systems, and include a means for ventilating and circulating air.

INSTALLATION

This equipment is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and is intended for installation through walls and to serve a single room, zone or space, although some units may have provision to additionally serve an adjacent room.

Permanently connected units are intended to be connected to a branch circuit protected by overcurrent devices that do not exceed the value marked on the data plate or attached wiring diagram. This marked protective device rating is the maximum for which the unit has been investigated and found acceptable. If the marking specifies fuses, the unit is intended to be protected by fuses only. If time-delay fuses are required for restarting, the unit is so marked.

PRODUCT MARKINGS

Cord-connected units requiring a circuit breaker or time-delay fuses to permit restarting are so marked.

Units are marked to indicate the existing wall sleeves, louvers and panels with which they are to be used and field installed.

Packaged Terminal Air Conditioners, Replacement Certified for Canada (ADAU7)−*Continued*

RELATED PRODUCTS

Room air conditioners are covered under Air Conditioners, Room Certified for Canada (ACOT7).

Air conditioners intended for spot cooling or environmental control of electronic enclosures are covered under Air Conditioners, Special Purpose Certified for Canada (ACVS7).

Dehumidifiers are covered under Dehumidifiers, Refrigeration Type Certified for Canada (AFFT7).

Air-conditioning equipment designed for connection to duct systems for the purpose of providing central cooling and/or heating is covered under Heating and Cooling Equipment Certified for Canada (LZFE7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 117, "Room Air Conditioners," and CSA-C22.2 No. 236, "Heating and Cooling Equipment."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

REPLACEMENT PACKAGED TERMINAL AIR CONDITIONER FOR FIELD INSTALLATION WITH EXISTING WALL SLEEVES, OUTDOOR LOUVERS, AND INDOOR PANELS AS SPECIFIED ON THE PRODUCT AS TO ELECTRIC SHOCK, FIRE AND CASUALTY HAZARDS ONLY

Control No.

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AIR FILTERING APPLIANCES CERTIFIED FOR CANADA (AEDX7)

GENERAL

This category covers portable and stationary air-filtering appliances intended for window, floor, table and similar mounting. This category also covers fixed air-filtering appliances intended for permanent mounting to walls, ceilings and similar applications. The appliances consist primarily of air-circulating fans and mechanical filters, but may additionally employ ultraviolet/germicidal lamps.

FACTORS NOT INVESTIGATED

The physiological effects of the operation of these appliances, beneficial or otherwise, have not been investigated.

RELATED PRODUCTS

Appliances not provided with filters and intended for circulating air in a room are covered under Fans, Ceiling Suspended Certified for Canada (GPRT7) and Fans, Electric Certified for Canada (GPWV7).

Electrostatic air cleaners and fans employing electrostatic air cleaners are covered under Electrostatic Air Cleaners Certified for Canada (AGGZ7).

Ionizers, fans employing ionizers, and ion generators are covered under Ion Generators Certified for Canada (OETX7).

Deodorizers intended to be used in treating air by dispersal of chemicals or by scenting the air are covered under Deodorizers and Air Fresheners Certified for Canada (EOGX7).

Appliances employing ultraviolet lamps or ionization tubes for the purpose of treating air and having provisions for connection to heating and ventilation ducts used for air distribution are covered under Accessories, Air Duct Mounted Certified for Canada (ABQK7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113 (1984), "Fans and Ventilators."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory)

Air Filtering Appliances Certified for Canada (AEDX7)−*Continued*

together with the word ″LISTED,″ a control number, and the product name ''Air Filtering Appliance'' or ''Air Filter,'' or other appropriate product name as shown in the individual Listings.

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DEHUMIDIFIERS, REFRIGERATION TYPE CERTIFIED FOR CANADA (AFFT7)

GENERAL

This category covers portable, self-contained household, commercial and industrial dehumidifiers for removing moisture from the air. These dehumidifiers are designed for cord connection to a single-phase, alternating-current source of supply rated at not more than 250 V, 30 A. They employ hermetic refrigerant motor-compressors and may also incorporate electric air heaters. They are intended for use indoors in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

RELATED PRODUCTS

Air conditioners intended for spot cooling are covered under Air Conditioners, Special Purpose Certified for Canada (ACVS7).

Desiccant-type dehumidifiers with a heater are covered under Heaters, Specialty Certified for Canada (KSOT7).

Duct-mounted and permanently connected dehumidifiers are covered under Heating and Cooling Equipment Certified for Canada (LZFE7).

See Air Conditioners, Room Certified for Canada (ACOT7).

Products Verified for energy efficiency are covered under Dehumidifiers, Refrigeration Type Verified for Energy Efficiency (ZYHM).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 92, ''Dehumidifiers,'' or CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Appliances, Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60335-2-40 (2012), ''Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.''

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Dehumidifier'' for a household unit, or ''Special Purpose Dehumidifier'' for a commercial or industrial unit.

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ELECTROSTATIC AIR CLEANERS CERTIFIED FOR CANADA (AGGZ7)

GENERAL

This category covers duct type, room type (fixed), stationary and portable electrostatic air cleaners intended to remove airborne dust particles and the like.

Room-type electrostatic air cleaners are self-contained units; the fixed types are intended for permanent installation. The portable or stationary types are cord connected.

Electrostatic air cleaners are intended for use where removal of dust and dirt from equipment is frequent enough to prevent excessive accumulation, which may result in flashover and fire damage. The instructions and warnings supplied with and on each piece of equipment should be carefully observed.

Electrostatic air cleaners have either Class 1 or Class 2 filters or adhesive-coated ionizer collector cells as follows:

Class 1 filters or adhesive-coated ionizer collector cells are those which, when clean, do not contribute fuel when attacked by flame and which emit only negligible amounts of smoke.

Class 2 filters or adhesive-coated ionizer collector cells are those which, when clean, burn moderately when attacked by flame or emit moderate amounts of smoke, or both.

Electrostatic Air Cleaners Certified for Canada (AGGZ7)−*Continued*

REBUILT PRODUCTS

This category also covers electrostatic air cleaners that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt electrostatic air cleaners are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt electrostatic air cleaners are subject to the same requirements as new electrostatic air cleaners.

FACTORS NOT INVESTIGATED

The physiological effects of the operation of these appliances, beneficial or otherwise, have not been investigated.

RELATED PRODUCTS

Ionizers, fans employing ionizers, and ion generators are covered under Ion Generators Certified for Canada (OETX7).

Air-filtering appliances utilizing mechanical filtration only or ultraviolet/germicidal lamps are covered under Air-filtering Appliances Certified for Canada (AEDX7).

Deodorizers intended to be used in treating air by dispersal of chemicals or by scenting the air are covered under Deodorizers and Air Fresheners Certified for Canada (EOGX7).

Appliances employing ultraviolet lamps or ionization tubes for the purpose of treating air and having provisions for connection to heating and ventilation ducts used for air distribution are covered under Accessories, Air Duct Mounted Certified for Canada (ABQK7).

Power supplies intended for use in electrostatic air-cleaning equipment are covered under Power Supplies, Electrostatic Air-cleaning Equipment Certified for Canada (QQCH8).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 187, ''Electrostatic Air Cleaners.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electrostatic Air Cleaner.''

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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EVAPORATIVE COOLER RETROFIT PUMPS CERTIFIED FOR CANADA (AGIS7)

USE AND INSTALLATION

This category covers pumps intended to replace the original pumps provided in certified evaporative coolers and pumps meant as retrofit pumps providing additional functionality, such as the timed purging of evaporative-cooler reservoirs. They do not require qualified service personnel for installation when the evaporative cooler is provided with a receptacle intended for cord-and-plug connection of the pump. For installations where the pump is not provided with a plug or where the plug must be cut off in order to wire the pump directly into the cooler circuitry, installation by qualified service personnel is specified. Pump construction, performance and installation instructions have been investigated to determine that, when properly installed, they comply with the requirements applied to original equipment pumps in these coolers.

PRODUCT MARKINGS

The pump packaging indicates the brand name, models or ratings of the evaporative coolers for which the pump is designed. Information concerning mounting of the pump, cord routing, maximum depth of water in the reservoir, and regular testing of any GFCI protecting the pump is either marked on the pump packaging or provided in detailed installation instructions accompanying each pump.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

Evaporative Cooler Retrofit Pumps Certified for Canada (AGIS7)−*Continued*

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 108 (2001), "Liquid Pumps," and CSA-C22.2 No. 104 (1993), "Humidifiers."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

EVAPORATIVE COOLER RETROFIT PUMP
FOR USE WITH SPECIFIED EVAPORATIVE COOLERS ONLY
Control No.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

EVAPORATIVE COOLERS CERTIFIED FOR CANADA (AGNY7)

GENERAL

This category covers evaporative coolers of portable, window and stationary types for residential, commercial and industrial applications. Stationary types may have provision for connection to a duct system for air distribution. Models investigated for outdoor installation are marked "Outdoor Use."

Motors used in stationary equipment intended for duct system connection are prevented from hazardous overheating by inherent overheating devices, by overcurrent protective devices, or by impedance of the motor windings.

RELATED PRODUCTS

Air coolers that include a motor-compressor and refrigeration system are covered under Room Air Conditioners Certified for Canada (ACOT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 104 (1993), "Humidifiers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Evaporative Cooler" or "Evaporative Air Cooler."

* *

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HUMIDIFIERS CERTIFIED FOR CANADA (AHIV7)

GENERAL

This category covers humidifiers intended for residential and commercial applications that circulate moistened air and generally incorporate an air-circulating fan with or without filters. Stationary types may have provision for connection to heating and ventilating ducts for air distribution.

Motors used in stationary equipment intended for duct connection are prevented from hazardous overheating by inherent overheating devices, overcurrent protective devices, or inherent impedance. Impedance-protected motors do not generate smoke during locked-rotor testing.

RELATED PRODUCTS

Evaporative coolers are covered under Evaporative Coolers Certified for Canada (AGNY7).

Vaporizers are covered under Vaporizers Certified for Canada (YEIV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 104 (1993), "Humidifiers."

Humidifiers Certified for Canada (AHIV7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Humidifier."

* *

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AIR CONDITIONING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AHSY7)

AIR CONDITIONERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (AIDR7)

Room Air Conditioners for Use in Hazardous Locations Certified for Canada (AINU7)

USE AND INSTALLATION

This category covers room air conditioners for use in hazardous locations. They are encased assemblies designed as a unit and intended as the prime source of refrigeration and dehumidification, basically intended to serve a single room, zone or space. They are intended for installation in windows or through walls. These units employ alternating-current, hermetic refrigerant motor-compressors with factory-charged refrigeration systems and include a means for circulating air. The effect of in-wall units on the fire resistance rating of the wall has not been investigated.

Permanently connected units are intended to be connected only to a branch circuit protected by overcurrent devices which do not exceed the value marked on the data plate or attached wiring diagram. The marked branch circuit overcurrent device protection is the maximum for which the unit has been investigated. If time-delay fuses are required for starting, the unit is marked to this effect.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Room Air Conditioner for Use in Hazardous Locations."

* *

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AIR CONDITIONING SYSTEMS CERTIFIED FOR CANADA (AIXZ7)

FILTER UNITS, AIR CERTIFIED FOR CANADA (AJZV7)

USE AND INSTALLATION

This category covers air-filter units of both washable and throw-away types intended for the removal of dust and other airborne particles from air circulated mechanically in equipment and systems installed in accordance with the requirements for air conditioning, cooling, heating and/or ventilating contained in the "National Building Code of Canada."

Air filters are classed as to flammability as follows:

- **Class 1** filters are units which, when clean, do not contribute fuel when attacked by flame and which emit only negligible amounts of smoke.
- **Class 2** filters are units which, when clean, burn moderately when attacked by flame or emit moderate amounts of smoke or both.

The classification ratings apply to filters in a clean condition. The combustibility and smoke generation of a filter after a period of service will depend in part on the nature and quantity of the contaminates collected.

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Air-filter units are marked "Class 1" or "Class 2," as applicable.

FACTORS NOT INVESTIGATED

The toxicity of products of combustion resulting from exposure to flame has not been investigated, nor the ability of these units to remove dust or other airborne particles or flammable vapors.

RELATED PRODUCTS

Electrically operated air-filtering appliances are covered under Air-filtering Appliances Certified for Canada (AEDX7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S111, "Standard Method of Fire Tests for Air Filter Units."

UL MARK

The Classification Mark of UL on the product or on the container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

AIR FILTER UNIT
AS TO FLAMMABILITY ONLY
Control No.
*** ***

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

FILTERS, GREASE CERTIFIED FOR CANADA (AKUS7)

USE AND INSTALLATION

This category covers grease filters intended to be used with restaurant-type cooking equipment installed in accordance with ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations." Use in conjunction with certified restaurant hood and duct extinguishing system units requires a review of the location of heat-sensing elements with regard to the nature, protection and degree of sensitivity desired.

These filters have demonstrated an ability to remove grease from air streams and provide surfaces that can hold only a small amount of grease which is susceptible to ignition when attacked by flames.

These units have been investigated as to flammability only after exposure to grease-laden air.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S649, "Grease Filters for Commercial Kitchen Exhaust Systems."

Filters, Grease Certified for Canada (AKUS7)−*Continued*

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

GREASE FILTER
AS TO FLAMMABILITY AFTER EXPOSURE TO GREASE LADEN AIR ONLY
Control No.
*** ***

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

MECHANICAL AIR CLEANERS CERTIFIED FOR CANADA (ALEV7)

USE AND INSTALLATION

This category covers mechanical air cleaners intended to remove airborne dust particles and the like.

Mechanical air cleaners of the duct type are intended for installation in and adjoining heating, air conditioning and ventilating systems in accordance with the requirements for air conditioning, cooling, heating and/or ventilating in the "National Building Code of Canada."

A mechanical air-cleaning assembly consists of an inner air-cleaning assembly or element and an outer housing attached to the duct work, and is specifically designed and fabricated for the internal assembly.

These products are not intended for tandem (back-to-back) installation.

Mechanical air cleaners may be either Class 1 or Class 2 as follows:

- Class 1 cleaners are those which, when clean, do not contribute fuel when attacked by flame and which emit only negligible amounts of smoke.
- Class 2 cleaners are those which, when clean, burn moderately when attacked by flame or emit moderate amounts of smoke or both.

RELATED PRODUCTS

Electrically operated air-filtering appliances are covered under Air-filtering Appliances Certified for Canada (AEDX7).

Air filters are covered under Filter Units, Air Certified for Canada (AJZV7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S111, "Standard Method of Fire Tests for Air Filter Units."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Mechanical Air Cleaner."

*** ***

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AIR DUCTS AND AIR CONNECTORS CERTIFIED FOR CANADA (ALJX7)

This category covers air ducts and air connectors made of materials consistent with and for use in accordance with the "National Building Code of Canada." Unless otherwise indicated in the individual Listings and on the Listing Mark attached to the product, they are intended for indoor use only.

Air ducts and air connectors are identified as Class 0, Class 1 or Class 2 as follows:

Class 0 air ducts and air connectors have surface burning characteristics of zero.

Class 1 air ducts and air connectors have a flame spread index of not

over 25 without evidence of continued progressive combustion and a smoke-developed index of not over 50.

Class 2 air ducts and air connectors have a flame spread index of not over 50 without evidence of continued progressive combustion and a smoke-developed index of not over 50 for interior surfaces and not over 100 for exterior surfaces.

* *

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AIR DUCTS CERTIFIED FOR CANADA (ALLU7)

GENERAL

This category covers air ducts identified as Class 0, Class 1 or Class 2 in accordance with the information in Air Ducts and Air Connectors Certified for Canada (ALJX7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S110, "Standard Methods of Tests for Air Ducts."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Air Duct, Class *." The Listing Mark for air ducts has a rectangular shape.

* 0, 1 or 2

* *

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AIR CONNECTORS CERTIFIED FOR CANADA (ALNR7)

GENERAL

This category covers air connectors identified as Class 0, Class 1 or Class 2 in accordance with the information in Air Ducts and Air Connectors Certified for Canada (ALJX7). The installation length for air connectors is intended to be in accordance with the "National Building Code for Canada," having a maximum length of 4 m.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S110, "Standard Methods of Tests for Air Ducts."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Air Connector for Installation In Lengths Not Over 4 m, Class *." The Listing Mark for air connectors has a round shape.

* 0, 1 or 2

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

AIR-SAMPLING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ALOA7)

GENERAL

This category covers air-sampling pumps, sample-draw pumps and similar equipment.

RELATED PRODUCTS

Equipment investigated for use only in the hazardous (classified) locations of automotive and marine service stations is covered under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Air Sampling Equipment for Use in Hazardous Locations" or "Air Sampling Pump for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

* *

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SECURITY EQUIPMENT CERTIFIED FOR CANADA (ALOV7)

GENERAL

Security equipment and systems are investigated to provide protection against burglary, robbery or theft.

This equipment is intended for use only as described in the general Guide Information for each product category and individual Listings. This equipment has only been investigated for use as described in the instructions and markings provided with the equipment. The use of the equipment in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category has not been investigated by UL.

CERTIFICATE SERVICE

Protective systems require extensive installation work and maintenance by the Listed installing company. UL's Standards for these systems cover installation methods, extent of protection, and maintenance service, which are supervised under UL's Certificate Service.

Under Certificate Service, UL authorizes the issuance of UL's certificates to installations which the Listed installing company represents to be in compliance with requirements established for the product category. The certificate indicates the classification, extent, location of equipment, period covered by the certificate, and name of the installing company.

UL conducts countercheck field examinations of representative installations of the Listed installing company. UL assumes no liability for any loss that may result from failure of the equipment, incorrect certification or nonconformity with requirements. If installations not in compliance with UL's requirements are found as a result of field examinations, they are subject to correction by the Listed installing company or cancellation of the certificate.

All of a company's alarm system installations may not be covered under UL's Certificate Service. Only those installations for which a certificate has been properly issued are covered under UL's Certificate Service.

UL maintains a Certificate Verification Service (ULCVS) that allows Authorities Having Jurisdiction (AHJs) to verify up-to-date Certificate information and identify companies eligible to issue Certificates as of the date of the inquiry. Only those alarm or signal system installations for which a Certificate has been issued are covered under UL's Certificate Service. The verification of a Certificate on ULCVS is the only method UL provides to identify the Certificated alarm systems actively covered under its Listing and Follow-Up Service.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from

related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the AHJ. AHJs should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

INDOOR AND OUTDOOR USE

Unless outdoor use is specifically indicated in the general Guide Information for the product category or included in the individual Listings of the product, individual appliances have been investigated only for use indoors, unless the product, by its inherent nature, is obviously intended for use outdoors.

ELECTRICAL INSTALLATIONS

General — The ampere or wattage marking on electrical power-consuming equipment is valid only when the equipment is supplied at its marked rated voltage. In general, the current input to electric heating appliances or resistance heating equipment will increase in direct proportion to an increase in the supply voltage, while the current input to an induction motor supplying a constant load will increase approximately in direct proportion to a decrease in the supply voltage. These increases in current can cause overcurrent protection devices to open even when these devices are properly selected on the basis of nameplate ratings.

Supply Conductors — Except as noted in the general Guide Information for some product categories, most terminals are for use only with copper wire unless marked otherwise. If aluminum wire can be used, marking to indicate this fact is provided. Such marking is required to be independent of any marking on terminal connectors, such as on a wiring diagram or other visible location. The marking may be in an abbreviated form, such as "AL-CU."

Except as noted below or in the general Guide Information for certain product categories, the electrical termination provisions on equipment are based on the use of 60°C insulated conductors in circuits rated 100 A or less and the use of 75°C insulated conductors in higher rated circuits.

If the electrical termination provisions on equipment are based on the use of other conductors, the equipment is either marked with both the size and temperature rating of the conductors to be used or with only the temperature rating of the conductors to be used. If the equipment is only marked for use with conductors having a higher (75 or 90°C) temperature rating (wire size not specified), the 60°C ampacities (for circuits rated 100 A or less) and 75°C ampacities (for circuits rated over 100 A) specified in Table 2 of the CEC should be used to determine wire size. Conductors having a temperature rating higher than specified may be used, though not required, if the size of the conductors is determined on the basis of the 60°C ampacity (circuits rated 100 A or less) or 75°C ampacity (circuits rated over 100 A).

Terminations — Copper pigtail leads may be used with aluminum supply wires in dry locations if 1) the splicing devices are Listed for use in joining copper to aluminum, 2) there is sufficient wiring space, and 3) the means provided for connecting the wiring system are acceptable for the wire size used.

Supply terminals of 15 A and 20 A switches and receptacles not marked "CO/ALR" are for use with copper conductors only. Terminals marked "CO/ALR" are for use with aluminum or copper conductors.

Screwless pressure terminal connectors of the conductor push-in type are for use only with copper conductors, both solid and stranded unless otherwise limited by marking.

Terminals of switches and receptacles rated 30 A and above not marked "AL/CU" are for use with copper conductors only. Terminals of switches rated 30 A and above marked "AL/CU" are for use with aluminum or copper conductors.

Combination of dissimilar conductors in terminal or splicing connectors are acceptable only in dry locations and when the connectors are identified as suitable for such intermixing.

Hazardous Locations — Electrical equipment and appliances are not intended for use in hazardous (classified) locations, as defined in the CEC, unless specifically identified as suitable for use in hazardous locations.

* *

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ALARM SYSTEM UNITS CERTIFIED FOR CANADA (ALOZ7)

ACCESS CONTROL SYSTEM UNITS CERTIFIED FOR CANADA (ALVY7)

GENERAL

This category covers units for access control systems, providing a means of regulating or controlling entry to and/or exit from an area, by electrical or mechanical means. Accessories covered under this category include keypads, token card readers, biometric readers, request-to-exit devices, access-point sensors, access-point actuators, and the like.

The design of the electronic access control system should take into consideration the requirements of the intent of applicable Building and Fire Codes to provide unimpeded egress in an emergency situation without the use of special equipment.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Access Control Unit," or the specific product name or designation as shown in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S319, "Electronic Access Control Systems."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Access Control System Units Certified for Canada (ALVY7)−*Continued*

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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CENTRAL STATION ALARM UNITS CERTIFIED FOR CANADA (AMCX7)

USE AND INSTALLATION

This category covers signal-receiving, recording and supervisory units intended for permanent use within a central station or subsidiary station and associated subscriber's control units and the like, to be installed within protected property.

A control unit may or may not provide for the operation of a local alarm sounding device.

The units are suitable for use in central station burglar alarm systems, as indicated in the individual certifications.

For protection against compromise, the communication channel between the protected property and the remote monitoring location may be provided with communication channel security as indicated in the individual certifications.

These units are provided with installation instructions.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S304, "Central and Monitoring Station Burglar Alarm Units," and ANSI/UL 1635, "Digital Alarm Communicator System Units."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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CONNECTORS AND SWITCHES CERTIFIED FOR CANADA (AMQV7)

GENERAL

Connectors and Switches Certified for Canada (AMQV7)−*Continued*

This category covers insulated and noninsulated contact springs and mating brackets, magnetically actuated switches, mercury switches, floor mats, safe and vault contacts, shunting devices, flexible connectors, foil connectors, and similar products intended for use with commercial or residential burglar alarm systems.

Some products have been investigated for use as partial or supplemental protection only, or in household (residential) burglar alarm systems only. These restrictions are indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C634, "Guide for the Investigation of Connectors and Switches for Use with Burglar Alarm Systems."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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INTRUSION-DETECTION UNITS CERTIFIED FOR CANADA (ANSR7)

USE

This category covers electronic devices that may be used to provide protection for mercantile premises, stock rooms, stock cabinets, safes, vaults and other items.

Intrusion-detection units utilize invisible beams (photoelectric), electromagnetic radiation, ultrasonic radiation, passive infrared, sound and vibration detection or other principles to detect and signal intrusion or movement within mercantile premises and stockrooms, approaches to safes, penetration of vaults, and the like. Intrusion-detection units are used in combination with or instead of conventional forms of burglar alarm wiring on walls, floors, ceilings, openings, safes, vaults and other items requiring protection.

The individual certifications indicate the range, coverage or other limitations of the units as applicable.

These units have been investigated for fire, electrical shock and reliability of operation. The effect of radiation on radio communication or radio navigation has not been investigated. The Authority Having Jurisdiction should be consulted for regulations governing the use and operation of radiation devices.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S306, "Intrusion Detection Units."

UL MARK

Intrusion-detection Units Certified for Canada (ANSR7)−*Continued*

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
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T – Telephone Equipment

* *

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LOCAL ALARM UNITS CERTIFIED FOR CANADA (AOTX7)

USE AND INSTALLATION

This category covers local alarm units used to control burglar alarm circuits and a local audible alarm-sounding device. The units are acceptable for use to form a Grade A or Grade B local burglar alarm system in bank safes and vaults, and to form a Grade A local burglar alarm system in mercantile premises or mercantile safes and vaults as indicated in the individual certifications. They may be used with units covered under Police-station-connected Alarm Units Certified for Canada (APAW7).

These units are provided with installation instructions.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S303, "Local Burglar Alarm Units and Systems," and CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

Local Alarm Units Certified for Canada (AOTX7)−*Continued*

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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POLICE-STATION-CONNECTED ALARM UNITS CERTIFIED FOR CANADA (APAW7)

USE AND INSTALLATION

This category covers police-station-connected alarm units used to control burglar-alarm circuits and a local audible-alarm-sounding device at a protected premises, and to transmit an alarm signal from the protected premises to a police station or to a central station. The units are acceptable for use to form a Grade AA, Grade A, Grade BB or Grade B police-station-connected system in bank safes and vaults, and to form a Grade AA or Grade A police-station-connected system in mercantile premises or mercantile safes and vaults as indicated in the individual certifications. They may be used with units covered under Local Alarm Units Certified for Canada (AOTX7). The transmission methods and communication channel security used to connect the protected premises to the police station or central station are indicated in the individual certifications.

These units are provided with installation instructions.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC -S303, "Local Burglar Alarm Units and Systems," CAN/ULC-S304, "Signal Receiving Centre and Premise Burglar Alarm Control Units," and CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

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G – General Signaling Equipment
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POWER SUPPLIES, BURGLAR ALARM SYSTEM CERTIFIED FOR CANADA (APHV7)

USE

This category covers low-voltage, low-energy power-supply units intended to be used with standby batteries to provide electrical energy for burglar-alarm systems.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S318, "Power Supplies for Burglar Alarm Systems."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
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T – Telephone Equipment

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PROPRIETARY ALARM UNITS CERTIFIED FOR CANADA (APOU7)

GENERAL

This category covers proprietary burglar alarm systems, which are electrical monitoring systems designed to provide status indication of burglar-alarm-actuating devices. All equipment is intended to be operated and maintained by competent and experienced personnel responsible to the owner of the protected premise.

The individual certifications identify the individual units that may be interconnected or used with other separately certified units to form a proprietary burglar alarm system. The individual units include main control units (with integral or separate power supply) and accessory units (switches, transmitters, end-of-line devices, subscriber's units, and the like).

A control unit may consist of a complete assembly or may be prewired at the factory for accepting readily-installed modules for system expansion. The installation manual indicates the type and number of modules that can be employed in a control unit.

A control unit may additionally be connected to fire alarm devices to form a combination fire/burglary control unit. In combination units, the fire alarm signal takes precedence over the burglar alarm signal and a distinction between alarm signals is provided. A common trouble signal may be employed for both systems.

A control unit accessory is a special unit assembly intended to be separately connected within a system and which is suitable for use only with a specific control unit.

Installation information is provided to ensure proper interconnection among units. The information may be attached to the control unit or included as part of an installation or instruction booklet.

A control unit may or may not provide for the operation of a local alarm-sounding device.

Proprietary Alarm Units Certified for Canada (APOU7)–*Continued*

For protection against compromise, the communication channel between the protected property and the remote monitoring location may be provided with line security. Systems with line security are identified in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1076, "Proprietary Burglar Alarm Units and Systems."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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ALTERNATORS, GENERATORS AND MOTORS, ELECTRIC, MARINE CERTIFIED FOR CANADA (ARDY7)

USE AND INSTALLATION

This category covers engine-mounted marine electric motors, generators, alternators, motor-actuating solenoids, and voltage regulators rated at less than 50 V dc. These products include connecting wiring harnesses provided by the product manufacturer as part of the device.

These devices are intended for installation in accordance with the manufacturer's specifications and the applicable Canadian Coast Guard Regulations.

All products and components are ignition protected, except that voltage regulators may not be of ignition-protected construction if marked with a warning placard stating that they must be mounted outside of areas requiring ignition-protected equipment.

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 183.2 (1983), "DC Electrical Installations on Boats."

UL MARK

The Marine Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Marine Listing Mark for these products includes the UL Mark for Canada symbol with the word "MARINE" above the UL symbol (as illustrated in the Introduction of this Directory), the word "LISTED," a control number, and the product name "Alternator" or "Voltage Regulator."

* *

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ALUMINUM-SHEATHED CABLE CONNECTORS, TYPE ALS CERTIFIED FOR CANADA (ASFV7)

GENERAL

This category covers fittings for use with aluminum-sheathed cable, Type ALS, employing jacketed corrugated aluminum sheath. These products are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

Connector Selection — Connectors are intended to be selected in accordance with the size and type of cable for which they are designated. Aluminum connectors are intended for use only with cable employing a corrugated aluminum sheath unless marked on carton otherwise (see **MARKINGS**).

Use in Concrete — Fittings made of aluminum are not considered suitable for use in concrete or cinder fill unless protected with asphalt paint or the equivalent. Fittings which are suitable for use in concrete are identified by a marking on the carton.

Grounding — Aluminum-sheathed-cable connectors for use with corrugated aluminum or copper tube or smooth aluminum tube are considered suitable for grounding where installed in accordance with the CEC.

Dry and Wet Locations — Nonmetallic parts, such as glands or seals, are suitable for use at a temperature of 90°C in dry and wet locations. The fittings are suitable for use in dry or wet locations unless marked otherwise (see **MARKINGS**).

Reusability — Connectors have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

MARKINGS

Aluminum-sheathed-cable fittings or the smallest unit shipping cartons are marked with (1) the range of cable diameters, (2) the type "ALS," and (3) "Concrete-tight" if suitable for use in poured concrete. Aluminum-sheathed-cable fittings suitable for use only in dry locations are marked "Dry Locations" on the device and smallest unit carton.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 18.3 (2004), "Conduit, Tubing, and Cable Fittings."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Aluminum-Sheathed Cable Connector."

* *

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AMUSEMENT AND GAMING MACHINES CERTIFIED FOR CANADA (ASMU7)

GENERAL

This category covers self-contained commercial amusement and gaming machines.

The appliances are marked on or adjacent to the electrical rating plate with one of the following: "Suitable for Indoor Use Only," "Suitable for Protected Locations — See Installation Instructions," or "Suitable for Outdoor Use." Complete instructions appear on an appliance intended for use in a protected location, indicating the manufacturer's recommendations concerning the use or installation, or both, of any canopy, marquee, shelter, etc., that may be necessary for the protection of the appliance. The instructions may be located inside the appliance if they are accessible through the front door.

REBUILT PRODUCTS

This category also covers amusement and gaming machines that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt amusement and gaming machines are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt amusement and gaming machines are subject to the same requirements as new amusement and gaming machines.

FACTORS NOT INVESTIGATED

The burglary- and theft-protection features of coin-operated machines have not been investigated unless specifically indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0.4, "Bonding of Electrical Equipment," and CSA-C22.2 No. 1, "Audio, Video and Similar Electronic Equipment," or CAN/CSA-E60335-2-82, "Safety of Household and Similar Electrical Appliances – Particular Requirements for Amusement Machines and Personal Service Machines," when indicated in the individual Listings.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Amusement Machine" or "Gaming Machine," or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Refurbished" or "Remanufactured" precedes the product name.

* *

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ANIMAL CARE APPLIANCES CERTIFIED FOR CANADA (ASTS7)

USE

This category covers motor-operated equipment intended for the grooming, management and feeding of animals, or other forms of animal care, for household or commercial use.

RELATED PRODUCTS

Animal hair clippers are covered under Hair Clipping and Shaving Appliances Certified for Canada (KEFX7).

Heating appliances, such as pet dryers, vivarium heaters, heated pet bowls and heated pet beds are covered under Heaters, Specialty Certified for Canada (KSOT7).

Aquarium equipment is covered under Aquarium Equipment Certified for Canada (AVRR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68 (1992), "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

* *

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ANTENNA ROTATORS CERTIFIED FOR CANADA (ASYI7)

USE

This category covers power-operated antenna rotators intended for use with VHF and/or UHF television, FM radio and similar antennas receiving signals directly from transmitters.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, "Audio, Video, and Similar Electronic Equipment," or CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, "Audio, Video and Similar Electronic Apparatus – Safety Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Antenna Rotator," or other appropriate product name as shown in the individual Listings.

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ANTITHEFT ALARMS AND DEVICES CERTIFIED FOR CANADA (ATJT7)

USE

This category covers individual units, with or without certified accessories or subassemblies, that may be used alone or interconnected with other suitable certified equipment to form an electrically or mechanically operated system, or both, for theft deterrent or security warning/applications.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1037 (1988), "Guide for the Investigation of Antitheft Alarms and Devices."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly" with or without the word "Commercial."

When applicable, the Signaling Mark is also included. The combined Security/Signaling Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Security and Fire Alarm Equipment" or "Security and Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

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EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

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APPLIANCE CONTROLS CERTIFIED FOR CANADA (ATNZ7)

GENERAL

This category covers controllers (single device or interconnected series of components) with one or more input power and possibly signal ports. Included are controllers with solid-state circuitry, and one or more output switching components to directly control all or a portion of household type appliances, such as portable luminaires, audio/video equipment, etc. These controllers typically respond directly or indirectly to sensors or remote control signals to affect operation or electronically store or process information by virtue of a memory system.

These controls are intended only for nonindustrial appliances.

RATINGS

Appliance controls are rated maximum 16 A and are intended to be installed on a 20 A maximum branch circuit. The voltage is limited according to the end-product standard. They are not intended for controlling motor-operated appliances unless specifically identified for such use, e.g., appliance controls designated for control of electric fans. They have been investigated for use in nominal 25°C environments, unless otherwise stated in the individual certifications.

PRODUCT MARKINGS

Controls typically have resistive or general use (power factor 0.75 - 0.80) loads. A controller may be specifically identified for other load types, e.g., "Suitable for ___ W lamp loads," or "Suitable for ___ hp electric fans," where the blank identifies the numerical value of the rating.

RELATED PRODUCTS

Devices intended to be part of a building control system are covered under Management Equipment, Energy Certified for Canada (PAZX7).

Devices that use light and/or motion (passive infrared)-sensitive switches are covered under Switches, Photoelectric Certified for Canada (WJCT7).

Devices indented for industrial applications are covered under Power Circuit and Motor-mounted Apparatus Certified for Canada (NMTR7).

Devices such as thermostats are covered under Temperature-indicating and Regulating Equipment Certified for Canada (XAPX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14 (2005), "Industrial Control Equipment," unless otherwise noted in the individual certifications.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Appliance Control," or other appropriate product name as shown in the individual Listings.

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APPLIANCE OUTLET CENTERS CERTIFIED FOR CANADA (AUJZ7)

This category covers appliance outlet centers, which are factory-built assemblies incorporating pre-installed materials and equipment which, after installation, are usually concealed and may not be accessible for inspection at the installation site.

Materials, including the methods used for installation of electrical, mechanical and plumbing equipment incorporated in these assemblies by their manufacturer, have been investigated for installation requirements in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," the "National Fire Code of Canada," "National Building Code of Canada," and "Canadian Plumbing Code."

These appliance outlet centers are intended for installation subject to approval by the Authority Having Jurisdiction.

Appliance outlet centers consist of one or more electrical outlets and may have one or more outlets of another type (i.e., gas, steam, water sup-

ply and drain) supported within a suitable enclosure. The enclosure itself may consist of individual components providing some compartmentalization and a single cover may be provided to enclose all compartments. They are intended for permanent indoor installation where more than one appliance may be used simultaneously. They are intended for connection to feeder circuits consistent with their marked ratings.

Components utilized in the assembly of appliance outlet centers are intended to be suitable for the use and are investigated to conform with the standard for safety which would be used if the component were to be submitted separately.

* *

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COMMERCIAL APPLIANCE OUTLET CENTERS CERTIFIED FOR CANADA (AUUZ7)

USE

This category covers appliance outlet centers, which consist of a group of outlets with or without suitable branch circuit overcurrent protective devices, branch-circuit switching and/or timer provisions. This category also covers appliance outlet center enclosures intended for use with specific appliance outlet centers.

These products are not intended for use in residential dwellings.

Commercial appliance outlet centers may be provided as complete assemblies or as open-type designs intended to be mounted in specific enclosures. Devices that constitute an open-type assembly are marked to identify the specific commercial appliance outlet center enclosure into which they are intended to be installed. In addition, the enclosures are marked to indicate the specific commercial appliance outlet center(s) intended for use within the enclosure.

ADDITIONAL INFORMATION

For additional information, see Appliance Outlet Centers Certified for Canada (AUJZ7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 244, "Switchboards."

These products are additionally investigated using CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), to ensure compliance with the installation and use provisions of the CEC.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Appliance Outlet Center" or "Commercial Appliance Outlet Center Enclosure."

* *

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RESIDENTIAL APPLIANCE OUTLET CENTERS CERTIFIED FOR CANADA (AVGQ7)

USE

This category covers appliance outlet centers intended for use in residential dwellings.

ADDITIONAL INFORMATION

For additional information, see Appliance Outlet Centers Certified for Canada (AUJZ7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory)

Residential Appliance Outlet Centers Certified for Canada (AVGQ7)−*Continued*

together with the word "LISTED," a control number, and the product name "Residential Appliance Outlet Center."

* *

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AQUARIUM EQUIPMENT CERTIFIED FOR CANADA (AVRR7)

GENERAL

This category covers household and commercial aquarium equipment, such as air pumps, submersible water pumps, submersible air pumps, water pumps, filters, heaters, light reflectors (hoods) and UV treatment devices.

RELATED PRODUCTS

Water pumps covered under this category have not been investigated for use in fountains or ponds. Such pumps are covered under Pumps, Electrically Operated, Liquid Certified for Canada (REUZ7).

These pumps have not been investigated for use with or in proximity to swimming pools or spas. Such pumps are covered under Pumps Certified for Canada (WCSX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following:

CSA-C22.2 No. 12, "Portable Luminaires"
CAN/CSA-C22.2 No. 64, "Household Cooking and Liquid-Heating Appliances"
CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)"
CAN/CSA-C22.2 No. 108, "Liquid Pumps"
CSA-E60335-2-55, "Household and Similar Electrical Appliances – Safety – Part 2-55: Particular Requirements for Electrical Appliances for Use with Aquariums and Garden Ponds"

Additional standards may be applicable based on the features employed. In addition, the following requirements are also used as applicable:

CSA Technical Information Letter No. C-37, "Input Ratings for Cord-Connected Heating and Cooking Appliances, Hairdressing Equipment and Electric Irons for Household Use" (issued 2-28-05)
CSA Technical Information Letter No. O-21, "Liquid Pumps and Grounding Modification" (issued 9-29-95)
CSA Technical Information Letter No. B-60, "Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires" (issued 5-17-93)
CSA Technical Information Letter No. B-62, "Interim Certification Requirements for Non-Ferrous Screwshell and Other Current-Carrying Parts of Lampholders" (issued 11-15-93)

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Aquarium Equipment," or other appropriate product name as shown in the individual Listings.

* *

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ARC-FAULT CIRCUIT INTERRUPTERS CERTIFIED FOR CANADA (AVYI7)

USE

This category covers arc-fault circuit interrupters (AFCI) intended to mitigate the effects of arcing faults that may pose a risk of fire ignition under certain conditions if the arcing persists.

These devices have been investigated to determine their ability to recognize and react to arcing faults. They have also been investigated to deter-

mine resistance to unwanted tripping because of the presence of arcing that occurs in control and utilization equipment under normal operating conditions and to verify that operation is not unduly inhibited by the presence of loads and circuit characteristics that may mask or attenuate unwanted arcing.

PRODUCT MARKINGS

Arc-fault circuit interrupters are marked to identify the type of device to aid the user in determining the intended location in a circuit.

* *

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ARCHITECTURAL AND FLOATING FOUNTAINS CERTIFIED FOR CANADA (AWEG7)

USE AND INSTALLATION

This category covers electrical equipment systems intended for use in architectural and floating fountains. Equipment may consist of pumps (including submersible pumps), lights, control panels, and timers. Equipment may also include wind sensors, light detectors, freeze-prevention equipment, and the like. These systems may be submersible or intended for remote installation. Systems suitable for outdoor use are so marked.

RELATED PRODUCTS

Similar portable equipment is covered under Fountains, Small Decorative Certified for Canada (IQRW7).

Control panels for use with equipment intended for water-play fountains and water playground areas, swimming pools and spas, or fountains with water in common with swimming pools are covered under Controls Certified for Canada (WAWU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 108, ''Liquid Pumps,'' CSA-C22.2 No. 89, ''Swimming-Pool Luminaires, Submersible Luminaires and Accessories,'' and CSA-C22.2 No. 14, ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Architectural Fountain,'' ''Floating Fountain'' or ''Floating Fountain Equipment,'' or other appropriate product name as shown in the individual Listings.

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ARMORED CABLE CERTIFIED FOR CANADA (AWEZ7)

ARMORED CABLE CONNECTORS, TYPE AC CERTIFIED FOR CANADA (AWSX7)

GENERAL

This category covers armored-cable connectors suitable for use with armored-cable types ACG90, ACGWU90 and TECK or aluminum-armored cable in dry locations only, and intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This category does not cover staples or straps for armored cable or connectors for flexible metal conduit, power and control tray cable or metal-clad cable.

The individual certifications for each connector used with nonmetallic-sheathed cable may have details about the size and number of the nonmetallic-sheathed cable it will secure.

All male threaded fittings have only been investigated for use with locknuts.

Armored Cable Connectors, Type AC Certified for Canada (AWSX7)−*Continued*

Size of Cable Used — Connectors of the 1/2 trade size, unless marked otherwise, are capable of holding 14–2 AWG armored cable and any larger size which it will accommodate.

Use with Aluminum Cable — Connectors other than direct-bearing setscrew type are suitable for use with aluminum-armored cable.

Reusability — Connectors have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

MARKINGS

Some connectors are also acceptable for use with flexible metal conduit, flexible cord, nonmetallic-sheathed cable or service-entrance cable as indicated on the device or carton. Connectors for use with nonmetallic-sheathed cable are also suitable for use with multiconductor underground feeder and branch-circuit cable where used in dry locations. Unless marked otherwise on the carton, the connectors are suitable for connection of only one cable per cable entry.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 18.3 (2004), ''Conduit, Tubing, and Cable Fittings.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Armored Cable Connector.''

* *

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ATTACHMENT PLUGS CERTIFIED FOR CANADA (AXGV7)

GENERAL

This category covers the following types of products:

Appliance Coupler — A single-outlet female contact device to be wired on flexible cord as part of a detachable power supply cord to be connected to a male inlet of an appliance.

Appliance or Flatiron Plug — An appliance coupler type of device having a slot configuration specified for use with heating or cooking appliances.

Attachment Plug — A male contact device for the temporary connection of a flexible cord or cable to a receptacle, cord connector, or other female outlet device.

Cord Connector — A female contact device to be wired on flexible cord for use as an extension from an outlet to make a detachable electrical connection to an attachment plug or, as an appliance coupler, to an equipment inlet.

Male Inlet (Equipment Inlet, Motor Attachment Plug) — A male contact device to be mounted on utilization equipment to provide a detachable electrical connection to an appliance coupler or cord connector.

Table Tap — A cord connector having more than one outlet and intended to rest on a horizontal surface while in use.

This category does not cover devices to be molded on flexible cord or wire and unassembled devices to be factory assembled on flexible cord or wire. Such devices are complete only after installation of the flexible cord or wire and they are judged as part of a complete assembly.

Ratings

These devices are rated 600 V or less, ac or dc, and 200 A or less. They may also be rated in horsepower as noted in the individual product categories.

Outlet devices rated 250 V are tested on circuits involving a nominal potential to ground of 125 V. Outlet devices having other voltage ratings are tested on circuits involving full-rated potential to ground, except for multiphase-rated devices, which are tested on circuits consistent with their voltage ratings, e.g., a 120/208 V, 3-phase, device is tested on a circuit involving 120 V to ground.

Grounding

Devices having a terminal identified by a green-colored finish, or by the word ''green,'' are grounding types. The blade, pin or contact member connected to this terminal is for equipment grounding only.

RELATED PRODUCTS

This category does not cover pin-and-sleeve type devices; refer to Pin-and-Sleeve-type Plugs, Receptacles and Cable Connectors Certified for Canada (QLGD7).

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ATTACHMENT PLUGS, FUSELESS CERTIFIED FOR CANADA (AXUT7)

GENERAL

This category covers appliance couplers, appliance and flatiron plugs, attachment plugs, cord connectors, male inlets (equipment inlets, motor attachment plugs) and table taps. These devices do not incorporate switches or overcurrent protection.

Devices for Use in Hospitals — Attachment plugs and cord connectors certified for hospital use in other than hazardous (classified) locations are identified by (1) the marking ''Hospital Only,'' or (2) the marking ''Hospital Grade'' and a green dot on the device. Male inlets may be identified only by the marking ''Hospital Only.'' The identification is visible after installation on the flexible cord or, in the case of the male inlets, on the utilization equipment.

PRODUCT MARKINGS

These devices are marked as follows:

1. Listee's name or identification on device
2. Catalog number or equivalent on device or carton
3. Complete electrical rating except on 15 A, 125 V devices
4. Terminal identification by color or otherwise
5. Date code or equivalent
6. Instruction card with pin-terminal devices intended for field assembly on flexible cord, plus any other necessary assembly instructions
7. Additional markings as required

ADDITIONAL INFORMATION

For additional information, see Attachment Plugs Certified for Canada (AXGV7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 42, ''General Use Receptacles, Attachment Plugs and Similar Wiring Devices.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol together with the word ''LISTED,'' a control number, and the product name ''Fuseless Attachment Plug'' or ''Plug,'' or other appropriate product name as shown in the individual Listings.

* *

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AUDIO AND RADIO EQUIPMENT, COMMERCIAL CERTIFIED FOR CANADA (AZCY7)

COMMERCIAL AUDIO AND RADIO EQUIPMENT, SYSTEMS AND ACCESSORIES CERTIFIED FOR CANADA (AZJX7)

GENERAL

This category covers power-operated audio and radio equipment and accessories rated 250 V or less, which operate from a supply circuit in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' This equipment is designed to meet the use requirements of commercial enterprises or establishments, churches, schools, theaters, factories and similar locations.

Commercial audio and radio equipment includes amplifiers, preamplifier mixers, signal processors, etc., for general use; public address and centralized sound systems; intercommunication devices and systems; radio receivers, tuners and tuner/amplifiers; record turntables, sound masking systems, tape decks and power supplies intended for use with commercial sound systems; special effects units and integral amplifier/speakers, etc. that are intended for use by professional and semi-professional musicians.

This category also covers accessories for use with commercial audio and radio equipment, such as audio modulated lights, audio level indicators, etc.

This category does not cover dictating or transcribing machines for office use.

Speakers and their accessories investigated for mounting in air-handling spaces are specifically identified by markings on the product and in the individual certifications. Installation details are shown on the product or are provided in a separate installation document provided with the product and referenced in the marking on the product.

Commercial Audio and Radio Equipment, Systems and Accessories Certified for Canada (AZJX7)−*Continued*

RELATED PRODUCTS

Musical instruments and accessories other than those noted above are covered under Musical Instruments Certified for Canada (PWHZ7).).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, ''Audio, Video, and Similar Electronic Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Commercial Audio System,'' ''Commercial Audio Equipment,'' ''Commercial Sound Equipment,'' ''Commercial Audio Product'' or ''Commercial Radio,'' or other appropriate product name (prefixed by the word ''Commercial'') as shown in the individual Listings.

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COMMERCIAL PHONOGRAPHS, TAPE-PLAYING AND RECORDING APPLIANCES AND ACCESSORIES CERTIFIED FOR CANADA (AZQW7)

GENERAL

This category covers power-operated phonographs, tape-playing and recording appliances and accessories rated 300 V or less, for use on supply circuits in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' These appliances are designed for use in churches, schools, institutions and/or in public places.

This category also covers commercial phonographs, tape-playing and recording appliances that utilize records, wire or tape. Each unit has complete reproduction facilities including record turntable and/or tape deck, amplifier and speaker.

This category also covers accessories for use with commercial phonographs and tape-playing and recording appliances, such as head demagnetizers and tape erasers.

These units are intended for indoor use only unless specified otherwise in the individual certifications.

Products of the above types may also be covered under Audio/Video Apparatus Certified for Canada (AZSQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, ''Audio, Video, and Similar Electronic Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Commercial Phonograph,'' ''Commercial Tape Player'' or ''Commercial Recorder,'' or other appropriate product name (prefixed by the word ''Commercial'') as shown in the individual Listings.

Commercial Phonographs, Tape-playing and Recording Appliances and Accessories Certified for Canada (AZQW7)−*Continued*

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AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT CERTIFIED FOR CANADA (AZOA7)

USE

This category covers equipment, appliances and systems rated 600 V or less normally found in offices and other business establishments, residences (homes), educational facilities, churches, institutions and other similar environments classified as unclassified locations.

Included in this category is equipment powered by primary or secondary batteries, either standard sizes (e.g., AA, C, D) or nonstandard sizes specified by manufacturer, type and ratings.

This equipment has been investigated for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

Unless specified in the individual certifications, the efficacy, reliability, interoperability and functionality of this equipment has not been investigated.

INSTALLATION

When certified equipment intended for use with a detachable power-supply cord is not provided with such a cord, a cord suitable for connection of the equipment to the branch circuit should be separately provided.

Equipment identified with an Enclosure Type designation, or as ''Raintight'' or ''Rainproof,'' is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7). Equipment identified with an Enclosure Type designation may be additionally marked with an Ingress Protection (IP) designation in accordance with Rule 2-402 of the CEC.

Products such as LAN transceivers and baluns investigated for use in air-handling spaces are marked ''Suitable for use in environmental air spaces (plenums) in accordance with Rules 16-220 and 60-402 of the Canadian Electrical Code,'' or equivalent. These products have been additionally investigated to ANSI/UL 2043, ''Fire Test for Heat and Visible Smoke Release for Discrete Products and their Accessories Installed in Air-Handling Spaces.'' Products that bear this marking are suitable for installation in accordance with Rules 16-220 and 60-402 of the CEC.

ACCESSORIES

Field-installed accessories for certified equipment are provided with suitable markings and/or instructions detailing proper installation or assembly of the accessory with either a specific or generic certified equipment specified in the markings or instructions.

PHYSIOLOGICAL EFFECTS

The physiological effects of chemical substances used in or with this equipment have not been investigated.

The long-term characteristics or the possible physiological effects of radio frequency (RF) electromagnetic fields associated with this equipment have not been investigated.

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AUDIO/VIDEO EQUIPMENT CERTIFIED FOR CANADA (AZOE7)

GENERAL

This category covers equipment and accessories intended for use in household, commercial (including general care areas of health care facilities) and professional locations that transmit or receive signals wirelessly, from an antenna, or using the low-voltage ac mains. This includes equipment that produces or reproduces information that is analog or digital in nature.

Equipment covered under this category includes:

Receiving equipment and amplifiers for sound and/or vision, electronic musical instruments, and electronic accessories such as rhythm generators,

Audio/Video Equipment Certified for Canada (AZOE7)−*Continued*

tone generators, music tuners and the like for use with electronic or non-electronic musical instruments, audio and/or video educational equipment, video projectors, video cameras and video monitors, household video games, juke boxes, record and optical disc players, tape and optical disc recorders, antenna signal converters and amplifiers, Citizen's Band equipment, equipment for imagery, electronic light-effect equipment, intercommunication equipment using the low-voltage mains as the transmission medium, cable head-end receivers, and accessories designed to be used in combination with the abovementioned equipment.

Carts, stands and wall mounts marked for use with specific audio, video and musical instrument equipment and portable audio/video equipment that is intended for use in vehicles or marine vessels.

Equipment incorporating low-energy induction-power-transfer technology as follows: 1) induction-power transmitters intended to be supplied by a branch circuit of 600 V or less, 2) induction receivers intended for use with specific induction-power transmitters, and 3) induction receivers intended for use with induction-power transmitters conforming to industry-accepted interoperability specifications. The output of an induction receiver does not exceed a) 60 V d.c. or 42.4 V peak, and b) 100 VA capacity.

This category also covers accessories which, for purposes of this category, are components, subassemblies and other devices supplied with markings and/or instructions that allow for their interconnection with or installation to other certified equipment through standard industry interfaces and similar methods. They may be either field installed (aftermarket) or installed at a manufacturing facility subject to UL's Follow-up Service.

RELATED EQUIPMENT

Information technology equipment investigated to CAN/CSA-C22.2 No. 62368-1, ''Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements,'' is covered under Information Technology Equipment Certified for Canada (AZOT7).

Communication technology equipment investigated to CAN/CSA-C22.2 No. 62368-1 is covered under Communication Technology Equipment Certified for Canada (AZOJ7).

Multimedia equipment or equipment having multi-function in the field of audio/video, information and communication technology investigated to CAN/CSA-C22.2 No. 62368-1 is covered under this category, Information Technology Equipment Certified for Canada (AZOT7) and/or Communication Technology Equipment Certified for Canada (AZOJ7).

Power supplies for use with audio/video, information and communication technology equipment investigated to CAN/CSA-C22.2 No. 62368-1 are covered under Power Supplies for Use with Audio/Video, Information and Communication Technology Equipment Certified for Canada (QQJQ7).

ADDITIONAL INFORMATION

For additional information, see Audio/Video, Information and Communication Technology Equipment Certified for Canada (AZOA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 62368-1 (2012), ''Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements.''

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Audio/Video Equipment,'' ''Audio Equipment,'' ''Audio Product,'' ''Audio System,'' ''AV Equipment,'' ''AV Product,'' ''AV System,'' ''Commercial Audio Equipment,'' ''Commercial Audio Product,'' ''Commercial Audio System,'' ''Musical Instrument,'' ''Television Equipment,'' ''Television Receiver,'' ''Video Equipment,'' ''Video Product,'' ''Video System,'' or other appropriate product name as shown in the individual Listings.

The category identifier for field-installed accessories includes the word ''Accessory.''

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COMMUNICATION TECHNOLOGY EQUIPMENT CERTIFIED FOR CANADA (AZOJ7)

GENERAL

This category covers equipment that may be electronic or electromechanical in design or a combination thereof.

Various groupings of equipment are covered under this category, such as:

Telecommunication equipment: Cellular site equipment, cordless telephone sets, facsimile machines, ISDN systems and telephones, modems, key telephone systems, powerline communication equipment, private automated branch exchanges (PABXs), telephone answering machines, telephone sets, voicemail systems, IP telephones, IP systems, wireless telephony systems.

This category also covers accessories which, for purposes of this category, are components, subassemblies and other devices supplied with markings and/or instructions that allow for their interconnection with or installation to other certified equipment through standard industry interfaces and similar methods. They may be either field installed (aftermarket) or installed at a manufacturing facility subject to UL's Follow-up Service.

INSTALLATION

Some equipment has been investigated for installation in a restricted-access location, such as a dedicated equipment room or telecommunication equipment closet, where access is limited to trained service personnel. Such equipment is provided with installation instructions that state "To be installed only in a Restricted Access Location," or equivalent.

RELATED EQUIPMENT

Audio/video equipment investigated to CAN/CSA-C22.2 No. 62368-1, "Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements," is covered under Audio/Video Equipment Certified for Canada (AZOE7).

Information technology equipment investigated to CAN/CSA-C22.2 No. 62368-1 is covered under Information Technology Equipment Certified for Canada (AZOT7).

Multimedia equipment or equipment having multi-function in the field of audio/video, information and communication technology investigated to CAN/CSA-C22.2 No. 62368-1 is covered under this category, Audio/Video Equipment Certified for Canada (AZOE7) and/or Information Technology Equipment Certified for Canada (AZOT7).

Power supplies for use with audio/video, information and communication technology equipment investigated to CAN/CSA-C22.2 No. 62368-1 are covered under Power Supplies for Use with Audio/Video, Information and Communication Technology Equipment Certified for Canada (QQJQ7).

Power distribution centers for communications equipment are covered under Power Distribution Centers for Communications Equipment Certified for Canada (QPQY7).

Uninterruptible power-supply (UPS) equipment intended for indoor and outdoor use that may be stationary or fixed is covered under Uninterruptible Power-supply Equipment Certified for Canada (YEDU7).

Power supplies for information technology and telecommunication equipment investigated to CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements," are covered under Power Supplies, Information Technology Equipment Including Electrical Business Equipment Certified for Canada (QQGQ7) and Power Supplies, Telephone Certified for Canada (QQJE7).

Air-conditioning equipment for use in computer rooms or other areas in which information technology equipment (ITE) is installed is covered under Air Conditioners, Special Purpose Certified for Canada (ACVS7) and Heating and Cooling Equipment Certified for Canada (LZFE7).

Modular assemblies of telecommunication equipment (e.g., racks, circuit card assemblies) designed for field installation by trained service personnel are covered under Custom-built Telecommunication Equipment Certified for Canada (WYKM7).

Equipment intended to be installed on the network side of the subscriber demarcation point and installed and maintained by telephone companies, CATV companies and similar network communication companies is covered under Communications Service Equipment Certified for Canada (DUZO7).

Cabinet, enclosure and rack/frame systems that are not complete information technology (IT) or telecommunication equipment, but include components and assemblies that are intended to power, protect, heat, cool or otherwise support IT or telecommunication equipment that will be installed at a later time are covered under Information Technology and Telecommunication Equipment Cabinets, Enclosures and Racks Certified for Canada (NWIN7).

Equipment intended to protect against mains transients is covered under Surge-protective Devices Certified for Canada (VZCA7).

Protectors intended for use on communication circuits are covered under Primary Protectors for Communications Circuits Certified for Canada (QVGV7) or Secondary Protectors for Communications Circuits Certified for Canada (QVRG7).

ADDITIONAL INFORMATION

Communication Technology Equipment Certified for Canada (AZOJ7)−*Continued*

For additional information, see Audio/Video, Information and Communication Technology Equipment Certified for Canada (AZOA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 62368-1 (2012), "Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Answering Machine" or "Cordless Phone," or other appropriate product name as shown in the individual Listings.

The category identifier for field-installed accessories includes the word "Accessory."

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INFORMATION TECHNOLOGY EQUIPMENT CERTIFIED FOR CANADA (AZOT7)

GENERAL

This category covers equipment that may be electronic or electromechanical in design or a combination thereof.

Various groupings of equipment and peripherals are covered under this category, such as:

Computing equipment: Central processing units (CPUs), hand-held computers (personal assistants), laptop computers, notebook computers, pen-based computers, personal computers, point-of-sale terminals, scanners (including portable barcode scanners), servers, work stations.

Peripherals, miscellaneous: Docking stations, flash memory cards, keyboards, mouse, PCMCIA-memory-modem cards, port replicators, trackballs.

Displays: Flat-panel displays, LCD displays, monitors, plasma displays.

Information storage equipment: Automated information storage equipment, CD-ROM/RW drives, disk drives, DVD drives, tape drives, optical drives.

Office appliances: Adding machines, bursters, calculators, collators, dictation and transcribing machines, electric typewriters, erasers, folding, embossing and sealing machines, label printers, microfilm readers, motor-operated file cabinets, overhead projectors, paper cutters, paper shredders, pencil sharpeners, sorters, stackers, staplers.

Printers/Reproduction equipment: Copiers, duplicating machines, microfilm printers, mimeograph machines, plotters, printers.

Mailing, banking and currency-handling equipment: Cash registers, coin counters, feeders and dispensers, accounting machines, check-writing-, -assigning, -dating, -inserting, -mailing, -numbering and -stamping machines, point-of-sale terminals.

Multimedia equipment/peripherals: Cable modems, digital cameras, DLP projectors, LCD projectors, microphones, set top boxes, speakers, video conferencing systems.

Network equipment/peripherals: Baluns, bridges, fiber optic transceivers, hubs, nodes, Power over Ethernet (PoE) equipment (e.g., power source equipment [PSE] and powered devices [PD]), repeaters, routers, switches, transceivers.

Wireless (RF, infrared) transceiving equipment: RF modems, hand-held computers with integral transceivers.

Static-neutralizing equipment: Power units with discharge bars used with or within copiers, collators, film-plate processors, digital printers, duplicating machines and similar equipment.

This category also covers accessories which, for purposes of this category, are components, subassemblies and other devices supplied with markings and/or instructions that allow for their interconnection with or installation to other certified equipment through standard industry interfaces and similar methods. They may be either field installed (aftermarket) or installed at a manufacturing facility subject to UL's Follow-up Service.

INSTALLATION

Some equipment has been investigated for installation in a restricted-access location, such as a dedicated equipment room or telecommunication equipment closet, where access is limited to trained service personnel.

Information Technology Equipment Certified for Canada (AZOT7)−*Continued*

Such equipment is provided with installation instructions that state "To be installed only in a Restricted Access Location," or equivalent.

Equipment intended to be installed in closed and multiunit standard racks and cabinets has been determined to be suitable for use in ambient temperatures not exceeding the manufacturer's recommended ambient temperature as specified in the equipment's installation instructions.

RELATED EQUIPMENT

Audio/video equipment investigated to CAN/CSA-C22.2 No. 62368-1, "Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements," is covered under Audio/Video Equipment Certified for Canada (AZOE7).

Communication technology equipment investigated to CAN/CSA-C22.2 No. 62368-1 is covered under Communication Technology Equipment Certified for Canada (AZOJ7).

Multimedia equipment or equipment having multi-function in the field of audio/video, information and communication technology investigated to CAN/CSA-C22.2 No. 62368-1 is covered under this category, Audio/Video Equipment Certified for Canada (AZOE7) and/or Communication Technology Equipment Certified for Canada (AZOJ7).

Power supplies for use with audio/video, information and communication technology equipment investigated to CAN/CSA-C22.2 No. 62368-1 are covered under Power Supplies for Use with Audio/Video, Information and Communication Technology Equipment Certified for Canada (QQJQ7).

Power distribution centers for communications equipment are covered under Power Distribution Centers for Communications Equipment Certified for Canada (QPQY7).

Uninterruptible power-supply (UPS) equipment intended for indoor and outdoor use that may be stationary or fixed is covered under Uninterruptible Power-supply Equipment Certified for Canada (YEDU7).

Power supplies for use with information technology and telecommunication equipment investigated to CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements," are covered under Power Supplies, Information Technology Equipment Including Electrical Business Equipment Certified for Canada (QQGQ7) and Power Supplies, Telephone Certified for Canada (QQJE7).

Air-conditioning equipment for use in computer rooms or other areas in which information technology equipment (ITE) is installed is covered under Air Conditioners, Special Purpose Certified for Canada (ACVS7) and Heating and Cooling Equipment Certified for Canada (LZFE7).

Filing cabinets covered under this category have not been investigated with respect to fire resistance or security. Fire-resistant filing cabinets are covered under Record-protection Equipment Certified for Canada (RYPH7).

Other equipment associated with information technology/processing but not intended for use in offices, residences or computer rooms is covered under Graphic Arts Equipment Certified for Canada (KCQT7), Inspection and Measuring Electrical Equipment Certified for Canada (NYOK7), Teaching and Instruction Equipment Certified for Canada (WYFW7), Laboratory-use Electrical Equipment Certified for Canada (OGTK7), Medical Equipment Certified for Canada (PIDF7), Marking and Coding Equipment, Electronic Certified for Canada (PGBE7) and Photographic Equipment Certified for Canada (QINT7). Other multimedia equipment and accessories may be covered under Audio/Video Apparatus Certified for Canada (AZSQ7) and Audio and Video Equipment Certified for Canada (AZUJ7). Other telecommunication appliances and equipment is covered under Telephone Appliances and Equipment Certified for Canada (WYQQ7).

Equipment intended to be installed on the network side of the subscriber demarcation point and installed and maintained by telephone companies, CATV companies and similar network communication companies is covered under Communication Service Equipment Certified for Canada (DUZO7).

Cabinet, enclosure and rack/frame systems that are not complete information technology (IT) or telecommunication equipment, but include components and assemblies that are intended to power, protect, heat, cool or otherwise support IT or telecommunication equipment that will be installed at a later time are covered under Information Technology and Telecommunication Equipment Cabinets, Enclosures and Racks Certified for Canada (NWIN7).

Power distribution products intended for indoor use as relocatable multiple-outlet extensions of a single branch circuit not for exclusive use of ITE and consisting of an attachment plug and a single length of flexible cord terminated in a single enclosure in which one or more receptacles are mounted are covered under Relocatable Power Taps Certified for Canada (XBYS7).

Power distribution products intended for installation in modular furniture are covered under Furniture Power Distribution Units Certified for Canada (IYNC7).

Equipment intended to protect against mains transients is covered under Surge-protective Devices Certified for Canada (VZCA7).

Information Technology Equipment Certified for Canada (AZOT7)−*Continued*

SPECIAL CONSIDERATIONS

Equipment investigated with respect to security or burglary resistance is covered under Access Control System Units Certified for Canada (ALVY7), Antitheft Alarms and Devices Certified for Canada (ATJT7) and other associated categories. Card readers, badge readers and similar identification equipment covered under this category have not been investigated with respect to security.

The burglary- and theft-protection features of coin-operated equipment, banking and currency-handling equipment, cash registers, coin counters and the like have not been investigated.

Automated teller machines (ATMs) investigated for security and burglary resistance are covered under Automated Teller Systems Certified for Canada (TPEU7). ATMs that have not been investigated for security protection are covered under Bank Equipment Certified for Canada (BALT7).

ADDITIONAL INFORMATION

For additional information, see Audio/Video, Information and Communication Technology Equipment Certified for Canada (AZOA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 62368-1 (2012), "Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Copier," "Paper Shredder" or "Personal Computer," or other appropriate product name as shown in the individual Listings.

The category identifier for field-installed accessories includes the word "Accessory."

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

AUDIO/VIDEO APPARATUS CERTIFIED FOR CANADA (AZSQ7)

GENERAL

This category covers the following apparatus – rated 300 V or less and designed for household use, commercial use in churches, schools and institutions and/or other public places – that is to be connected to the supply mains either directly or indirectly:

(1) Apparatus and accessories that transmit or receive signals from an antenna. This includes apparatus that produces or reproduces information that is analog or digital in nature.

(2) Audio apparatus and accessories that reproduce or process audio signals, including amateur radios, amplifiers, apparatus for the visually impaired and the physically handicapped, disc players, head demagnetizers, intercommunicating devices and systems, preamplifier mixers, preamplifiers, public address and centralized sound systems, radio clocks, radio-clock-telephones, radio receivers, signal processors for general use, sound masking systems, transceivers, tuners, and tuner-amplifiers.

(3) Video apparatus that receives signals from an antenna, through a CATV/MATV cable system, from a video-recorded medium, or from image producing units, such as antenna amplifiers, antenna-positioning apparatus, cable (CATV) television converters, cable television descramblers, master antenna amplifiers, microwave or satellite receivers, school televisions, television monitors, television receivers, television tuners, video cameras, video switchers and encoders, video tape recorders, and video-amplification, -processing, -receiving, -recording, and -reproducing apparatus.

(4) Motor-driven apparatus that comprises one or more of the above-mentioned apparatus, or can be used only in combination with one or more of them, including phonographs, radio-phonographs, tape players and recorders that utilize records, tape, or wire, record changers, television/radio-phonographs, television/video tape recorders, turntables, and similar apparatus. Commercial apparatus has complete reproduction facilities including record turntable, and or tape deck, amplifier and speaker. Unless specifically noted otherwise in the individual certifications, these units are for indoor use only.

(5) Other apparatus obviously provided to be used in combination with the above-mentioned apparatus, such as cable-connected remote control devices, power supplies for use with commercial sound systems, special effects units and integral amplifier-speakers that are intended for use by professional and semiprofessional musicians.

(6) Electronic accessories, wherein the accessories are separate, but are used in addition to or as a supplement to the basic apparatus, such as audio-modulated lights, audio-level indicators, character generators, CRT degaussers, digital processors, editing controllers, tape erasers, tape rewinders.

(7) Portable audio or video apparatus that is intended for use with a vehicle, marine, or any other battery circuit as the power supply means.

(8) Battery eliminators, including direct plug-in adapters and other types of power supplies intended for use with apparatus covered in this product category.

(9) Carts, stands and similar apparatus marked for use with specific audio and video apparatus.

(10) Apparatus incorporating low-energy induction-power-transfer technology as follows: a) induction-power transmitters intended to be supplied by a branch circuit of 600 V or less, b) induction receivers intended for use with specific induction-power transmitters, and c) induction receivers intended for use with induction-power transmitters conforming to industry-accepted interoperability specifications. The output of an induction receiver does not exceed (i) 60 V d.c. or 42.4 V peak, and (ii) 100 VA capacity.

ACCESSORIES

Field-installed accessories to certified equipment are provided with suitable markings and/or instructions detailing proper installation or assembly of the accessory with either specific or generic certified equipment specified in the markings or instructions.

REBUILT PRODUCTS

This category also covers audio and video apparatus that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt audio and video apparatus is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt audio and video apparatus is subject to the same requirements as new audio and video apparatus.

RELATED PRODUCTS

Television and video equipment intended for use in health care facilities is investigated to CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, "Audio, Video and Similar Electronic Apparatus – Safety Requirements," and is covered under Television/Video Equipment for Use in Health Care Facilities Certified for Canada (KFCV7).

Musical instruments and their accessories are investigated to CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065 and are covered under Musical Instruments Certified for Canada (PWHZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, "Audio, Video and Similar Electronic Apparatus – Safety Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Audio/Video Apparatus," "Audio Equipment," "Audio Product," "Audio System," "Commercial Audio Equipment," "Commercial Audio Product," "Commercial Audio System," "Musical Instrument," "Radio Receiver," "Television Equipment" (or "TV Equipment" or "TV Equip"), "Television Receiver," "Video Equipment," "Video Product," "Video System," "AV Product," "AV Apparatus," "AV Power Supply," or the name of the specific type of product as shown in the individual Listings, or combinations of the product identities where required.

The category identifier for field-installed accessories includes the word "Accessory."

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

Equipment rack systems consist of an equipment rack and one or more audio or video components such as amplifiers, equalizers, VCRs and similar equipment. Each component installed in the rack that does not bear the UL Mark is identified by type and model number on a tag that is permanently attached to the rack. If all components installed in the rack bear the UL Listing Mark, the tag is not required.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

AUDIO AND VIDEO EQUIPMENT CERTIFIED FOR CANADA (AZUJ7)

EQUIPMENT TYPES

This category covers:

(1) **Audio products and accessories** intended for household use and are involved with the reproduction or processing of audio signals such as amateur radio products, amplifiers, disc players, intercommunicating devices, radio-phonographs, radio receivers, radio-clocks, record players, tape recorders, tape players, transceivers, tuners, tuner-amplifiers, and similar products.

(2) **Video products** intended for household or commercial use that receive signals off the air from a satellite or microwave antenna, through a CATV/MATV cable system, from a video-recorded medium, or from image producing units. Examples of such products are video tape recorders, video-receiving, -processing, -recording, -reproducing, and -amplification products, antenna amplifiers, antenna positioning equipment, cable television (CATV) converters, microwave or satellite receivers, television tuners, television cameras, television receivers and monitors, and similar products. These products have not been evaluated for security surveillance protection.

(3) **Auxiliary products and accessories** intended for use with audio or video products wherein the auxiliary and accessory products are separate and do not perform the desired function, but are used in addition to or as a supplement to products according to items (1) and (2). Examples of such products are character generators, digital processors, editing controllers, video switches and encoders, CRT degaussers, video tape rewinders, head demagnetizers, tape erasers, separately enclosed nonpowered loudspeakers, and similar products.

(4) **Circuits in audio and video products** intended to connect directly to a telecommunication network.

(5) **Portable audio or video products** of the types described in items (1)–(4) intended for use with a vehicular, or any other battery circuit as the power supply means.

(6) **Carts and stands** and similar structures marked for use with specific audio and video products.

RELATED EQUIPMENT

Commercial audio products are covered under Commercial Audio and Radio Equipment, Systems and Accessories Certified for Canada (AZJX7) or Commercial Phonographs, Tape-playing and Recording Appliances and Accessories Certified for Canada (AZQW7).

Video products intended for entertainment purposes in ordinary locations of health care facilities are covered under Television/Video Equipment for Use in Health Care Facilities Certified for Canada (KFCV7).

Professional audio and video equipment is covered under Video and Audio Equipment, Professional Certified for Canada (ZCBY7).

Audio and video equipment may also be covered under Audio/Video Apparatus Certified for Canada (AZSQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, "Audio, Video, and Similar Electronic Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Audio Equipment," "Audio System," "Radio Receiver," "Television Equipment," "Television Receiver," "Video Product," "AV Product," "AV Apparatus," or other appropriate product name as shown in the individual Listings, or combinations of the preceding identities, where required.

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AUDIO AND VIDEO EQUIPMENT CERTIFIED FOR USE IN SPECIFIED EQUIPMENT CERTIFIED FOR CANADA (AZVG7)

USE AND INSTALLATION

This category covers products that are retrofit devices or kits consisting of parts and/or subassemblies intended for field installation by qualified service personnel in UL-certified commercial audio and video equipment that involves modifying, revising, or replacing the circuitry internal to the certified equipment. These products have been investigated to determine that when installed in accordance with the manufacturer's installation instructions they do not adversely affect the operation of the specified equipment.

The retrofit kits are limited in the amount of field revision that will be performed to no more than 50% revision to or replacement of the certified product circuitry. The parts that form the enclosure of the certified product may be modified in the field, to fulfill the installation of the kit, but not replaced. Installation instructions are provided with each kit and include information identifying the specific equipment into which the kit may be installed. The instructions include a statement indicating that upon completion of the retrofit, a 1000 V AC or DC Dielectric Strength test is to be performed between specified points.

RELATED EQUIPMENT

See Audio/Video Apparatus Certified for Canada (AZSQ7) and Audio and Video Equipment Certified for Canada (AZUJ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate these retrofit kits and their combination with the specified product are CAN/CSA-C22.2 No. 0.4, "Bonding and Grounding of Electrical Equipment," and CAN/CSA-C22.2 No. 1, "Audio, Video, and Similar Electronic Equipment." The applicable standard is the one used during the investigation of the end-use product.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RETROFIT KIT FOR INSTALLATION IN SPECIFIED [identification of equipment]
IDENTIFIED IN THE MANUFACTURER'S INSTALLATION INSTRUCTIONS
Control No.

The Classification Mark appears on the largest part of the kit assembly that can be readily assembled by an installer on site. Each major part of the kit is identified by appropriate marking.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

BACKFLOW SPECIAL CHECK VALVE DEVICES CERTIFIED FOR CANADA (BAEU7)

GENERAL

This category covers backflow special check valves consisting of the following types:

Double check (DC)
Double-check detector type (DCD)
Reduced pressure (RP)
Reduced-pressure detector type (RPD)

These devices consist of the reduced-pressure-principle type and the double-check-valve type. Both types of valves may include a bypass meter assembly and are designated as detector type. They have been certified as to the friction loss, strength of body, seat leakage and elastomeric check-valve-facing requirements of ULC/ORD-C312, "Check Valves for Fire Protection Service."

These devices are intended for use in fire-service systems for rated pressures not exceeding 1206 kPa for sizes 3/4 through 10 NPS.

These devices have not been investigated for use in potable water systems.

Each valve is provided with the manufacturer's installation instructions, which include flow performance information from zero flow to flowing velocities in excess of 4.57 m/s.

Valves are intended for horizontal (H) installation only unless specifically indicated for horizontal installation and vertical (V) upward flow installation as described in the individual certifications.

Requirements for the installation and use of these valves are included in National Fire Protection Association standards for the installation of fire-protection systems employing water, such as:

ANSI/NFPA 13, "Installation of Sprinkler Systems"
ANSI/NFPA 14, "Installation of Standpipe and Hose Systems"
ANSI/NFPA 15, "Water Spray Fixed Systems for Fire Protection"
ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection"
ANSI/NFPA 22, "Water Tanks for Private Fire Protection"
ANSI/NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances"

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C312, "Check Valves for Fire Protection Service."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, and the following additional information:

BACKFLOW SPECIAL CHECK VALVE DEVICE
AS TO FRICTION LOSS, BODY STRENGTH, SEAT LEAKAGE AND ELASTOMERIC SEAL CHARACTERISTICS ONLY
Control No.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

BANK EQUIPMENT CERTIFIED FOR CANADA (BALT7)

GENERAL

This category covers bank equipment, including currency dispensers, depositories, motor-operated vault doors, remote tellers' systems, tellers' fixtures and similar devices. These products have been certified as to electrical fire, shock and casualty hazards only.

FACTORS NOT INVESTIGATED

The burglary and theft protection features of this equipment have not been investigated. Vault doors have not been investigated for the protection of openings in walls against fire or for the protection of records stored in the vault.

RELATED EQUIPMENT

Automated teller machines (ATMs) investigated for security and burglary resistance are covered under Automated Teller Systems Certified for Canada (TPEU7).

Currency-handling equipment not for exclusive use in banks may be covered under Information Technology Equipment Certified for Canada (NWGQ7). The performance and functional characteristics of this equipment have not been investigated.

Electrically operated control mechanisms that receive coins, currency, credit cards, debit cards or tokens to select prices, accumulate credits, store coins or currency, give change, or initiate a vend cycle for an appliance, or combinations of these functions, are covered under Coin and Currency Changers and Actuators Certified for Canada (DUCU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BANK EQUIPMENT
AS TO ELECTRICAL, FIRE, SHOCK, AND CASUALTY HAZARDS ONLY
Control No.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

LUBRICANT-DISPENSING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (BAYZ7)

GENERAL

This category covers equipment intended for dispensing lubricants, such as lubricating oils and greases. The lubricants intended to be dispensed by this equipment involve flash points greater than 200°F.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Lubricant Dispensing Equipment for Hazardous Locations'' or ''Lubricant Dispenser for Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

BATTERIES FOR USE IN LIGHT ELECTRIC RAIL AND STATIONARY APPLICATIONS CERTIFIED FOR CANADA (BBFX7)

GENERAL

This category covers batteries intended for various stationary applications, such as energy storage for wind turbines, and photovoltaic and uninterruptible power supply applications.

This category also covers electric energy storage systems (EESS) for use in light electric rail (LER) applications and stationary rail applications, such as rail substations. These systems are intended for installation within the rail car or within a sheltered stationary location, such as a rail substation. These systems may utilize regenerative braking from the trains as a source of energy for recharging and are intended for direct connection to the rail power lines. These devices are intended for balancing loads during peak hours, serving as an energy storage device during regenerative breaking of the trains, and as a source of emergency power to move trains to the nearest station during power outages.

Various battery chemistries are included, such as lead acid, lithium-ion, nickel-metal hydride, nickel cadmium, sodium-metal chloride, and flowing electrolyte. Systems composed of electrochemical capacitors or battery and electrochemical capacitor hybrid systems are also included. They are intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These systems have been investigated for potential electric shock, fire and explosion hazards.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

BATTERIES FOR USE IN LIGHT ELECTRIC RAIL AND STATIONARY APPLICATIONS CERTIFIED FOR CANADA (BBFX7)

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 1973, ''Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications,'' in addition to the requirements contained in Clause 4.3.8 of CAN/CSA-C22.2 No. 60950-1 (2007), ''Information Technology Equipment – Safety – Part 1: General Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Lithium-ion * Battery,'' ''Nickel-metal Hydride * Battery,'' ''Nickel Cadmium * Battery,'' ''Sodium Nickel Chloride * Battery,'' ''Sodium Sulfur * Battery,'' ''Zinc Bromine * Flow Battery,'' ''Vanadium Redox * Flow Battery,'' ''Lead-acid * Battery'' or ''Electrochemical * Capacitor.''

* LER-application or Stationary-application

* *

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BATTERIES WITH INTEGRAL CHARGERS, RECHARGEABLE CERTIFIED FOR CANADA (BBGE7)

GENERAL

This category covers indoor use, household and commercial batteries with integral, nonseparable, battery chargers commonly known as rechargeable battery packs. These products are either direct-plug-in type or cord-and-plug-connected type.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 107.2, ''Battery Chargers.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Rechargeable Battery Pack,'' ''Rechargeable Battery'' or ''Battery Management System,'' or other appropriate product name as shown in the individual Listings.

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BATTERY CHARGERS, AUTOMOTIVE TYPE CERTIFIED FOR CANADA (BBGQ7)

GENERAL

This category covers indoor- and outdoor-use household and commercial battery chargers intended for charging engine-starter batteries used in automotive-type applications.

Some of these battery chargers incorporate parts that tend to produce arcs or sparks, such as snap switches, fuseholders, and receptacles and, therefore, when located in commercial garages or aircraft hangars, should be located in separate rooms or enclosures provided for the purpose, or should be located an appropriate distance above the floor in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''.

RELATED PRODUCTS

Battery chargers intended to recharge industrial storage batteries that provide power for material-handling trucks, tractors, personnel carriers and similar motive equipment are covered under Battery Chargers, Industrial Certified for Canada (BBHZ7).

Battery chargers intended for nonautomotive-type applications are covered under Battery Chargers, Nonautomotive Type Certified for Canada (BBML7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 107.2, "Battery Chargers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Battery Charger" or "Battery Charger Station."

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BATTERY CHARGERS, INDUSTRIAL CERTIFIED FOR CANADA (BBHZ7)

USE

This category covers battery chargers intended for use with industrial storage batteries, which provide power for material-handling trucks, tractors, personnel carriers, and similar motive equipment. These industrial battery chargers are rated 600 V or less. They may be either cord-and-plug connected or permanently connected.

REBUILT PRODUCTS

This category also covers industrial battery chargers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt industrial battery chargers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt industrial battery chargers are subject to the same requirements as new industrial battery chargers.

RELATED PRODUCTS

Battery chargers intended for charging engine-starter batteries are covered under Battery Chargers, Automotive Type Certified for Canada (BBGQ7).

Household- and commercial-type battery chargers intended for nonautomotive use are covered under Battery Chargers, Nonautomotive Type Certified for Canada (BBML7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 107.2, "Battery Chargers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Industrial Battery Charger."

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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BATTERY CHARGERS, MARINE CERTIFIED FOR CANADA (BBJY7)

GENERAL

This category covers semiautomatic and automatic battery chargers intended for fixed installation aboard boats.

The battery chargers are intended for installation and operation in accordance with the manufacturer's instructions and the applicable requirements of CSA-C22.2 No. 183.1, "Alternating-Current (AC) Electrical Installations on Boats," and CSA-C22.2 No. 183.2, "DC Electrical Installations on Boats."

Battery chargers that comply with the ignition-protection requirements are marked "Ignition Protection."

This category does not cover portable battery chargers except that the chargers may be equipped with demountable brackets for removal when not in use.

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 107.2 (2001), "Battery Chargers."

UL MARK

The Marine Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Marine Listing Mark for these products includes the UL Mark for Canada symbol with the word "MARINE" above the UL symbol (as illustrated in the Introduction of this Directory), the word "LISTED," a control number, and the product name "Battery Charger," "Battery Charger, Marine" or "Marine Battery Charger."

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BATTERY CHARGERS, NONAUTOMOTIVE TYPE CERTIFIED FOR CANADA (BBML7)

USE

This category covers indoor- and outdoor-use household and commercial battery chargers intended for nonautomotive use and having other than Class 2 output.

RELATED PRODUCTS

Automotive-type battery chargers intended for charging starter-motor batteries are covered under Battery Chargers, Automotive Type Certified for Canada (BBGQ7).

Battery chargers intended to recharge industrial storage batteries which provide power for material-handling trucks, tractors, personnel carriers and similar motive equipment are covered under Battery Chargers, Industrial Certified for Canada (BBHZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 107.2, "Battery Chargers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Battery Charger," or other appropriate product name as shown in the individual Listings.

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BEDDING, ELECTRICALLY HEATED CERTIFIED FOR CANADA (BBTY7)

USE

This category covers electrically heated blankets, comforters, quilts, sheets, mattress pads, mattresses, foot warmers, throw blankets (or throws), slumber heat pads, and similar bedding intended for household use.

Safety and laundering instructions are provided in the unit markings as well as the packaging or instruction manual provided with each unit.

This category does not cover electrically heated bedding intended for infants or helpless people insensitive to heat, such as a person with poor blood circulation.

This category does not cover electric bedding intended for mechanical beds and the like, unless specifically indicated in the individual certifications.

RELATED PRODUCTS

Products intended for hospital service or other similar supervised medicinal usage are covered under Medical Equipment Certified for Canada (PIDF7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 101 (1984), "Electrically Heated Bedding Appliances for Household Use," in addition to the following:

CSA Technical Information Letter No. 93-045, "Flame Testing for Non-metallic Enclosures" (June 2, 1993)

CSA Technical Information Letter No. 529, "Introduction of Metric Units, Adoption of TIL 969, 969A, 969B, and 969C" (November 12, 1986)

CSA Technical Information Letter No. 529A, "Air Oven Aging Temperature for Flexibility Testing of PTC Heater Type Element Wire" (May 22, 1987)

CSA Technical Information Letter No. 529B, "Supplement to TIL 529 and 529A: Product Instructions" (December 15, 1989)

CSA Technical Information Letter No. 611, "Use of Wool Felt in Place of Hair Felt for Test Purposes" (October 6, 1988)

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Electric Blanket," "Electric Comforter," "Electric Quilt," "Electric Sheet," "Electric Mattress Pad," "Mattress," "Electric Foot Warmer," "Electric Throw Blanket," "Electric Throw," "Slumber Heat Pad," or the name of the specific type of product as shown in the individual Listings.

* *

BLOWPIPES AND TORCHES CERTIFIED FOR CANADA (BDCT7)

USE

This category covers blowpipes and torches intended for oxy-fuel or air-aspirated fuel gas welding and cutting operations. Devices intended for use with acetylene are designed to utilize this gas at pressure not over 100 kPa from low- or medium-pressure acetylene generators, or stored in high-pressure acetylene cylinders employing suitable pressure-reducing valves. Devices for use with other fuel gases are intended for use at those pressures recommended by the manufacturer.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C123 (1975), "Guide for the Investigation of Torches, Oxy-Fuel Gas."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Welding Torch," "Cutting Torch," "Cutting Attachment," "Cutting and Welding Torch (Blowpipe)," "Powder Spraying Attachment," "Powder Spraying Torch," "Heating Blowpipe," "Scarfing Blowpipe," or other appropriate product name as shown in the individual Listings.

* *

BOILERS, ELECTRIC CERTIFIED FOR CANADA (BDJS7)

GENERAL

This category covers electrically heated steam and hot water boilers that are within the scope of ASME Boiler and Pressure Vessel Codes, Volume I (Power Boilers) and Volume IV (Heating Boilers). This category may also include water heaters if, based on water temperature, input rating, or water tank capacity, they fall under the scope of the above ASME codes.

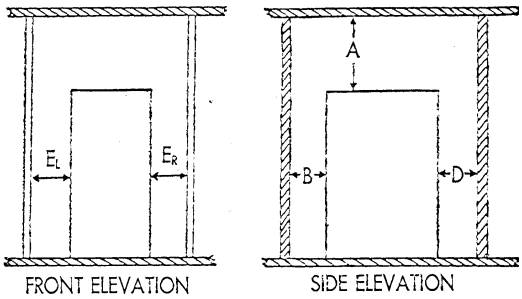
The pressure vessels of these appliances are constructed and stamped in accordance with the applicable section of the ASME Boiler and Pressure Vessel Code. The boilers are equipped with necessary temperature or pressure regulating and limit controls and with the appropriate ASME-rated pressure relief devices, and are marked with the appropriate ASME symbol.

INSTALLATION

Each boiler is provided with a marking that indicates the floor material (combustible or noncombustible) on which the boiler may be mounted and the necessary clearances from all other surfaces of the boiler to combustible materials.

The minimum acceptable clearances in centimeters between the boiler surfaces and adjacent combustible surfaces, the type of flooring required for mounting the boiler and the proper installation in an alcove or closet are indicated on the published printed cards by appropriate symbols and dimensions. The clearances so designated are the minimum required to avoid overheating, additional clearances may be required for accessibility. Each clearance requirement is indicated on the published printed cards by appropriate symbols and dimensions.

A boiler installation is indicated as follows:



Description of dimension, symbols and abbreviations:

A – Clearance above top of boiler

B – From front of boiler. Prefix "C" to numeral indicates suitability for closet or alcove installations; prefix "A," suitability for alcove installation but not for closet

D – From back of boiler

E_L – From left side of boiler

E_R – From right side of boiler

F – Indicates type of flooring: NC = Noncombustible, C = Combustible; numeral indicates minimum clearance below suspended units to combustible floor

G – Total minimum free area in square centimeters of closet ventilating openings

RELATED PRODUCTS

Water heaters for potable water limited to a maximum water temperature of 99°C (210°F) are covered under Commercial Storage Tank and Booster Water Heaters Certified for Canada (KSBZ7), Water Heaters, Space Heating Certified for Canada (KSDR7) and Household Water Heaters, Storage Tank Certified for Canada (KSDT7).

Other hot water and steam generating equipment employing construction outside the scope of the ASME Boiler and Pressure Vessel Code are covered under Heaters, Industrial and Laboratory Certified for Canada (KQLR7), Commercial Cooking Appliances Certified for Canada (KNGT7), Household Cooking Appliances Certified for Canada (KNUR7) and Heaters, Specialty Certified for Canada (KSOT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 165, "Electric Boilers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Electric Boiler," or other appropriate product name as shown in the individual Listings.

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BOOTHS, TELEPHONE CERTIFIED FOR CANADA (BEDZ7)

INDOOR TELEPHONE BOOTHS CERTIFIED FOR CANADA (BERX7)

GENERAL

This category covers indoor telephone booths. These booths may incorporate fans, switches, and completely wired luminaires in various combinations. Each booth may be packaged unassembled and shipped for field assembly.

RELATED PRODUCTS

Luminaires, such as those to illuminate telephone directories, located on the outside of booths, are covered under Luminaires and Fittings, Special Purpose, Miscellaneous Certified for Canada (IETR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250, ''Luminaires.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Telephone Booth,'' ''Indoor Telephone Booth'' or ''Indoor Booth.''

* *

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OUTDOOR TELEPHONE BOOTHS CERTIFIED FOR CANADA (BFFV7)

GENERAL

This category covers outdoor telephone booths consisting of structural metal frames and roof sections with separate wireways for telephone and power-supply conductors. The booths incorporate fans, switches and completely wired luminaires in various combinations. Each booth may be packaged unassembled and shipped for field assembly.

This category also covers accessories, such as pedestals, that incorporate separate wireways for telephone and power-supply conductors.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250, ''Luminaires.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Wired Outdoor Telephone Booth'' or ''Outdoor Telephone Booth Accessory.''

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BOWLING AND BILLIARD EQUIPMENT CERTIFIED FOR CANADA (BFTT7)

USE

This category covers equipment intended for use in bowling and billiard establishments and for servicing pins and balls.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial),'' CSA-C22.2 No. 118, ''Construction and Test of Picture Machines and Appliances,'' and CAN/CSA-C22.2 No. 60950-1, ''Information Technology Equipment – Safety – Part 1: General Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Bowling Equipment'' or ''Billiard Equipment,'' or the name of the specific product as shown in the individual Listings.

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BOXES, JUNCTION AND PULL CERTIFIED FOR CANADA (BGUZ7)

GENERAL

This category covers sheet-metal boxes, cast-metal boxes, and nonmetallic boxes. These boxes are provided with a cover secured by fasteners other than hinges. All boxes in this category have a volume of more than 1640 cm^3 (100 cu in). These boxes are intended for installation in accordance with Section 12 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

ENVIRONMENTAL RATINGS AND CONDITIONS

Each junction and pull box is marked with one or more of the following Enclosure Type ratings for which it was investigated: Type 1, 2, 3, 3R, 3S, 4, 4X, 5, 6, 6P, 12, 12K or 13. The intended uses for each Enclosure Type are as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

PVC junction and pull boxes are suitable for use with PVC rigid nonmetallic conduit. Such boxes are inherently resistant to atmospheres containing common industrial corrosive agents and will also withstand vapors or mists of caustics, pickling acids, plating baths, hydrofluoric and chromic acids.

Boxes marked as Type 2 or 3R enclosures may be marked to indicate the intended mounting orientation, or the location where electrical parts are intended to be installed, or both, where necessary to maintain the designated environmental rating.

Boxes marked as Type 3, 3S, 4, 4X, 6, 6P, 12, 12K or 13 have integral mounting means external to the enclosure cavity or may have openings into the enclosure cavity for attachment of separate mounting means supplied with the enclosure or available as a kit referenced from enclosure markings.

CONDUIT CONNECTIONS

Cast-metal boxes suitable for field drilling and tapping of holes for conduit connections and mounting are marked to indicate the location and the trade sizes of the openings either on the box or on the packaging carton.

USE IN CONCRETE OR CINDER FILL

Cast-aluminum boxes suitable for use in concrete or cinder fill are marked to indicate this fact either on the box or on the packaging carton. These boxes may not be supplied with mounting means.

ELECTRICAL EQUIPMENT

Some boxes are intended for the installation of specific kinds of equipment; however, this category does not cover any electrical material or fittings contained in the box.

GROUNDING PROVISIONS

Metal boxes are intended to receive one of the bonding conductors specified in Rule 10-804 of the CEC and are provided with either a factory-supplied equipment grounding conductor terminal or instructions to obtain equipment grounding conductor terminal kit(s) available from the manufacturer, or are marked to indicate the boxes are intended to be grounded by metal raceways or metallic cable sheaths.

RELATED PRODUCTS

Boxes intended for electric meter sockets are covered under Meter Sockets Certified for Canada (PJYZ7).

Boxes provided with a door are covered under Cabinets and Cutout Boxes Certified for Canada (CYIV7).

Enclosures intended for use with industrial control panels are covered under Industrial Control Panels Certified for Canada (NITW7).

Boxes having a volume of 1640 cm^3 (100 cu in.) or less are covered under Metallic Outlet Boxes Certified for Canada (QCIT7) or Nonmetallic Outlet Boxes Certified for Canada (QCMZ7).

Boxes for use in hazardous (classified) locations are covered under Boxes, Junction and Pull for Use in Class I, Zone Classified Hazardous Locations Certified for Canada (BGYM7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 94, "Special Purpose Enclosures."

UL MARK

The Listing Mark on the product, or the UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Junction and Pull Box," "Junction Box," "Pull Box," "J&P," or other appropriate product name as shown in the individual Listings.

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BOXES, JUNCTION AND PULL FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (BGYM7)

USE AND INSTALLATION

This category covers sheet-metal boxes, cast-metal boxes, and nonmetallic boxes intended for making wiring connections only.

All boxes in this category are for use with threaded rigid conduit or steel intermediate metal conduit, or other approved wiring methods in accordance with Section 18 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Boxes identified with an enclosure type designation are intended for use as indicated in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

Cast-metal boxes suitable for field drilling and tapping of holes for conduit connections and mounting are marked to indicate the location and the trade sizes of the openings either on the box or on the packaging carton.

Cast-aluminum boxes suitable for use in concrete or cinder fill are marked to indicate this fact either on the box or on the packaging carton. Such boxes are protected with asphalt-base paint or the equivalent.

Where field installation of certain kinds of equipment is acceptable, which may include terminals, jumpers, busbars, conduit fittings, etc., the installation instructions provided with the product will specify the type, number and mounting arrangements for the equipment to be installed.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 94, "Special Purpose Enclosures."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Junction and Pull Box for Hazardous Locations," "Junction Box for Hazardous Locations" or "Pull Box for Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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BRAKES, ELECTRIC FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (BHIX7)

GENERAL

This category covers brakes intended primarily for holding purposes, but may be used for stopping light-inertia loads.

This category includes two types of electric brakes. One type is intended to be attached directly to a certified motor at the factory of the motor manufacturer in accordance with instructions provided by the brake manufacturer. The other type is provided with a mounting bracket and is coupled to the motor.

For Class I, Division 2 locations, the enclosure may be of the open or totally enclosed type. The Group designation is marked unless the brake is acceptable for Groups A, B, C and D. The brake is also marked with the operating temperature code designating the maximum internal or external surface temperature determined at rated full-load torque marked on the brake, if the temperature is greater than 100°C. If the enclosure incorporates one or more arcing or sparking parts, the part is housed in a Class I, Division 1 enclosure or the part is within a hermetically sealed enclosure, constructed with current-interrupting contacts immersed in oil, located in a nonincendive circuit or located in a purged and pressurized enclosure. If the brake is provided with an internal space heater, the space heater is intended to be wired in the control circuit such that the space heater is energized when the motor to which the brake is coupled is deenergized, and vice versa.

For Class II, Division 2 locations, the enclosure is of the totally enclosed type. The brake is marked with the operating temperature or operating temperature code designating the maximum full load external temperature determined at rated full-load torque (as marked on the brake), when operating in free air (not dust blanketed), if the external temperature is greater than 100°C.

The Certification Mark on a brake applies to the brake only, not to driving equipment, such as a motor.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division I and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division I and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Electric Brake for Hazardous Locations."

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BUILDING MATERIALS CERTIFIED FOR CANADA (BHWV7)

DISCRETE PRODUCTS INSTALLED IN AIR-HANDLING SPACES CERTIFIED FOR CANADA (BHZF7)

GENERAL

This category covers products installed in air-handling spaces (plenums) as defined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

The test provides data with regard to peak rate of heat release, maximum peak normalized optical density and maximum average normalized optical density during fire exposure of the certified materials.

Discrete Products Installed in Air-handling Spaces Certified for Canada (BHZF7)−*Continued*

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C2043, "Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces."

UL MARK

The Classification Mark of UL on the product or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

+

AS TO HEAT RELEASE RATE AND SMOKE OPTICAL DENSITY ONLY

Control No.

+ The product name or other appropriate product description as shown in the individual Classifications

****

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SURFACE BURNING CHARACTERISTICS CERTIFIED FOR CANADA (BIKT7)

GENERAL

Surface burning characteristics provide data with regard to flame spread and smoke developed during fire exposure of the Classified materials in comparison with inorganic reinforced cement board and untreated red oak lumber when exposed to fire under similar conditions.

UNEVALUATED FACTORS

The toxicity of the products of combustion has not been investigated. It should be recognized that the products of combustion from fires may be toxic to varying degrees, inasmuch as they may include smoke (particulate), carbon dioxide, carbon monoxide, and other vapors and gases, depending upon the conditions of heating or burning and the materials involved. Occupancy tenability depends upon the conditions of heating or burning and the degree of confinement (ventilation) of the products of combustion or decomposition.

REQUIREMENTS

Fire tests based on Classifications of materials that are self-supportable in position, or supported in a test furnace to a thickness comparable to their intended use, are conducted according to CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies." The self-supporting capabilities of materials may arise from their structural integrity or the manner in which they are applied.

Fire tests based on Classifications of flooring, floor covering materials, and materials that are not self-supporting, or that cannot be conveniently tested in a ceiling-mounted configuration, such as thermoplastics and loose-fill materials, are conducted according to CAN/ULC-S102.2, "Method of Test for Surface Burning Characteristics of Floor Coverings, and Miscellaneous Materials and Assemblies."

CAN/ULC-S102 and CAN/ULC-S102.2 also invoke the provisions of ULC-S127, "Standard Corner Wall Method of Test for Flammability Characteristics of Non-Melting Building Materials," for materials with low thermal inertia, such as foamed plastics.

****

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Acoustical Materials Certified for Canada (BIYR7)

GENERAL

This category covers acoustical materials certified as to surface-burning characteristics as shown in the individual certifications.

Acoustical tiles that are not self-supporting are supported for the tests with metal (noncombustible) supports or fasteners or attached to wood furring strips (combustible).

Acoustical Materials Certified for Canada (BIYR7)−*Continued*

Some acoustical materials are provided with facings that may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the facing or by using a factory or field joint (if applicable).

In some cases, products are certified under the designation "FHC 25/50." This denotes that these products have flame-spread values of 25 or less and smoke-developed values of 50 or less.

The certifications are confined to the materials themselves and to the methods of application indicated and do not pertain to structures in which the materials may be installed.

Products identified as finished with a coating have not been investigated as to increase of surface burning due to repainting after installation.

The sound absorbing qualities, light reflectance, washability, toxicity of the products of combustion, and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For the fire-resistance rating of these products, see Acoustical Materials Certified for Canada (BYIT7).

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product or package of products is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ACOUSTICAL MATERIAL

SURFACE BURNING CHARACTERISTICS

+

Issue No.

+ Flame spread and smoke developed values or the designation "FHC 25/50" applicable to the product

****

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Adhesives Certified for Canada (BJLZ7)

GENERAL

This category covers adhesives certified as to surface-burning characteristics when applied to uncoated, high density (nominal 1762 kg/cu meter), 1/4 in. thick inorganic reinforced cement board with flame-spread and smoke-developed values of 0 and other surfaces at the specific coverage rates indicated in the individual certifications.

The flash point of the finished adhesive appears in the individual certifications. The publication of the flash point is not intended to establish a flammability classification of the liquid adhesives, but to indicate the flashing characteristics of the liquid adhesive under a standard test procedure. When no flash point values appear in the individual certifications, the adhesive shows no flash point in the closed-cup tester. When it is not possible to determine the flash point in the closed-cup tester, the flash point is indicated as "Not Determinable."

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Surface Burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

Adhesives Certified for Canada (BJLZ7)−*Continued*

ADHESIVE
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
ADHESIVE
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

*** ***

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Batts and Blankets Certified for Canada (BKNV7)

GENERAL

This category covers batts and blankets for building insulation certified as to surface-burning characteristics in the individual certifications.

Some batts or blankets are provided with facings that may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the facings or by using a factory or field joint (if applicable). Materials that do not have sufficient rigidity to support themselves in the tests are supported with metal rods or bars.

In some cases, products are certified under the designation "FHC 25/50." This denotes that these products have flame-spread values of 25 or less and smoke-developed values of 50 or less.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials are installed.

The thermal conductivity, vapor resistance, toxicity of the products of combustion, and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

In addition to the surface-burning characteristics, where indicated in the individual certifications, unfaced batts and blankets have also been investigated to CAN/ULC-S114, "Standard Method of Test for Determination of Noncombustibility in Building Materials."

UL MARK

The Classification Mark of UL on the product or package of products is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BATTS AND BLANKETS
SURFACE BURNING CHARACTERISTICS
+
Issue No.
or
BATTS AND BLANKETS
SURFACE BURNING CHARACTERISTICS
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
+
Issue No.

+ Flame spread and smoke developed values or the designation "FHC 25/50" applicable to the product

*** ***

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Building Units Certified for Canada (BLBT7)

GENERAL

Building Units Certified for Canada (BLBT7)−*Continued*

This category covers building units, consisting of proprietary mixes of organic and/or inorganic materials formed into panels, blocks, boards, planks, slabs, or sheets fabricated into various sizes, thicknesses and shapes, certified as to surface-burning characteristics.

Some building units are provided with facings or are composites of several materials which may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the facing or by using a factory or field joint (if applicable).

For building units consisting of an interior core material faced on both surfaces, the certification of the product includes the surface-burning characteristics of the core material in addition to the surface-burning characteristics of the finished product.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The insulating, acoustical, structural, toxicity of the products of combustion, and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product or carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BUILDING UNITS
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
BUILDING UNITS
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

*** ***

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Caulking and Sealants Certified for Canada (BLIS7)

GENERAL

This category covers caulkings and sealants certified as to surface-burning characteristics when applied to uncoated, high density (nominal 110 pcf), 1/4 in. thick inorganic reinforced cement board, with flame-spread and smoke-developed values of 0, in longitudinal beads or strips at the specific percentages of exposed area or at full coverage at the specific sq m/l as shown in the individual certifications.

The flash point of liquid materials is also determined. The publication of the flash point data is not intended to establish a flammability classification of the liquid material, but to indicate the flashing characteristics of the liquid material under a standard test procedure. When no flash point values appear in the individual certifications, either the liquid material shows no flash point in the closed tester or flash point is not applicable to the product tested.

The certifications are confined to the materials themselves and do not pertain to the structures in which they are installed.

The toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test For Surface Burning Characteristics of Building Materials and Assemblies."

Caulking and Sealants Certified for Canada (BLIS7)−*Continued*

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CAULKINGS AND SEALANTS
SURFACE BURNING CHARACTERISTICS
+
Control No.

+ Flame spread and smoke developed values applicable to the product, as well as information on how the product was applied and the application rate

*** ***

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Cementitious Cement and Plaster Mixtures Certified for Canada (BLPR7)

GENERAL

This category covers cementitious mixtures certified as to surface-burning characteristics when applied in accordance with instructions supplied with the material.

Cementitious mixtures included in the individual certifications cover proprietary mixes prepared at the factory, which require only the addition of water for application to interior building surfaces in the field.

Cementitious mixtures are certified as to surface-burning characteristics when applied to uncoated, high density (nominal 110 pcf), 1/4 in. thick inorganic reinforced cement board with flame-spread and smoke-developed values of 0 and other surfaces at the thickness indicated in the individual certifications.

The certifications are confined to the materials themselves and do not pertain to the structures to which the materials are applied.

The thermal conductivity, vapor resistance, toxicity of the products of combustion, and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For the fire-resistance rating of these products, see Spray-applied Fire-resistive Materials Certified for Canada (CHPX7).

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CEMENTITIOUS MIXTURES
SURFACE BURNING CHARACTERISTICS
+
Issue No.
or
CEMENTITIOUS MIXTURES
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Issue No.

+ Flame spread and smoke developed values applicable to the product

*** ***

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Coating Materials Certified for Canada (BMCZ7)

This category covers coating materials intended for application to building surfaces. They are divided into two categories: (1) Coatings, Fire Retardant, intended for application to interior combustible surfaces (and occasionally interior noncombustible surfaces) for the purpose of reducing the surface burning characteristics, and (2) Coatings, General Purpose, intended for various purposes. The purpose of the classification is to express the degree of surface burning characteristics of the coating.

Coating Materials Certified for Canada (BMCZ7)−*Continued*

The flash points (closed cup) of the fire retardant and general-purpose coatings (including preliminary and overcoatings) appear in the individual classifications. The publication of the flash point data is not intended to establish a flammability classification of the liquid coatings, but to indicate the flashing characteristics of the liquid coatings under a standard test procedure. Where "no flash" is indicated, the coating has no flash point in the closed-cup tester.

*** ***

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Coatings, Fire Retardant Certified for Canada (BMQX7)

GENERAL

This category covers coating materials certified as to their surface-burning characteristics as applied to the specific interior surfaces and at the specific coverage rates indicated in the individual certifications. The flash points (closed-cup method) of the coatings are also indicated in the individual certifications.

To be eligible for certification, the surface coating or coating system must reduce the flame spread of Douglas fir and all other tested interior combustible surfaces (having flame spreads of 100 or greater by test) to which it is applied at least 50% or to a flame-spread classification value of 50 or less, whichever is the lesser spread of flame. A coating or coating system may be certified as applied to other surfaces (having flame spreads of less than 100 by test) after its eligibility as a fire-retardant coating or coating system has been established as applied to Douglas fir, with the requirement that the flame-spread classification must not exceed a value of 50 to be eligible for certification.

The surface-burning characteristics are applicable only when the coating is applied at the rates of coverage and to the type or kind of surfaces indicated, when the coating is applied in accordance with the directions supplied with the container, and when the coating is maintained.

Typical combustible surfaces indicated in the individual certifications are Douglas fir, cellulose acoustical tile, cellulose board, and oriented strandboard (OSB). The Douglas fir substrates consist of nominal 1 by 4 in. finished tongue-and-groove flooring. (The flame spread of the uncoated Douglas fir is 70-100.)

The cellulose acoustical tile substrates consist of nominal 12- by 12- by 1/2 in. tongue-and-groove "Factory Finish" (starch type) perforated tiles. (The flame spread of the cellulose tile substrates is normally in excess of 150.)

The cellulose board substrates consist of nominal 10- by 48- by 1/2 in. square edge "Factory Finish" (starch type) unperforated boards. (The flame spread of the cellulose board is normally in excess of 75.)

The oriented strandboard substrates consist of a nominal 3/4 in. thick 24 in. wide by 96 in. long board. (The flame spread of the oriented strandboard is normally in excess of 150.)

Unless otherwise indicated in the individual certifications, cellulose board and cellulose tile substrates are supported for the tests attached to wood furring strips.

Typical noncombustible surfaces indicated in the individual certifications are 1/4 in. thick inorganic reinforced cement board (flame spread 0) and gypsum wallboard (flame spread 15).

Fire-retardant coatings may be tinted in the field provided compatible tints are used in a proportion not exceeding 2 oz. of tint per gal. of coating.

Deeper shades may or may not be supplied by the individual manufacturers.

The certifications are confined to the materials themselves and do not pertain to the structures on which the materials are installed.

The toxicity of the products of combustion and other properties have not been investigated.

The useful life of these coating materials has not been investigated; however, it is important that the coatings be maintained for continued effectiveness.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Coating Materials Certified for Canada (BMCZ7), Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

Coatings, Fire Retardant Certified for Canada (BMQX7)−*Continued*

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for fire-retardant coatings includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FIRE RETARDANT COATING
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
FIRE RETARDANT COATING
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

The Classification Mark for preliminary coatings or overcoatings includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

*
TO BE USED WITH [MANUFACTURER'S NAME AND PRODUCT DESIGNATION]
FIRE RETARDANT COATING(S) IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO PRODUCE FINISHED CLASSIFIED SYSTEMS.
FOR RESPECTIVE UL CLASSIFICATIONS, SEE THE FIRE RETARDANT COATING LABEL.
Control No.

* **PRELIMINARY COATING** or **OVERCOATING**

****

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Coatings, General Purpose Certified for Canada (BNEV7)

GENERAL

This category covers coating materials certified as to surface-burning characteristics when applied to the specific surfaces and at the specific coverage rate indicated in the individual certifications. The flash points (closed-cup tester) of the coatings are also indicated in the individual certifications.

The coating (system) has initially been investigated as applied to uncoated high-density (nominal 1762 kg/cu meter), 1/4-in.-thick inorganic reinforced cement board with flame-spread and smoke-developed values of 0. The coating (system) may have also been investigated on other surfaces or substrates.

General-purpose coatings may be tinted in the field, provided compatible tints are used in a proportion not exceeding 7 oz. of tint per gal of coating. Deeper shades may or may not be supplied by the individual manufacturers.

These materials have been investigated for their surface-burning characteristics only and have not been investigated for their resistance to weather or exterior exposure or for the toxicity of the products of combustion.

The certifications are confined to the materials themselves and do not pertain to the structures in which the material is installed.

Authorities Having Jurisdiction should be consulted before application.

ADDITIONAL INFORMATION

For additional information, see Coating Materials Certified for Canada (BMCZ7), Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification

Coatings, General Purpose Certified for Canada (BNEV7)−*Continued*

and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

GENERAL PURPOSE COATING
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
GENERAL PURPOSE COATING
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

****

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Loose Fill Materials Certified for Canada (BPHX7)

GENERAL

This category covers loose fill materials intended to be poured or blown into stud spaces of walls or joist spaces of ceilings or attics for thermal insulation purposes.

All noncellulosic-based materials are Classified as to surface-burning characteristics in accordance with CAN/ULC-S102.2, "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies."

Cellulosic-based materials are Classified in accordance with CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings." This standard includes investigations of Types 1 and 2 cellulosic insulation for Corrosiveness, Design Density, Fungi Resistance, Moisture Vapor Sorption, Open-Flammability, Open-Flammability Permanency, Separation of Chemicals, Smoulder Resistance and Thermal Resistivity. It also includes the following additional investigations on Type 2 insulation, if applicable: Cohesion/Adhesion – Exposed Surfaces; Design Moisture – Closed Cavities and Open Spaces; and Settlement – Open Spaces.

Unless otherwise noted in the individual Classifications, cellulosic materials are intended for pneumatic application.

Loose fill materials consisting of cellulosic fiber chemically treated to reduce its combustibility incorporate treatments consisting of water-soluble salts which may be affected by repeated exposure to water or conditions that may result in the condensation of water and will continue, under unfavorable conditions, to smoulder and glow.

The Classifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The toxicity of the products of combustion have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate noncellulosic products in this category for surface-burning characteristics is CAN/ULC-S102.2, "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies."

The basic standard used to investigate cellulosic products in this category is CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings." Where indicated in the individual Classifications, cellulosic products may also be investigated for surface-burning characteristics to CAN/ULC-S102.2.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

For noncellulosic-based materials:

LOOSE FILL MATERIAL
SURFACE BURNING CHARACTERISTICS
+
Issue No.

+ Flame-spread and smoke-developed values applicable to the product

For cellulosic-based materials:

Loose Fill Materials Certified for Canada (BPHX7)−*Continued*

CELLULOSE FIBRE INSULATION
AS TO THE FOLLOWING CHARACTERISTICS:

Corrosiveness	Acceptable
Design Density	XX kg/m^3
Fungi Resistance	Acceptable
Moisture Vapour Sorption	Acceptable
Open-Flammability	Acceptable
Open-Flammability Permanency	Acceptable
Separation of Chemicals	Acceptable
Smoulder Resistance	Acceptable
Thermal Resistivity	X.XX RSI/cm
Cohesion/Adhesion – Exposed Surfaces (if applicable)	Acceptable
Design Moisture – Closed Cavities and Open Spaces (if applicable)	Acceptable
Settlement – Open Spaces (if applicable)	Acceptable

Issue No.

In addition, cellulosic-based materials investigated to CAN/ULC-S102.2 will also include the additional marking:

SURFACE BURNING CHARACTERISTICS
+

+ Flame-spread and smoke-developed values applicable to the product

*** ***

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Lumber, Treated Certified for Canada (BPVV7)

GENERAL

This category covers the surface-burning characteristics of lumber that has been treated by pressure impregnation to reduce combustibility.

To be eligible for certification, treated lumber must have a flame spread of less than 70 or 70% of the flame spread of untreated lumber of the same species, whichever results in the lesser value.

Unless otherwise indicated, the treatments consist of water soluble salts which will be affected by repeated exposure to water or conditions that may result in the condensation of water. In order to determine the effect of moisture conditions on the surface-burning characteristics, treated lumber (where indicated in the individual certifications) has been subjected to a Standard Rain Test (CAN/ULC-S107 (1987), "Standard Methods of Fire Tests of Roof Coverings") consisting of cyclic wetting and drying periods. These products are eligible to bear the supplemental statement "No increase in the listed Classification when subjected to the Standard Rain Test."

The surface-burning characteristics are established on samples dried to equilibrium at Standard conditions without further processing or machining. As the lumber is not necessarily treated throughout its cross section, it is imperative that no outer material be removed if the published certifications are to be maintained. However, some species of treated lumber, as indicated in the individual certifications, may have been factory milled on either surface without altering the existing classification, as determined by fire testing material before and after milling.

Some species of treated lumber, as indicated in the individual certifications, have also been tested for the spread of flame and evidence of significant progressive combustion for tests of 30-min duration under the same conditions of exposure.

The structural qualities of this lumber have not been determined. The certifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.

The toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

Lumber, Treated Certified for Canada (BPVV7)−*Continued*

TREATED LUMBER
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
TREATED LUMBER
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

In addition, one or more of the following statements may be added if so qualified:

1. "No evidence of significant progressive combustion in tests of 30 minutes duration"
2. "Results apply to samples machined before or after treatment"
3. "No increase in the listed Classification when subjected to the Standard Rain Test"

*** ***

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Mineral and Fiber Boards Certified for Canada (BQXR7)

GENERAL

This category covers mineral and fiber boards consisting of proprietary mixes of organic and/or inorganic fibers and binders formed into various sizes and thicknesses and supplied with or without surface coatings or facings. The boards are certified as to surface-burning characteristics as indicated in the individual certifications.

Some mineral and fiber boards are provided with facings that may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the facings or by using a factory or field joint (if applicable).

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The insulating, acoustical, structural, toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

In addition to the surface-burning characteristics, where indicated in the individual certifications, unfaced mineral and fiber boards have also been certified to CAN/ULC-S114, "Standard Method of Test for Determination of Noncombustibility in Building Materials."

UL MARK

The Classification Mark of UL on the product or smallest unit package is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MINERAL AND FIBER BOARDS
SURFACE BURNING CHARACTERISTICS
+
Control No.

+ Flame spread and smoke developed values applicable to the product

or
(unfaced mineral and fiber boards only)
MINERAL AND FIBER BOARDS
SURFACE BURNING CHARACTERISTICS
++
Control No.

++ Flame spread and smoke developed values applicable to the product and the following statement: **ALSO CLASSIFIED IN ACCORDANCE WITH CAN/ULC-S114 STANDARD METHOD OF TEST FOR DETERMINATION OF NONCOMBUSTIBILITY IN BUILDING MATERIALS**

*** ***

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Mineral and Fiber Boards Certified for Canada (BQXR7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Pipe- and Equipment-covering Materials Certified for Canada (BRGU7)

GENERAL

This category covers pipe- and equipment-covering materials consisting of proprietary mixes of organic and/or inorganic materials and binders formed into rectangular or circular cross sections, and supplied with or without facings and joint treatments. The covering materials are certified as to surface-burning characteristics as indicated in the individual certifications.

Some pipe and equipment coverings are provided with facings that may affect the contribution of combustibles under fire conditions. The effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the facing and/or by using a factory or field joint (if applicable).

For those materials employing a field joint covering treatment, the facing is provided with a seam (as above) prior to the application of the joint covering treatment.

When the materials are field laminated to the pipe, the surface-burning characteristics are derived when the material is applied with the specified adhesive to uncoated, high density (nominal 110 pcf), 1/4-in.-thick inorganic reinforced cement board that has flame-spread and smoke-developed values of 0. The certifications are confined to the materials themselves, when applied to the surface indicated, in accordance with the directions as shown in the individual certifications or supplied with the product or the adhesive.

In some cases, products are certified under the designation "FHC 25/50." This denotes that these products have flame-spread values of 25 or less and smoke-developed values of 50 or less.

Materials that do not have sufficient rigidity to support themselves during the test are supported with metal rods or 2-in. hexagonal mesh wire with metal rods.

The washability, thermal conductivity, vapor resistance, structural, toxicity of the products of combustion and other properties have not been investigated.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

In addition to the surface-burning characteristics, where indicated in the individual certifications, pipe- and equipment-covering materials have also been certified to ASTM C411, "Hot-Surface Performance of High Temperature Thermal Insulation," at the maximum temperature to which they may be exposed in service.

In addition, where indicated in the individual certifications, unfaced pipe and equipment covering-materials have also been certified to CAN/ULC-S114, "Standard Method of Test for Determination of Noncombustibility in Building Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

PIPE AND EQUIPMENT COVERING
SURFACE BURNING CHARACTERISTICS
+
Control No.

+ Flame spread and smoke developed values or the designation "FHC 25/50" applicable to the product

****

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Plastic Certified for Canada (BRKZ7)

This category covers foamed plastic (BRYX7) and reinforced plastic (BTOR7).

Foamed Plastic Certified for Canada (BRYX7)

GENERAL

This category covers foamed plastic materials in the form of factory-produced boards, panels and tile, or ingredients for use in forming foamed plastic materials in the field. Foamed plastic materials are Classified as to surface burning characteristics as indicated in the individual Classification Mark on, or in connection with, the product.

The Classifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The toxicity of the product of combustion and other properties have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Surface Burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate thermosetting foamed plastic materials is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

The basic standard used to investigate thermoplastic foamed plastic materials is CAN/ULC-S102.2, "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies."

In addition to the surface burning characteristics, where indicated in the individual Classifications, the foamed plastic has also been Classified in accordance with CAN/ULC-S701-05, "Thermal Insulation, Polystyrene, Boards and Pipe Covering," for Types 1, 2 and 3.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service.

The Classification Mark appears on the cartons of factory-produced blocks, boards, panels and tile. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory) and the following additional information:

FOAMED PLASTIC
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102 [or CAN/ULC-S102.2]
Control No.

+ Flame spread and smoke developed values applicable to the product

or

The Classification Mark appears on the containers of foamed plastic ingredients intended for field applications. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FOAMED PLASTIC INGREDIENTS
SURFACE BURNING CHARACTERISTICS
++
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102
Control No.

++ In addition to the flame spread and smoke developed values, the Classification Mark also incorporates the manufacturer's designation for the specific ingredient within the marked container, the designation for the other ingredients with which it must be reacted, and the thickness and density of plastic material to which the surface burning characteristics is applicable.

****

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Laminated Plastic Certified for Canada (BSMV7)

GENERAL

This category covers laminated plastic consisting of layers of resin-impregnated papers bonded under heat and pressure to form decorative or nondecorative sheets, certified as to surface-burning characteristics as indicated in the individual certifications. These materials are tested unbonded and bonded to uncoated, high-density (nominal 1762 kg/cu meter), 1/4-in.-thick inorganic reinforced cement board with recommended adhesive(s) in accordance with instructions accompanying the product or adhesive(s). Laminated plastic may also be investigated on other surfaces or substrates, as indicated in the individual certifications.

The bonding of laminated plastic may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the laminate or by using a factory or field joint (if applicable).

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

Washability, light reflectivity, durability, toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Plastic Certified for Canada (BRKZ7), Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

UL MARK

The Classification Mark of UL on the product or package of products is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

LAMINATED PLASTIC
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
LAMINATED PLASTIC
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE STANDARD CAN/ULC-S102M
Control No.

+ The flame-spread and smoke-developed values applicable to the product

*** ***

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Molded Plastic Certified for Canada (BTAT7)

GENERAL

This category covers molded plastic in the form of sheets, panels and grids certified as to surface-burning characteristics. Also, molded plastic strips are certified as to surface-burning characteristics with the specific percentage of exposed area limited as indicated in the individual certifications.

Certifications may be supplemented by evaluations of molded plastic bonded to a substrate as indicated in the individual certifications. The bonding of molded plastic may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the molded plastic or by using a factory or field joint (if applicable).

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The light transmission, washability, color stability, toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''The Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

The basic standard used to investigate thermoplastic materials is CAN/ULC-S102.2, ''Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies.''

Molded Plastic Certified for Canada (BTAT7)−*Continued*

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MOLDED PLASTIC
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
MOLDED PLASTIC
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

*** ***

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Reinforced Plastic Certified for Canada (BTOR7)

GENERAL

This category covers glass-fiber, and glass-fiber and metal reinforced plastic sheets as flat, corrugated, or patterned panels, certified as to the surface-burning characteristics as indicated in the individual certifications.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials my be installed.

The structural, light stability and translucence, weathering, toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

REINFORCED PLASTIC
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
REINFORCED PLASTIC
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

*** ***

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Plywood Certified for Canada (BUBZ7)

Treated Plywood Certified for Canada (BUGV7)

GENERAL

This category covers the surface-burning characteristics of treated plywood treated by pressure impregnation to reduce combustibility.

Unless otherwise indicated, the treatment consists of water-soluble salts which will be affected by repeated exposure to water or conditions that

Treated Plywood Certified for Canada (BUGV7)−*Continued*

may result in condensation. In order to determine the effect of moisture conditions on the surface-burning characteristics, treated plywood (where indicated in the following certifications) has been subjected to a Standard Rain Test (CAN/ULC-S107 (2003), ''Methods of Fire Tests of Roof Coverings'') consisting of cyclic wetting and drying periods. These products are eligible to bear the supplemental statement, ''No increase in the listed Classification when subjected to the Standard Rain Test.''

Some species of treated plywood, as indicated by the individual certifications, have also been tested for spread of flame and evidence of significant progressive combustion for test of 30 min. duration under the same conditions of exposure.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The structural qualities of this treated plywood have not been investigated.

The toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TREATED PLYWOOD
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
TREATED PLYWOOD
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

In addition, if so qualified, the following statements may be added:

1. ''No evidence of significant progressive combustion in tests of 30 min duration.''
2. ''No increase in the listed Classification when subjected to the Standard Rain Test.''

****

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Sheathing Materials Certified for Canada (BVDV7)

GENERAL

This category covers single or laminated materials, rigid or flexible, of various types and thicknesses, certified as to surface-burning characteristics as shown in the individual certifications.

Some sheathing materials are constructed in such a way that internal components may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the sheathing material or by using a factory or field joint (if applicable). Nonthermoplastic materials are supported for the test on 50 mm hexagonal mesh wire with metal rods. In addition, other methods of mounting may be investigated as indicated in the individual certifications. Sheathing materials incorporating a treated kraft paper component may contain treatments consisting of water-soluble salts which may be affected by repeated exposure to water or condensation.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The structural strength, thermal conductivity, vapor resistance, toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

Sheathing Materials Certified for Canada (BVDV7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies,'' or CAN/ULC-S102.2, ''Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SHEATHING MATERIAL
SURFACE BURNING CHARACTERISTICS
+
Issue No.
or
SHEATHING MATERIAL
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Issue No.

+ Flame spread and smoke developed values applicable to the product

****

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Tape, General Use Certified for Canada (BVYS7)

GENERAL

This category covers tape certified as to surface-burning characteristics when applied to uncoated, high-density (nominal 1762 kg/cu m), 0.06-mm-thick inorganic reinforced cement board with flame-spread and smoke-developed values of 0 in longitudinal strips at the specific percentages of exposed area shown in the individual certifications.

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, ''Test for Surface Burning Characteristics of Building Materials and Assemblies.''

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

GENERAL USE TAPE
SURFACE BURNING CHARACTERISTICS
+
Control No.

+ Flame spread and smoke developed values applicable to the product, and information on how the product was applied

****

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Gypsum Board Certified for Canada (BWFR7)

GENERAL

This category covers gypsum board of various thicknesses consisting of cores primarily of gypsum, but with various additives, certified as to surface-burning characteristics as indicated in the individual certifications.

Some gypsum board is provided with facings that may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint, constructed by slitting the facing or by using factory or field joint (if applicable).

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials are installed.

The insulating, acoustical, structural, toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For the fire-resistance rating of these products, see Gypsum Board Certified for Canada (CKNX7).

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Test for Surface Burning Characteristics of Building Materials and Assemblies."

In addition to the surface-burning characteristics, where indicated in the individual certifications, the gypsum board core has also been certified in accordance with CAN/ULC-S114 (2005), "Standard Method of Test for Determination of Non-Combustibility in Building Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

GYPSUM BOARD
SURFACE BURNING CHARACTERISTICS
+
Issue No.

+ Flame spread and smoke developed values applicable to the product

The Classification Mark may also include the statement: **WALLBOARD CORE ALSO CLASSIFIED IN ACCORDANCE WITH CAN/ULC-S114 STANDARD METHOD OF TEST FOR DETERMINATION OF NON-COMBUSTIBILITY IN BUILDING MATERIALS** (or **WALLBOARD CORE ALSO CLASSIFIED IN ACCORDANCE WITH CAN/ULC-S114**).

****

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Wall Coverings Certified for Canada (BWSZ7)

GENERAL

This category covers the surface burning characteristics of wall coverings intended for application to interior surfaces. These materials have been investigated for their surface burning characteristics only and not for their resistance to wear, mildew, or for the toxicity of the products of combustion or other properties.

For those materials intended for field application with an adhesive, the surface burning characteristics are developed by testing the wall covering as applied to uncoated, high density (nominal 1762 kg/cu m), 1/4 in. thick inorganic reinforced cement board that has flame spread and smoke developed values of 0.

The testing of bonded wall coverings may affect the contribution of combustibles under fire conditions. This effect is determined by testing the sample with a longitudinal butt joint constructed by slitting the wall covering or by using a factory or field joint (if applicable).

The Classifications are confined to the materials themselves, when applied with the specified adhesive at the specified application rate, as indicated in the individual Classifications.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface Burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC S102M, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification

Wall Coverings Certified for Canada (BWSZ7)−*Continued*

and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

WALL COVERINGS
SURFACE BURNING CHARACTERISTICS
+
Control No.
or
WALL COVERINGS
SURFACE BURNING CHARACTERISTICS
+
IN ACCORDANCE WITH THE
STANDARD CAN/ULC-S102M
Control No.

+ Flame spread and smoke developed values applicable to the product

****

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Wood Particleboard Certified for Canada (BXGX7)

GENERAL

This category covers wood particleboard formed as a flat panel primarily consisting of various size particles of wood bonded together with a binder by means of controlled production methods.

Unfaced, nondecorative wood particleboard is certified as to surface-burning characteristics as shown in the individual certifications.

If the wood particleboard is treated, the treatment is with water-soluble salts that will be affected by repeated exposure to water or conditions that may result in condensation of water.

The certifications are confined to the materials themselves and do not pertain to the structures in which the material may be installed.

The toxicity of the products of combustion and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

WOOD PARTICLEBOARD
SURFACE BURNING CHARACTERISTICS
+
Control No.

+ Flame spread and smoke developed values applicable to the product

****

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Prefinished Wood Particleboard Certified for Canada (BXNW7)

GENERAL

This category covers wood particleboard with a decorative coating, facing or veneer applied to one or both faces and certified as to surface-burning characteristics. If the wood particleboard is treated, the treatment is with water-soluble salts, which may be affected by repeated exposure to water or conditions that may result in condensation of water.

Some prefinished wood particleboard is provided with a facing that may affect the contribution of combustibles under fire conditions. This effect is

Prefinished Wood Particleboard Certified for Canada (BXNW7)−*Continued*

determined by testing the sample with a longitudinal butt joint, constructed by slitting the facing, or by using a factory or field joint (if applicable).

The certifications are confined to the materials themselves and do not pertain to the structures in which the materials may be installed.

The toxicity of the products of combustion and other properties has not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics Certified for Canada (BIKT7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

UL MARK

The Classification Mark of UL on the cartons of factory-produced blocks, boards, form units, panels and tile is the only method provided by UL to identify these products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

PREFINISHED WOOD PARTICLEBOARD
SURFACE BURNING CHARACTERISTICS
+
Control No.

+ Flame spread and smoke developed values applicable to the product

****

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FIRE-RESISTANCE RATINGS CERTIFIED FOR CANADA (BXRH7)

GENERAL

Fire resistance ratings are included for:

1. Assemblies, such as beams, floors, roofs, columns, walls and partitions. These fire resistance designs provide the detailed construction of the assemblies and the components used.
2. Systems, such as construction joint systems, through-penetration firestop systems, electrical circuit protective systems and duct assemblies. These designs provide the detailed construction of the systems and the components used.
3. Opening protectives, such as dampers, fire doors, glazing and related equipment. Opening protectives are used to protect openings in fire resistance rated assemblies.

These materials are intended for use only in specific assembly or system designs as described in the general Guide Information for each product category and individual Listings, except for opening protectives. Opening protectives have been investigated for use as described in the instructions and markings provided with the opening protectives. The use of the materials and opening protectives in conditions other than described in the instructions, markings and the general Guide Information for the applicable product category has not been investigated by UL.

INVESTIGATION REQUIREMENTS AND STANDARDS

The scope of product sizes and ratings appearing in the general Guide Information for some product categories is intended to indicate the current range of Listed products, however, it is not necessarily indicative of limitations for those Listed products.

The standards used to investigate products are identified in the general Guide Information for each product category. There may not always be a published standard for investigating a product to determine its acceptability for Listing or Classification. If no applicable standard is available, UL will exercise its judgment in the selection of applicable requirements from related standards and other sources to develop the requirements to cover uses and conditions for which specific requirements did not previously exist.

Products, equipment and construction materials certified by UL in accordance with international or regional standards only (e.g., products Classified to an IEC or ISO Standard) are intended for distribution, installation and use in areas of the world where the specified standards have been adopted and are in effect as national or regional standards.

INSTALLATION REQUIREMENTS

The limitations for the equipment as specified in the general Guide Information for each product category such as voltage and temperature limits, markings, special descriptions and installation provisions need to be noted prior to installation and use.

Equipment has been investigated with reference to risks to life and property and for potential conformity to the installation and use provisions of the applicable installation codes and standards developed by the Canadian Commission on Building Codes and Fire Codes (CCBFC), CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable model codes identified in the general Guide Information for each product category.

Some products are certified for uses not within the scope of nationally recognized installation codes and standards. Such products are investigated for the specifications or use conditions indicated in the general Guide Information for each product category.

These products are intended for installation subject to approval by the Authority Having Jurisdiction. Authorities Having Jurisdiction should be consulted before installation.

INSTRUCTIONS AND PRODUCT MARKINGS

These products are intended to be installed in accordance with the installation instructions provided with the product. It is critical that the cautionary statements and installation and operating instructions on the product and in accompanying literature be followed.

FIELD MODIFICATIONS

The UL Mark for Canada applies to the product as it is originally manufactured when shipped from the factory. Authorized use of the UL Mark for Canada is the manufacturer's declaration that the product was originally manufactured in accordance with the applicable requirements. UL does not know what the effect of a modification may have on the safety of the product or the continued validity of the UL certification mark unless the field modifications have been specifically investigated by UL. Unless UL investigates a modified product, UL cannot indicate that the product continues to meet UL's safety requirements.

The only exception for a field modification authorized by UL is when the product has specific replacement markings. For example, a switchboard may have specific grounding kits added in the field. The switchboard is marked with a list of specific kit numbers that have been investigated for use in that particular switchboard. Only grounding kits that are included on the product have been investigated for use in that product.

TECHNICAL SERVICE

Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.

Design Modifications

Careful consideration needs to be given to alterations or modifications of the fire resistance assemblies.

When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.

Contacting UL

UL provides assistance to users of fire resistance assemblies and products, which includes clarification of the published information.

UL also provides a service to investigate modifications to the fire resistance assemblies when requested by the design submitter. Requests for clarification should describe the change and include drawings, if necessary.

Requests for clarifications or investigations can be made by contacting UL at:

- Phone: +1 877-ULHELPS (+1 877-854-3577)
- Fax: +1 847-574-4017
- E-mail: archservices@ul.com
- UL's website: www.ul.com

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FIRE-RESISTANCE RATINGS - CAN/ULC-S101 CERTIFIED FOR CANADA (BXUV7)

This category covers fire-test methods and acceptance criteria in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Con-

struction and Materials." The ratings are expressed in hours and are applicable to floors, roofs, beams, columns and walls.

The specifications for the materials and construction of the fire-resistive assemblies are details that directly relate to the established ratings. The hourly ratings apply only to the entire assembly. Individual components are designated for use in a specific system to achieve specified ratings. The individual components are not assigned ratings and are not intended to be interchanged between systems.

Unless specifically detailed in a design or in the product certification information, the impact of galvanization applied to structural steel members has not been investigated under fire-test conditions. Galvanization may impact the adhesion of spray-applied fire-resistive materials or mastic and intumescent coatings.

When a test assembly complies with the acceptance criteria, a detailed description of the assembly, its performance in the fire test and other pertinent details, such as specifications of materials, Classification coverage and alternate assembly details are included in a report for the test sponsor. Sponsors may provide copies of the complete test report upon request. The report also contains a summary of important features of the rated assembly.

A complete description of each rated fire-resistive assembly can be found in Fire-resistance Ratings – ANSI/UL 263 (BXUV).

CAN/ULC-S101 requires loads applied to test samples to be calculated using the Limit States Design Method specified in the "National Building Code of Canada." The standard also requires fire-resistive assemblies with ratings obtained from samples tested with applied loads less than the maximum calculated value to be identified as "Load Restricted."

Assemblies tested with less than the maximum allowable load that would result from loading calculated using the Limit States Design Method are identified as "Load Restricted." The Percent Load Reduction and corresponding Load Restricted Factor for typical assemblies noted in Table I are based upon loading calculated in accordance with the Working Stress Design Method as compared to loading calculated in accordance with the Limit States Design Method. The calculations were performed for assemblies representing spans and member sizes of typical fire-test assemblies. The loads were calculated assuming a span of 4 m for floors and roofs and 3 m for walls.

The "National Building Code of Canada" requires that buildings and their structural components be designed to have sufficient strength and stability so that the factored resistance (ϕR) is greater than or equal to the effects of factored loads. The values for ϕ and R are specified in the applicable Limit State Design Methods for concrete, masonry, steel and timber.

Some fire-resistive designs are specified with a Load Restricted Factor. When using fire-resistive designs with a Load Restricted Factor, the factored resistance of the structural members or components should be reduced by multiplying the factored resistance by the Load Restricted Factor specified in the individual fire-resistive designs.

The Load Restricted Factor should be applied to the factored resistance of all structural members or components, including, but not limited to, factored moment resistance (M_r), factored shear resistance (V_r), factored tensile resistance (T_r) and factored compressive resistance (C_r).

Table I

Type of Assembly	Percent Load Reduction (LSD-WSD)/LSD	Load Restricted Factor
W8x28 – AISC (W200x42 – CISC) noncomposite steel beam	12	0.88
W8x28 – AISC (W200x42 – CISC) composite steel beam	29	0.71
Floor/Roof supported by open-web steel joists	4	0.96
Floor supported by cold-formed steel channels	0	none
Floor supported by 2 x 10 in. (38 x 235 mm) wood joists	35	0.65
Wall supported by 2 x 4 in. (38 x 89 mm) wood studs	18	0.82
Wall supported by cold-formed steel studs	0	none
Steel columns	0	none

The ratings for floors supported by cold-formed steel channels and walls supported by cold-formed steel studs do not have a Load Restriction Factor because the associated loads in Canada and the U.S. are based on the same standard: CSA S136 (2001), "North American Specification for the Design of Cold-Formed Steel Structural Members," and "North American Specification and Commentary for the Design of Cold-Formed Steel Structural Members" (2007).

The ratings for steel columns do not have a Load Restricted Factor because these ratings are based on temperature limitations. No loading is applied to steel columns during the fire test.

The engineer of record should be consulted whenever fire-resistive assemblies with Load Restricted Factors are selected. The indicated load reductions are based upon factored load effects that are governed by the reduced factored resistance of the structural elements. The selection of structural elements is, at times, based upon service limits, such as deflection and vibration. These factors and others, such as the change in material strength properties as a function of temperature, should be considered when selecting fire-resistive assemblies with Load Restricted ratings.

Unless stated in a design, it is recommended the Load Restricted Factors in Table I be used. Designs detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV) that are also intended for use in Canada include the statement "Load Restricted for Canadian Applications – See Guide BXUV7."

Assemblies developed from tests where the load applied on the sample was based upon calculations in accordance with the Limit States Design Method are identified in Fire-resistance Ratings – ANSI/UL 263 (BXUV).

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ACOUSTICAL MATERIALS CERTIFIED FOR CANADA (BYIT7)

USE

This category covers both mineral fiber and metal-pan ceiling materials investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The fiber material is composed of glass or mineral-wool fiber and binders, formed into tiles and lay-in panels. The perforated metal pans are steel and support mineral-wool pads.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Acoustical Materials Certified for Canada (BIYR7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ACOUSTICAL MATERIAL
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
or
ACOUSTICAL MATERIAL
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.

****

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ADHESIVES CERTIFIED FOR CANADA (BYWR7)

USE

This category covers adhesives investigated for use in fire-resistive designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The methods and rates of application are given in the design illustration and on the container in which the product is furnished.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Adhesives Certified for Canada (BJLZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ADHESIVE
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

or

ADHESIVE
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

*** ***

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AIR TERMINAL UNITS CERTIFIED FOR CANADA (BZGU7)

USE

This category covers air terminal units investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV).

Air terminal units are designed to regulate the flow and distribute conditioned air within a building, and are ceiling mounted at the ends of ducted air systems. The units are designed to be compatible with acoustical ceilings but are independently supported as shown in installation instructions supplied with the units.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

AIR TERMINAL UNIT
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

or

AIR TERMINAL UNIT
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

*** ***

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BATTS AND BLANKETS CERTIFIED FOR CANADA (BZJZ7)

USE

This category covers glass-fiber and mineral-wool batts and blankets investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV).

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Batts and Blankets Certified for Canada (BKNV7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BATTS AND BLANKETS
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.

or

BATTS AND BLANKETS
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.

*** ***

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BUILDING UNITS CERTIFIED FOR CANADA (BZXX7)

USE

This category covers building units investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The building units are composed of proprietary mixes of materials processed into the form of rigid boards, blocks, planks, sheets or slabs, and are formed in various sizes, shapes and thickness.

Unless specified in the individual designs as being suitable for exterior-use applications, building units are intended for interior-use applications only.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Building Units Certified for Canada (BLBT7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BUILDING UNIT
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

BUILDING UNIT
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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CEILING FIRESTOP FLAP ASSEMBLIES CERTIFIED FOR CANADA (CABS7)

USE

This category covers ceiling dampers investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Ceiling firestop flap assemblies are designed to function as a heat barrier in air-handling openings penetrating fire-resistive membrane ceilings.

Ceiling firestop assemblies have been investigated for use in lieu of the protection specified in the floor or roof and ceiling construction designs which contain air ducts and specify hinged-door-type dampers (firestop flap assemblies) over each duct outlet. Ceiling firestop flap assemblies are intended to be installed in accordance with installation instructions provided with the product. The location of the ceiling firestop flap assembly in the duct outlet relative to the ceiling level is specified in the installation instructions; this location must be followed during installation in order to obtain the rated assembly performance.

The individual certifications indicate whether (1) each ceiling firestop flap assembly can be used in all designs conforming to the specifications under the certification, or (2) only for specific design(s) which show the certified company name and ceiling firestop flap assembly type. In the latter case, the individual design numbers are shown in the Certification Mark.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S112.2, "Standard Method of Fire Test of Ceiling Firestop Flap Assemblies," and/or CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CEILING FIRESTOP FLAP ASSEMBLY
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
No.
or

CEILING FIRESTOP FLAP ASSEMBLY
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
No.
*** ***

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CEMENTITIOUS BACKER UNITS CERTIFIED FOR CANADA (CAGP7)

USE

This category covers cementitious backer units investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Cementitious backer units are composed primarily of cement, aggregate and reinforcement and are used as backer boards or underlayment.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CEMENTITIOUS BACKER UNIT
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

CEMENTITIOUS BACKER UNIT
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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CLAY MASONRY UNITS CERTIFIED FOR CANADA (CAGZ7)

USE

This category covers clay masonry units investigated for use in fire-resistance designs as detailed in Fire Resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7). The solid or hollow bricks are made from clay, shale, fire clay, or mixtures thereof, and subjected to firing.

RELATED PRODUCTS

For information on related products, see Fire Resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7).

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL CERTIFICATE

The Certificate of UL is the only method provided by UL to identify clay masonry units covered under its Classification and Follow-Up Service Program.

The Certificate serves as evidence that the Classified company (1) is a subscriber to the service for clay masonry units, (2) is authorized to issue the certificate as its representation that the units are in accordance with requirements established by UL, and (3) is subject to UL's Follow-Up Service on representative samples selected at the factory and in the field.

*** ***

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FIRE-RESISTANCE-RATED GLAZING MATERIALS CERTIFIED FOR CANADA (CCET7)

USE

This category covers fire-resistance-rated glazing materials investigated for use in specified fire-resistive wall or partition constructions with respect to (1) wall construction details, (2) maximum size of individual glazing panels, and (3) the maximum aggregate area of glazing panels per 645 sq cm (100 sq ft) of wall area as described in the individual design illustrations. The glazing material provides the insulation properties for compliance with the temperature rise requirement of the Standard Test Method.

Details of the wall-opening framing for the fire-resistance-rated glazing material and installation of the glazing material within the framed openings are described in the individual design illustrations.

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FIRE-RESISTANCE-RATED GLAZING MATERIAL
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
FIRE-RESISTANCE-RATED GLAZING MATERIAL
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

FLOOR- AND ROOF-TOPPING MIXTURES CERTIFIED FOR CANADA (CCOX7)

USE

This category covers floor- and roof-topping mixtures investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). These proprietary materials are factory blended and require the addition of water and other materials to be mixed at the job site in accordance with application instructions shown on the bags. The materials are mixed, placed and troweled similar to concrete topping and are used as a nonstructural floor filling and leveling medium. The mixtures are intended for use on floors or on roofs, but not necessarily on both, as indicated in the individual certifications.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME+]
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SE UL FIRE RESISTANCE DIRECTORY
Control No.

or
[PRODUCT NAME+]
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
+ **FLOOR-TOPPING MIXTURE** or **ROOF-TOPPING MIXTURE**
*** ***

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FLOOR MAT MATERIALS CERTIFIED FOR CANADA (CCQU7)

USE

This category covers floor mat materials investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). These mat materials are an underlayment for floor-topping mixtures and are intended for use with the mixtures identified on the product packaging.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Floor- and Roof-topping Mixtures Certified for Canada (CCOX7), Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FLOOR MAT MATERIAL
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
FLOOR MAT MATERIAL
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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FOAMED PLASTIC CERTIFIED FOR CANADA (CCVW7)

USE

This category covers foamed plastic investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The foamed plastic is in the form of rigid boards, formed units or ingredients for use in forming foamed plastic in the field intended for use in roof-ceiling or wall and partition designs.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Foamed Plastic Certified for Canada (BRYX7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product or carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FOAMED PLASTIC
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

FOAMED PLASTIC
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

*** ***

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LUMINAIRES, LUMINAIRE ASSEMBLIES AND LUMINAIRE ENCLOSURES CERTIFIED FOR FIRE RESISTANCE CERTIFIED FOR CANADA (CDHW7)

USE

This category covers luminaires, luminaire assemblies and luminaire enclosures investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The luminaires, assemblies and enclosures (in conjunction with a luminaire) are intended for recessed installation in ceilings in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." They have been shown to provide a degree of fire resistance with the floor or roof assemblies with which they have been tested.

The luminaires and luminaire assemblies have been investigated and found to comply with applicable electrical requirements and are so labeled.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Constructions and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*] CLASSIFIED FOR FIRE RESISTANCE
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
or

[PRODUCT IDENTITY*] CLASSIFIED FOR FIRE RESISTANCE
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.

* **LUMINAIRE**, **LUMINAIRE ASSEMBLY** or **LUMINAIRE ENCLOSURE**

*** ***

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MASTIC AND INTUMESCENT COATINGS CERTIFIED FOR CANADA (CDWZ7)

GENERAL

This category covers mastic and intumescent coatings investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The coatings are mixed at the factory and are applied directly to building structures by means of pumping equipment specifically designed for that purpose or by hand with a paint brush, roller or towel.

The influence of various environments on the fire-resistive properties of the coatings has been investigated. These tests were conducted to evaluate the influence of the environments on the intumescent properties of the coating.

The simulated environmental tests conducted on mastic coatings intended for interior use are aging, high humidity, carbon dioxide and sulfur dioxide air mixture, chlorine and washing.

The environments included in investigation of coatings intended for exterior use are aging, high humidity, ultraviolet light, salt spray, carbon dioxide and sulfur dioxide air mixture, and wet-freeze-dry cycling.

To investigate the influences of environments, the coating material is applied to either steel plates or structural steel shapes and a selected number of samples are subjected to the environments. After the environmental exposures, samples are subjected to the fire exposure defined in CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials." The ability of the coating to retain its fire-resistive properties is determined on the basis of a comparative analysis of the fire test data obtained from fire tests on samples that were exposed and fire tests on samples that were not exposed to the simulated environments.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Coating Materials Certified for Canada (BMCZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory) and the following additional information:

MASTIC AND INTUMESCENT COATING
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

MASTIC AND INTUMESCENT COATING
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

*** ***

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MINERAL AND FIBER BOARDS CERTIFIED FOR CANADA (CERZ7)

USE

This category covers mineral and fiber boards investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL

263 (BXUV). These boards consist of proprietary mixes of organic and/or inorganic fibers and binders formed into various sizes and thickness. The uses of the boards include forms for gypsum concrete, luminaire protection boxes, roof insulation, membrane ceiling materials, and beam and column protection.

Unless specified in the individual designs and certifications as being suitable for exterior-use application, mineral and fiber boards are intended for interior-use application only.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Mineral and Fiber Boards Certified for Canada (BQXR7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product or carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MINERAL AND FIBER BOARD
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
MINERAL AND FIBER BOARD
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
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MOLDED PLASTIC CERTIFIED FOR CANADA (CEVT7)

USE

This category covers molded plastic investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The molded plastic in the form of sheets, panels or formed units is intended for use in wall and partition designs.

The weatherability, washability, color stability, toxicity of the products of combustion and related properties have not been investigated.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product or carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MOLDED PLASTIC
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

MOLDED PLASTIC
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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NONMETALLIC PLUMBING SYSTEM COMPONENTS CERTIFIED FOR FIRE RESISTANCE CERTIFIED FOR CANADA (CEYD7)

USE AND INSTALLATION

This category covers nonmetallic tubing investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Certified products are intended to be used and installed in accordance with model codes, such as the "National Plumbing Code of Canada," and the "National Building Code of Canada."

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

NONMETALLIC PLUMBING SYSTEM COMPONENT
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
NONMETALLIC PLUMBING SYSTEM COMPONENT
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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OUTLET BOXES AND FITTINGS CERTIFIED FOR FIRE RESISTANCE CERTIFIED FOR CANADA (CEYY7)

GENERAL

This category covers special-purpose boxes for installation in floors and nonmetallic outlet boxes for installation in floors, walls and partitions, and/or ceilings in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). They have shown a degree of fire resistance when installed in the particular floor(s), wall(s) and/or ceiling(s) described for each certified company. Boxes of the type covered in the Products Certified for Canada Directory have been investigated and found to comply with established electrical requirements and are so certified.

FLOOR BOXES

Boxes for use with floors have been investigated for use with electrical receptacles fabricated of melamine, phenolic or urea materials, unless specified otherwise in the installation instructions and certification information. Floor boxes and fittings are intended to be installed in accordance with installation instructions provided with the product.

OUTLET BOXES AND FITTINGS CERTIFIED FOR FIRE RESISTANCE CERTIFIED FOR CANADA (CEYY7)

Boxes with integral connectors for electric metallic tubing or for unthreaded rigid metallic conduit are provided with a marking on the carton to indicate the specific type or types of wiring system for which the box has been tested.

Floor boxes designated for floor installation as covered in the CEC are provided with covers and gaskets to exclude surface water and sweeping compounds that might be present in floor cleaning operations. Those boxes intended for installation in concrete floors are frequently provided with leveling screws, threaded hubs, or both and are provided with a marking on the carton to identify boxes of this type, such as "Floor Box" or "Floor Box, Concrete Type," as appropriate.

WALL AND PARTITION AND CEILING BOXES

Nonmetallic outlet boxes evaluated for installation in fire-resistive assemblies are provided with the appropriate Certification Mark for electrical products and other markings as described in the general information section of Nonmetallic Outlet Boxes Certified for Canada (QCMZ7).

Nonmetallic outlet boxes certified for use in fire-resistive designs may have the following marking in the base of the box:

Class * hr, F, W and/or C

where * indicates hourly rating such as 1 hr or 2 hr and F = Floor, W = Wall and C = Ceiling.

They are certified for use in certain fire-resistive designs as detailed in Volume 1 of the UL Fire-resistance Directory when installed in accordance with the details described for each certified company. Any certified metallic or nonmetallic cover is suitable for use with these nonmetallic boxes.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings Certified for Canada (BXUV7).

Outlet boxes that comply with established electrical requirements are covered under Metallic Outlet Boxes Certified for Canada (QCIT7) and Nonmetallic Outlet Boxes Certified for Canada (QCMZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product or on each UL Classified steel floor and form unit with factory-installed floor boxes, or the UL symbol on the product and the Classification Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

OUTLET BOXES AND FITTINGS
CLASSIFIED FOR FIRE RESISTANCE
FIRE RESISTANCE CLASSIFICATION
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA AND UL FIRE RESISTANCE DIRECTORY
*** ***

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ROOFING MEMBRANES CERTIFIED FOR CANADA (CHCI7)

USE

This category covers roofing membranes investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The single-ply roofing membranes (such as EPDM, PVC, CSPE, modified bitumen, etc.) are intended for use as the roof covering in roof-ceiling designs. The membranes have been investigated for use in specified designs when installed in accordance with the details described for each certified company.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on external fire exposure, see Roofing Systems Certified for Canada (TGFU7). The membranes covered under TGFU7 for each certified company are the only membranes eligible to bear the Fire Resistance Classification. For method of attachment, refer to the manufacturers' certifications under Roofing Systems (TGFU).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the packaging is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ROOFING MEMBRANE
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

ROOFING MEMBRANE
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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SHEATHING MATERIALS CERTIFIED FOR CANADA (CHIZ7)

USE

This category covers sheathing materials investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Sheathing materials are thin, flexible sheets used as vapor retarders between the roof deck and roof insulation or between concrete floor topping and wood subflooring.

The structural strength, thermal conductivity and vapor resistance of these materials have not been investigated.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the package or roll is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SHEATHING MATERIAL
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
or

SHEATHING MATERIAL
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
*** ***

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SPEAKER ASSEMBLIES FOR FIRE RESISTANCE CERTIFIED FOR CANADA (CHML7)

USE AND INSTALLATION

This category covers speaker assemblies investigated for use in ceilings of fire-resistive floor-ceiling and roof-ceiling assemblies in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). They have been shown to provide a degree of fire resistance when installed in the specific designs described for each certified company.

The speaker assemblies have been investigated for use in specific ceilings with respect to: (1) maximum size of the individual speaker assemblies, (2) minimum spacing between individual speakers, and (3) maximum aggregate area of the speaker assemblies per 100 sq ft of ceiling area.

Speaker assemblies are intended to be installed in accordance with the installation instructions supplied with the product and as described in the individual fire-resistive designs.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

These speaker assemblies are provided with an outer enclosure. The insulation material that surrounds the enclosure that is exposed to the airflow in a return air-plenum space has also been investigated to CAN/ULC-S102, "Method of Test for Surface Burning Characteristics of Building Materials." These materials have a flame-spread value of 25 or less and a smoke-developed value of 50 or less.

UL MARK

The Classification Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SPEAKER ASSEMBLY
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
SPEAKER ASSEMBLY
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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SPRAY-APPLIED FIRE-RESISTIVE MATERIALS CERTIFIED FOR CANADA (CHPX7)

GENERAL

This category covers spray-applied fire-resistive materials (SFRM) investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV).

SFRMs include two general types of products previously certified as cementitious mixtures and sprayed fiber materials. In BXUV, the cementitious mixtures are grouped in the 700 series designs, and the sprayed fiber materials are grouped in the 800 series designs. The 600 series and the 900 series designs are used to identify those assemblies that include both the cementitious mixtures and the sprayed fiber type products in an assembly.

Cementitious mixtures typically consist of one or more binders, aggregates and fibers that are mixed with water to form a slurry and conveyed through a hose to a nozzle where compressed air is typically used to disperse the material into a spray pattern. The sprayed fiber materials typically consist of one or more binders, fibers and aggregates that are conveyed by low-pressure air through a hose to a nozzle where the material is mixed with atomized water and sprayed. The mixture and application instructions are printed on each bag of SFRMs.

Surfaces on which the SFRMs are applied should be free of dirt, oil and loose scale. The minimum thickness and density information specified in the design text must be followed to obtain the specified rating. The test method used to investigate the SFRM is specified in the design text.

Regulations governing the application and use of SFRMs have been promulgated by various governmental agencies. Authorities Having Jurisdiction should be consulted to determine local requirements.

Unless specified in the design text as being suitable for exterior-use application, SFRMs investigated to CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials," are intended for interior-use application only.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SPRAY-APPLIED FIRE RESISTIVE MATERIAL
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
or
SPRAY-APPLIED FIRE RESISTIVE MATERIAL
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
*** ***

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STEEL FLOOR AND FORM UNITS CERTIFIED FOR CANADA (CHWX7)

USE

This category covers steel floor and form units investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Steel floor and form units provide a permanent form for concrete topping in floor-ceiling assemblies. They are designed to carry floor loads of a building independently of, or compositely with, the concrete topping depending on the design feature of a particular unit. See individual floor-ceiling or roof-ceiling designs for certification of steel floor and form units.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For use as raceways, see Cellular Floor Raceways Certified for Canada (RHZX7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 79, "Cellular Metal and Cellular Concrete Floor Raceways and Fittings," and CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Constructions and Materials."

UL MARK

The Classification Mark of UL on the product, bundle, or package of material is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

STEEL FLOOR AND FORM UNIT
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

STEEL FLOOR AND FORM UNIT
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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FRAMING MEMBERS CERTIFIED FOR CANADA (CIKV7)

USE

This category covers framing members that include suspension systems for ceiling membrane materials, and other direct or indirect supporting members for surfacing materials in walls or partitions and columns.

Framing members may be manufactured in metric sizes to accommodate metric-sized panels. Metric-sized framing members are intended to be used only with metric-sized materials or metric-sized gypsum wallboard. Manufacturers of metric-sized framing members intended for support of metric-sized acoustical materials or gypsum wallboard are indicated in the individual certifications.

Typical inch-pound-sized modules and equivalent metric-sized modules are:

Panel Dimensions Nominal Size (in.)	Panel Dimensions Nominal Size (mm)
12 x 12	300 x 300
12 x 24	300 x 600
24 x 24	600 x 600
24 x 36	600 x 900
24 x 48	600 x 1200
24 x 60	600 x 1500
20 x 60	500 x 1500
30 x 60	750 x 1500

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

UL MARK

The Classification Mark of UL on the carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FRAMING MEMBERS
FIRE RESISTANCE CLASSIFICATION
DESIGNS NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

FRAMING MEMBERS
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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STRUCTURAL CEMENT-FIBER UNITS CERTIFIED FOR CANADA (CIYT7)

USE

This category covers structural cement-fiber units investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). These units consist of proprietary mixes of processed cement-fiber and a cementitious binder formed into flat or stemmed slabs or boards of various sizes, shapes and thickness. The products may, after exposed to the standard fire test, continue to smolder and glow.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Method of Fire Endurance Tests of Building Construction and Materials.''

UL MARK

Two methods of labeling are provided for this material: (1) Each piece will bear the Classification Mark, or (2) a Certificate is issued. A Certificate is prepared by the manufacturer for each construction site to be supplied. The use of the Certificate is optional when each piece bears the Classification Mark but in all cases it is restricted to material shipped directly from a factory to a construction site.

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

STRUCTURAL CEMENT-FIBER UNIT
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or

STRUCTURAL CEMENT-FIBER UNIT
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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STRUCTURAL STEEL MEMBERS CERTIFIED FOR CANADA (CJFS7)

USE

This category covers structural steel members investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Structural steel members consist of various sizes of sheet steel or open-web composite steel load-bearing members designed to carry the floor or wall loads of a building. The floor-load-carrying members provide reinforcement for the structural concrete floor and a support for the suspended-ceiling systems.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Method of Fire Endurance Tests of Building Construction and Materials.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

STRUCTURAL STEEL MEMBER
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
STRUCTURAL STEEL MEMBER
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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STRUCTURAL WOOD MEMBERS CERTIFIED FOR CANADA (CJIX7)

USE

This category covers structural wood members investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Structural wood members consist of various sizes of joists or studs fabricated partially or completely from wood products and are designed to carry the floor or wall loads of a building. The floor-load-carrying members provide support for the suspended-ceiling systems. See the individual floor-ceiling, roof-ceiling or wall designs for construction details on the certification of structural wood members.

The properties of the members other than those related to fire resistance have not been investigated.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

STRUCTURAL WOOD MEMBER
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
STRUCTURAL WOOD MEMBER
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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UNITS, PARTITION PANEL CERTIFIED FOR CANADA (CJMR7)

USE

This category covers partition panel units investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The units are metal panels containing factory- or field-applied insulation, insulating concrete or gypsum as its core material.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

PARTITION PANEL UNIT
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). _____
SEE UL FIRE RESISTANCE DIRECTORY
No.
or
PARTITION PANEL UNIT
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
No.
*** ***

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VERMICULITE AGGREGATE CERTIFIED FOR CANADA (CJZZ7)

USE

This category covers vermiculite aggregate investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Vermiculite aggregate is a laminated micaceous mineral produced by expanding the ore at elevated temperatures, forming a lightweight, laminated, flaky structure predominately gold in color. Upon the addition of water, this aggregate, when proportioned and mixed with the material or materials as specified in the individual designs, forms a plastic mass for use in building structures.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

VERMICULITE AGGREGATE
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
VERMICULITE AGGREGATE
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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GYPSUM BOARD CERTIFIED FOR CANADA (CKNX7)

GENERAL

This category covers gypsum board investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV).

Gypsum board is primarily gypsum reinforced with mineral fibers, bound on each side by paper or similar exterior finish. It can be applied to steel or wood joists to form interior ceilings, and to steel or wood studs to form interior walls.

Gypsum board may also be used as a base for the application of plaster coatings, as underlayment for roof insulations, and as a form for gypsum concrete when proper facings are used.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

For information on surface-burning characteristics, see Gypsum Board Certified for Canada (BWFR7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

GYPSUM BOARD
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
or
GYPSUM BOARD
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.

*** ***

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WALL AND PARTITION FACINGS AND ACCESSORIES CERTIFIED FOR CANADA (CLBV7)

GENERAL

This category covers wall and partition facings and accessories consisting of metal facing units, accessory clips, coatings and fasteners.

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the units is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CLASSIFIED
WALL AND PARTITION FACINGS AND ACCESSORIES
FIRE RESISTANCE CLASSIFICATION
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA AND UL FIRE RESISTANCE DIRECTORY
Control No.

*** ***

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WALL-OPENING PROTECTIVE MATERIALS CERTIFIED FOR CANADA (CLIV7)

USE

This category covers wall-opening protective materials investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The protective materials are proprietary compositions used to maintain the hourly ratings of fire-resistive walls and partitions containing flush-mounted devices, such as outlet boxes, electrical cabinets and mechanical cabinets.

The Metallic Electrical Outlet Boxes section under **WALL AND PARTITION ASSEMBLIES** in BXUV specifies the conditions under which certified metallic outlet and switch boxes may be installed within fire-resistance-rated wall assemblies constructed with bearing and nonbearing wood or steel studs and gypsum board facings. In addition, Outlet Boxes and Fittings Certified for Fire Resistance Certified for Canada (CEYY7) includes certifications for nonmetallic outlet boxes along with the conditions under which such outlet and switch boxes may be installed within fire-resistive wall assemblies. With either type of outlet or switch box, it may be possible to install the boxes under less stringent conditions when such boxes are used in conjunction with wall-opening protective materials. The use of wall-opening protective materials may allow for (1) reducing the spacing between boxes contained on opposite sides of the wall, (2) increasing the size of the boxes, (3) increasing the density of boxes installed, and/or (4) allowing the use of boxes on each side of staggered stud walls. The individual certifications indicate the specific applications and the method of installation for which the materials have been investigated. Unless otherwise specified in the individual certifications, all conduit connectors used in conjunction with metallic outlet boxes are intended to be steel.

Electrical devices are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

WALL-OPENING PROTECTIVE MATERIAL
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
WALL-OPENING PROTECTIVE MATERIAL
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

*** ***

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WOOD SASH MEMBERS CERTIFIED FOR CANADA (CLJJ7)

USE

This category covers wood sash members investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). Wood sash members include wood or wood composite materials used to form the stiles and rails of window frames for fire-resistive glazing.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, ''Standard Methods of Fire Endurance Tests of Building Construction and Materials.''

UL MARK

The Classification Mark of UL on the carton is the only method provided by UL to identify these products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

WOOD SASH MEMBER
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ___
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
or
WOOD SASH MEMBER
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

****

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BUSWAYS, METAL ENCLOSED, OVER 751 VOLTS CERTIFIED FOR CANADA (CVZW7)

USE

This category covers metal-enclosed busways of the nonsegregated phase type, for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' A nonsegregated phase busway is one in which all phase conductors are in a common metal enclosure without barriers between the phases.

Busways are intended to be installed with supports at intervals of 1.5 m or less unless marked as suitable for greater support intervals.

Busways are intended for installation in a horizontal position unless marked as suitable for vertical installation.

PRODUCT TYPE

These are assemblies of metal-enclosed rigid bus or cable type conductors together with associated interconnections, such as elbows, tees, wall flanges, and the like. Busways covered under this category use air as part of the insulation system. Busways with insulation systems comprised of gas (other than air), solid or liquid insulation systems are not covered under this category.

RATINGS

These assemblies are intended for use on systems with nominal rated voltages from 751 V to 46 kV ac.

ENCLOSURES

These assemblies are intended for either indoor or outdoor applications. A nonventilated assembly investigated for outdoor use is marked ''Enclosure 3.'' A ventilated assembly investigated for outdoor use is marked ''For Outdoor Use.''

Enclosures are of the ventilated or nonventilated type. A ventilated enclosure is provided with means to permit circulation of sufficient air to remove excess heat.

A nonventilated enclosure is constructed to provide no intentional circulation of external air through the enclosure.

PRODUCT MARKINGS

These products are permanently marked with the following electrical ratings: maximum volts and amperes, number of poles or phases, insulation (BIL) level, and frequency. When shipped in sections, each section includes all the required markings

Busways with neutral conductors smaller than the phase conductors are also marked with the current rating of the neutral conductor.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 201, ''Metal-Enclosed High Voltage Busways.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Metal-enclosed Busway.''

****

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BUSWAYS AND ASSOCIATED FITTINGS CERTIFIED FOR CANADA (CWFT7)

GENERAL

This category covers busways and associated fittings, rated 600 V or less, 6000 A or less. Busways are grounded metal enclosures containing factory-mounted bare or insulated conductors, which are usually copper or aluminum bars, rods or tubes. These enclosures and, in some cases an additional ground bus, are intended for use as equipment grounding conductors.

Some busways are not intended for use ahead of service equipment and are marked with the maximum rating of overcurrent protection to be used on the supply side of the busway.

Busways may be of one of the following designs:

Lighting Busway — Busway intended to supply and support industrial and commercial luminaires. Lighting busway is limited to a maximum current rating of 50 A.

Trolley Busway — Busway having provision for continuous contact with a trolley by means of a slot in the enclosure. Trolley busway may be additionally marked ''Lighting Busway'' if intended to supply and support industrial and commercial luminaires.

Continuous Plug-in Busway — Busway provided with provision for the insertion of plug-in devices at any point along the length of the busway. Continuous plug-in busway is intended for general use and may be installed within reach of persons. Busways of this design are limited to a maximum current rating of 225 A.

Short-run Busway — Unventilated busway intended for a maximum run of 9.4 m horizontally, 3.05 m vertically and are primarily used to supply switchboards. Except for transformer stubs, short-run busway is not intended to have intermediate taps.

USE AND INSTALLATION

Busways investigated to determine their suitability for

- installation in a specified position,
- for use in a vertical run, or for support at intervals greater than 1.5 m,
- for outdoor use

are so marked. This marking is on or contiguous with the name plate incorporating the manufacturer's name and electrical rating.

A busway or fitting containing a vapor seal is so marked, but unless marked otherwise, the busway or fitting has not been investigated for passage through a fire-rated wall.

Busway marked ''Lighting Busway'' and protected by overcurrent devices rated in excess of 20 A is intended for use only with luminaires employing heavy-duty lampholders unless additional overcurrent protection is provided for the luminaire in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

Trolley busway should be installed out of the reach of persons or be otherwise installed to prevent accidental contact with exposed conductors.

Some busways have a number of short stubs and are marked for use with certain compatible equipment.

Busways and fittings covered under this category are intended for use with copper conductors unless marked to indicate which terminals are

suitable for use with aluminum conductors. Such marking is independent of any marking on the terminal connectors and is on a wiring diagram or other readily visible location.

Unless the equipment is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14 – 1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in Tables 2 and 4 of the CEC. Termination provisions are determined based on values provided in these tables with no adjustment made for correction factors.

Some fittings are suitable for use as service equipment and are so marked.

PLUG-IN BUSWAY FITTINGS INTENDED FOR USE ON OTHER MANUFACTURERS' BUSWAYS

Busway fittings of the plug-in design may be suitable for use on other manufacturers' continuous plug-in or lighting busways. Busway fittings investigated for use on other manufacturers' busways are limited to fittings incorporating luminaires. Fittings are marked to indicate with which busway they are intended to be used. Fittings intended for this application are limited to short-circuit current ratings of 10 kA, 600 V or less.

RATINGS

Busways and associated fittings marked ''Short Circuit Current Rating(s) Maximum RMS Symmetrical Amps ___ Volts ___'' have been investigated for the rating indicated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 27 (2000), ''Busways.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Busway,'' ''Short-Run Busway'' or ''Busway Plug,'' or other appropriate product name.

* *

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CABINETS AND CUTOUT BOXES CERTIFIED FOR CANADA (CYIV7)

GENERAL

This category covers sheet-metal boxes and nonmetallic boxes. Cutout boxes are provided with a door secured by hinges and one or more fasteners and are intended for surface mounting. A cabinet consists of two parts: a cabinet box and a mating cabinet front that contains a door. A cabinet may be flush mounted or surface mounted. These boxes are intended for installation in accordance with Section 12 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ENVIRONMENTAL RATINGS AND CONDITIONS

Each cabinet and cutout box is marked with one or more of the following Enclosure Type ratings for which it was investigated: Type 1, 2, 3, 3R, 3S, 4, 4X, 5, 6, 6P, 12, 12K or 13. The intended uses for each Enclosure Type are as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Cabinets and cutout boxes marked as Type 2 or 3R enclosures may be marked to indicate the intended mounting orientation, or the location where electrical parts are intended to be installed, or both, where necessary to maintain the designated environmental rating.

Cabinets and cutout boxes marked as Type 3, 3S, 4, 4X, 6, 6P, 12, 12K or 13 have integral mounting means external to the enclosure cavity or may have openings into the enclosure cavity for attachment of separate mounting means supplied with the enclosure or available as a kit referenced from enclosure markings.

ELECTRICAL EQUIPMENT

Some cabinets and cutout boxes are intended for the installation of specific kinds of equipment; however, this category does not cover any electrical material or fittings contained in the box.

RELATED PRODUCTS

Boxes provided with a cover secured by fasteners other than hinges are covered under Boxes, Junction and Pull Certified for Canada (BGUZ7).

Enclosures intended for use with industrial control panels are covered under Industrial Control Panels Certified for Canada (NITW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 94, ''Special Purpose Enclosures.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Cabinet Front,'' ''Electric Cabinet Box'' or ''Cutout Box.''

The product name ''Electric Cabinet Front'' is for the front trim or matt used on the flush- or surface-mounted cabinet box. The product name ''Electric Cabinet Box'' is for the box only.

The product name ''Cutout Box'' is for the surface-mounted box provided with a door.

* *

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CABLE ASSEMBLIES AND FITTINGS FOR INDUSTRIAL CONTROL AND SIGNAL DISTRIBUTION CERTIFIED FOR CANADA (CYJV7)

USE

This category covers the interconnecting cable assemblies and panel-mounted fittings used with industrial control equipment and proximity switches. These assemblies are intended to be used in an industrial environment to distribute the control signals and power to the remote proximity switches or other control circuit devices. The cable assemblies and mating fittings are not intended to be used as a substitute for the fixed wiring of a building structure. These devices are intended for use only with the Listee's same line of products covered under this category.

Cable assemblies and fittings are rated in volts and amperes. The devices are marked with such rating on the device or smallest unit shipping container. The products covered under this category have not been investigated for interruption of current.

Cable Assemblies — Cable assemblies consist of a length of flexible cord with a molded-on or assembled-on male or female connector on at least one end of the cable. Cable assemblies with only one end terminated are intended for direct connection to a proximity switch, control panel, or similar device.

Assembled-on Cord Connectors and Attachment Plugs — Fittings intended to be installed onto flexible cord may have a male or female insert configuration. The diameter and the wire size of the flexible cord to which the fitting is intended to be assembled is indicated on the fitting or the smallest unit shipping container.

Panel-mounted Fittings — These fittings consist of a panel-mounted assembly with either a male or female insert. Each assembly is provided with a means to secure to a panel. These fittings may be provided with leads intended for direct wiring connection to a control panel, proximity switch, or other similar device.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 182.3, ''Special Use Attachment Plugs, Receptacles and Connectors.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit shipping container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Cable Assembly for Industrial Control and Signal Distribution,'' ''Cable Assembly Fitting for Industrial Control and Signal Distribution,'' ''CYJV7 Cable Assembly'' or ''CYJV7 Cable Assembly Fitting.''

The cable assemblies that have terminations on one end only may be bulk labeled with the Listing Mark provided on the smallest unit shipping container. All other Listing Marks are applied to each individual device.

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CABLE ASSEMBLIES FOR INDUSTRIAL CONTROL AND SIGNAL DISTRIBUTION FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (CYJX7)

USE

This category covers cable assemblies, cable plugs and sockets, panel-mounted plugs and sockets, and plugs and sockets used for interconnection

between one piece of electrical equipment and another piece of electrical equipment (by means of a cable or cord assembly involving plugs and sockets on both ends, or a plug and socket on one end and unterminated cable or cord on the other), or

between premises wiring and a piece of electrical equipment (by means of a cable or cord assembly involving a socket on the equipment end and unterminated cable or cord on the premises wiring end).

This interconnection is in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). These assemblies are intended to be used in locations that are classified as Class I, Division 2 to distribute the control signals to remote proximity switches or other control-circuit devices.

Each cable assembly is provided with means to mechanically secure the plug or socket on either end of the cable assembly to the intended equipment plug or socket so as to protect against unintentional separation. The means used to provide this mechanical securement is constructed as follows:

1. separation shall be possible only with the aid of a tool,
2. when not secured, the means shall be captive to the cable assembly, and
3. a marking is provided that is likely to be readily visible after installation that reads, "WARNING – Do Not Connect or Disconnect When Energized," or equivalent.

Note: The warning marking may be on the securement means or on the cable assembly. It may be necessary to provide more than one warning marking for ready visibility.

Instructions are provided indicating that, should the cable assembly become separated from the intended equipment plug or socket, the part that remains energized is a socket outlet.

This category does not cover cable assemblies with plugs on both ends.

Product Types

The following products are covered under this category:

Cable Assemblies — Cable assemblies consist of a length of cord or cable as follows:

1. extra-hard-usage cord,
2. instrumentation tray cable (Type ITC) for applications involving instrumentation and control circuits, or
3. power-limited tray cable (Type PLTC) for applications involving remote-control, signaling, and power-limited circuits.

Note: See the following Code references for additional details on these wiring methods:

For extra-hard-usage cord, see Section 4 of the CEC or Article 400 of ANSI/NFPA 70, "National Electrical Code" (NEC).

For instrumentation tray cable (Type ITC), see Article 727 of the NEC.

For power-limited tray cable (Type PLTC), see Article 725 of the NEC.

The cord or cable is terminated on at least one end with a molded-on or assembled-on plug or socket. Cable assemblies with only one end terminated are intended for direct connection to a proximity switch, control panel, or similar device.

Cable Plugs and Sockets — Plugs and sockets intended to be field wired or molded onto cord or cable as indicated under **Cable Assemblies** above may have a male or female insert configuration. The diameter and the wire size of the field-wired cord or cable to which the plug or socket is intended to be assembled is indicated on the plug or socket or the smallest unit shipping container.

Panel-mounted Plugs and Sockets — These plugs and sockets consist of a panel-mounted assembly with either a plug or socket. Each assembly is provided with a means to secure to a panel. These plugs and sockets may be provided with leads intended for direct wiring connection to a control panel, proximity switch, or other similar device.

RATINGS

These cable assemblies are rated based on the involved cord or cable as follows:

1. extra-hard-usage cord for applications involving circuits operating at 600 V or less and 60 A or less,
2. instrumentation tray cable (Type ITC) for applications involving instrumentation and control circuits operating at 150 V or less and 5 A or less, or
3. power-limited tray cable (Type PLTC) for applications involving remote-control, signaling, and power-limited circuits supplied by a Class 2 or Class 3 power source.

Cable assemblies and plugs and sockets are rated in volts and amperes. The devices are marked with such rating on the device or smallest unit shipping container.

SPECIAL CONSIDERATIONS

The cable assemblies and mating plugs and sockets are not intended to be used as a substitute for the fixed wiring methods required by J18-156 of the CEC.

These cable assemblies and mating plugs and sockets are intended for use only with the Listee's same line of cable assemblies and mating plugs and sockets covered under this category.

The products covered under this category are not intended for interruption of current and are so marked.

These devices are intended for indoor use only, unless otherwise so identified.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 182.3 (1987), "Special Use Attachment Plugs, Receptacles and Connectors."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cable Assembly for Industrial Control and Signal Distribution for Use in Hazardous Locations," "Cable Assembly Plug for Industrial Control and Signal Distribution for Use in Hazardous Locations," "Cable Assembly Socket for Industrial Control and Signal Distribution for Use in Hazardous Locations," "CYJX7 Cable Assembly for Use in Hazardous Locations," "CYJX7 Cable Assembly Plug for Use in Hazardous Locations" or "CYJX7 Cable Assembly Socket for Use in Hazardous Locations." The words "Hazardous Locations" may be abbreviated "Haz. Loc."

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CABLE ASSEMBLIES FOR INDUSTRIAL CONTROL AND SIGNAL DISTRIBUTION FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (CYJZ7)

USE

This category covers cable assemblies, cable plugs and sockets, panel-mounted plugs and sockets, and plugs and sockets used for interconnection

between one piece of electrical equipment and another piece of electrical equipment (by means of a cable or cord assembly involving plugs and sockets on both ends, or a plug and socket on one end and unterminated cable or cord on the other), or

between premises wiring and a piece of electrical equipment (by means of a cable or cord assembly involving a socket on the equipment end and unterminated cable or cord on the premises wiring end).

This interconnection is in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." These assemblies are intended to be used in loca-

tions that are classified as Class I, Zone 2 to distribute the control signals to remote proximity switches or other control-circuit devices.

Each cable assembly is provided with means to mechanically secure the plug or socket on either end of the cable assembly to the intended equipment plug or socket so as to protect against unintentional separation. The means used to provide this mechanical securement is constructed as follows:

1. separation shall be possible only with the aid of a tool,
2. when not secured, the means shall be captive to the cable assembly, and
3. a marking is provided that is likely to be readily visible after installation that reads, "WARNING – Do Not Connect or Disconnect When Energized," or equivalent.

   Note: The warning marking may be on the securement means or on the cable assembly. It may be necessary to provide more than one warning marking for ready visibility.

Instructions are provided indicating that, should the cable assembly become separated from the intended equipment plug or socket, the part that remains energized is a socket outlet.

This category does not cover cable assemblies with plugs on both ends.

Product Types

The following products are covered under this category:

Cable Assemblies — Cable assemblies consist of a length of cord or cable as follows:

1. extra-hard-usage cord,
2. instrumentation tray cable (Type ITC) for applications involving instrumentation and control circuits, or
3. power-limited tray cable (Type PLTC) for applications involving remote-control, signaling, and power-limited circuits.

   Note: See the following Code references for additional details on these wiring methods:

   For extra-hard-usage cord, see Section 4 of the CEC or Article 400 of ANSI/NFPA 70, "National Electrical Code" (NEC).

   For instrumentation tray cable (Type ITC), see Article 727 of the NEC.

   For power-limited tray cable (Type PLTC), see Article 725 of the NEC.

The cord or cable is terminated on at least one end with a molded-on or assembled-on plug or socket. Cable assemblies with only one end terminated are intended for direct connection to a proximity switch, control panel, or similar device.

Cable Plugs and Sockets — Plugs and sockets intended to be field wired or molded onto cord or cable as indicated under **Cable Assemblies** above may have a male or female insert configuration. The diameter and the wire size of the field-wired cord or cable to which the plug or socket is intended to be assembled is indicated on the plug or socket or the smallest unit shipping container.

Panel-mounted Plugs and Sockets — These plugs and sockets consist of a panel-mounted assembly with either a plug or socket. Each assembly is provided with a means to secure to a panel. These plugs and sockets may be provided with leads intended for direct wiring connection to a control panel, proximity switch, or other similar device.

RATINGS

These cable assemblies are rated based on the involved cord or cable as follows:

1. extra-hard-usage cord for applications involving circuits operating at 600 V or less and 60 A or less,
2. instrumentation tray cable (Type ITC) for applications involving instrumentation and control circuits operating at 150 V or less and 5 A or less, or
3. power-limited tray cable (Type PLTC) for applications involving remote-control, signaling, and power-limited circuits supplied by a Class 2 or Class 3 power source.

Cable assemblies and plugs and sockets are rated in volts and amperes. The devices are marked with such rating on the device or smallest unit shipping container.

SPECIAL CONSIDERATIONS

The cable assemblies and mating plugs and sockets are not intended to be used as a substitute for the fixed wiring methods required by 18-156 of the CEC.

These cable assemblies and mating plugs and sockets are intended for use only with the Listee's same line of cable assemblies and mating plugs and sockets covered under this category.

The products covered under this category are not intended for interruption of current and are so marked.

These devices are intended for indoor use only, unless otherwise so identified.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 182.3 (1987), "Special Use Attachment Plugs, Receptacles and Connectors."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cable Assembly for Industrial Control and Signal Distribution for Use in Hazardous Locations," "Cable Assembly Plug for Industrial Control and Signal Distribution for Use in Hazardous Locations," "Cable Assembly Socket for Industrial Control and Signal Distribution for Use in Hazardous Locations," "CYJZ7 Cable Assembly for Use in Hazardous Locations," "CYJZ7 Cable Assembly Plug for Use in Hazardous Locations" or "CYJZ7 Cable Assembly Socket for Use in Hazardous Locations." The words "Hazardous Locations" may be abbreviated "Haz. Loc."

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CABLE GLANDS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (CYLQ7)

USE

This category covers products for threaded termination and entry of cable approved for hazardous (classified) locations (in accordance with Clause 18-106(1) of CAN/CSA-C22.1, "Canadian Electrical Code, Part I") into Flameproof 'd' or Increased Safety 'e' enclosures in accordance with the installation instructions provided with the gland.

Flameproof cable glands provide strain relief and either polymeric sealing or elastomeric sealing of effectively filled cable. Glands requiring a polymeric seal are for use only with the sealing compounds specified by the manufacturer in the instructions provided with the fitting.

Increased Safety cable glands provide strain relief and a minimum ingress protection rating of IP 54 to maintain the integrity of the type of protection.

Glands covered under this category are for termination of the cable types (armored, unarmored, circular, etc.) indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cable Gland for Use in Hazardous Locations" or "Cable Fitting for Use in Hazardous Locations" or other appropriate product name as shown in the individual Listings.

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CABLE FITTINGS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (CYMJ7)

USE

This category covers cable termination fittings and combination cable termination and sealing fittings for threaded connection of cable to equipment in as indicated in the individual certifications. The termination and sealing fittings are intended for use only with the sealing compound as specified by the manufacturer in instructions furnished with the fitting.

These devices are intended for use in sealing the conductors and outer jackets of certified cable of the type indicated in the individual certifications. No splices of conductors are intended to be made in the fitting. Restrictions on position and/or location of the fitting are indicated in the manufacturer's instructions.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "+ Cable Sealing Fitting for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

+ Generic cable designation, such as "Tech," "Tray," etc.

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CABLE SEALING FITTINGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (CYMX7)

USE

This category covers combination termination and sealing fittings for threaded connection of cables to equipment in Class I, Division 1, and/or Class II, Division 1 hazardous locations, as indicated in the individual certifications. They are for use only with sealing compound as specified by the manufacturer in instructions furnished with the fitting.

These devices are intended for use in sealing the conductors and outer jackets of certified cable of the type indicated in the individual certifications. No splices of conductors are to be made in the fitting. Restrictions on position and/or location of the sealing fitting are indicated in the manufacturer's instructions.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are CSA-C22.2 No. 30 (1991), "Explosion-Proof Enclosures for Use in Class I Hazardous Locations," CSA-C22.2 No. 25 (1966), "Enclosures for Use in Class II Groups E, F, and G Hazardous Locations," and CSA-C22.2 No. 174 (1984), "Cables and Cable Glands for Use in Hazardous Locations."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Type + Cable Sealing Fitting for Use in Hazardous Locations," or other appropriate product name as indicated in the individual Listings.

+ Generic cable designation, such as MC, TC, etc.

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CABLE TRAYS, METAL CERTIFIED FOR CANADA (CYNW7)

GENERAL

This category covers metal cable trays intended for assembly in the field and for use in accordance with Section 12 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These products have been investigated for corrosion resistance, load class ratings and suitability for use as equipment grounding conductors when installed in accordance with the manufacturer's markings.

The investigation of cable trays does not include the support system.

The cross-sectional area of the grounding metal is marked on the outer surface of the sidewall of the tray.

INSTALLATION

Certified metal cable trays are marked with load/span class designations as specified below. These class designations represent the static weight supportable by cable tray spans.

Load/Span Class Designations
Design load at varying support spacings in kg/m

Class	1.5 m	2.0 m	2.5 m	3.0 m	4.0 m	5.0 m	6.0 m
A	99	62	45	37	N/A	N/A	N/A
C_1	259	164	119	97	N/A	N/A	N/A
D_1	N/A	N/A	N/A	179	113	82	67
E	N/A	N/A	N/A	299	189	137	112

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 126 (1991), "Cable Tray Systems."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

METAL CABLE TRAY
IN ACCORDANCE WITH THE STANDARD FOR CABLE TRAY SYSTEMS
CAN/CSA-C22.2 NO. 126
Control No.

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CABLE TRAYS, NONMETALLIC CERTIFIED FOR CANADA (CYOV7)

USE

This category covers nonmetallic, including fiberglass (fiberglass-reinforced plastic) cable tray systems installed for the support of power and/or control cable. Nonmetallic cable trays are intended for assembly in the field and for use in accordance with Section 12 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Cable trays are intended to be installed as recommended by the manufacturer. Cable trays are marked with load/span ratings and may additionally be marked with Class designations A, C, D or E. These Class designations represent the static weight supportable by cable tray spans.

Load	Span (m)	
(kg/linear m)	3.0	6.0
37	A	—
67	—	D
97	C	—

CABLE TRAYS, NONMETALLIC CERTIFIED FOR CANADA (CYOV7)

Load (kg/linear m)	Span (m) 3.0	6.0
112	—	E
179	D	—
299	E	—

These nonmetallic cable trays are constructed of flame-retardant material, provide a degree of voltage isolation, are investigated for the effects of low-temperature handling, and are suitable for outdoor use.

Nonmetallic cable trays have not been investigated for use in air-handling spaces.

The investigation of nonmetallic cable trays does not include the support system.

RELATED PRODUCTS

For metallic cable trays, see Cable Trays, Metal Certified for Canada (CYNW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 126.2 (2002), ''Nonmetallic Cable Tray Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Nonmetallic Cable Tray.''

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CAMERA EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (CYPB7)

GENERAL

This category covers cameras and pan-and-tilt drives.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 60065 (2003), ''Audio, Video and Similar Electronic Apparatus – Safety Requirements.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Camera for Use in Hazardous Locations'' or ''Pan and Tilt Drive for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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CAMERA EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (CYPH7)

GENERAL

This category covers camera equipment, such as cameras and pan and tilt drives.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 60065 (2003), ''Audio, Video and Similar Electronic Apparatus – Safety Requirements.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Camera for Use in Hazardous Locations'' or ''Pan and Tilt Drive for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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CAPACITORS CERTIFIED FOR CANADA (CYWT7)

GENERAL

This category covers general-use power factor correction units for applications on ac power systems with voltages up to 600 V. These assemblies employ integrally protected capacitors investigated under Capacitors Certified for Canada (CYWT8).

This category does not cover power factor correction units with integral automatic controls or power factor correction unit controllers.

USE AND INSTALLATION

These units are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and are intended for indoor use, unless otherwise indicated by markings on the units.

RELATED PRODUCTS

Power factor correction units with integral automatic controls are covered under Industrial Control Panels Certified for Canada (NITW7).

Power factor correction controllers are covered under Power Circuit and Motor-mounted Apparatus Certified for Canada (NMTR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 190 (1985), ''Capacitors for Power Factor Correction.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Factor Correction Unit'' or ''Capacitor Bank,'' or other appropriate product name as shown in the individual Listings.

* *

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CARBON MONOXIDE DETECTORS, SINGLE AND MULTIPLE STATION CERTIFIED FOR CANADA (CZHF7)

GENERAL

This category covers single- and multiple-station carbon monoxide detectors, intended to be employed in indoor locations, as a travel alarm and for use in recreational vehicles.

Single-station Type — Single-station carbon monoxide detectors are self-contained units that incorporate a sensor and related electrical components to initiate an audible alarm signal from the unit when an abnormal amount of carbon monoxide actuates the unit. These devices may be energized from (1) a commercial power-supply source by means of permanent wiring in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," or a flexible power-supply cord and plug, (2) use of limited-energy cable or equivalent wiring connected to the outlet of a suitable Class 2 power supply, or (3) by one or more batteries.

Where a battery is employed as a main supply, its depletion below the level at which an alarm signal would be obtained is indicated by a distinctive audible trouble signal which persists for at least seven days.

Multiple-station Type — Multiple-station carbon monoxide detectors are similar to single-station units but are provided with leads or terminals to permit the interconnection of single-station units so that actuation of any one unit results in the actuation of audible alarms of all units. The installation instructions (manual) indicate the maximum number of units that can be interconnected. Refer to the instruction manual provided with each detector for installation data.

Travel Alarm — A travel alarm consists of a carbon monoxide detector provided with a mounting bracket for temporary mounting only. Its use is indicated on the UL Certification Mark.

Detectors for Recreational Vehicles — These devices are investigated for the more stringent environmental and operational conditions encountered in recreational vehicles as described in the designated sections of CSA 6.19, "Residential Carbon Monoxide Alarming Devices."

Where applicable, supplementary devices and accessories for use with these units, such as a remote horn, are indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA 6.19, "Residential Carbon Monoxide Alarming Devices."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and one of the following product names as appropriate:

"Single-station Carbon Monoxide Detector"
"Multiple-station Carbon Monoxide Detector"
"Single- and/or Multiple-station Carbon Monoxide Detector"
"Single- and/or Multiple-station Carbon Monoxide Detector Accessory"
"Travel Carbon Monoxide Alarm"
"Single-station Carbon Monoxide Detector – Also Suitable as Travel Carbon Monoxide Alarm"
"Single-station Carbon Monoxide Detector – Also Suitable for Use in Recreational Vehicles"
"Single-station Carbon Monoxide Detector – Also Suitable for Use in Recreational Vehicles as a Travel Carbon Monoxide Alarm"
"Single-station Smoke Detector – Also Suitable as a Single-station Carbon Monoxide Alarm"
"Multiple-station Smoke Detector – Also Suitable as a Multiple-station Carbon Monoxide Detector"
"Single- and/or Multiple-station Smoke Detector – Also Suitable as a Single- and/or Multiple-station Carbon Monoxide Detector"
"Single-station Smoke and/or Carbon Monoxide Detector Accessory – Also Suitable for Use as a Home Health Care Control Unit"

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CARBONATORS CERTIFIED FOR CANADA (CZKR7)

GENERAL

This category covers carbonators for commercial and household use.

Commercial Units

Carbonators intended for commercial use consist of electric-motor-driven water pumps and mixing chambers intended for mixing water and carbon-dioxide gas and storing the mixture under carbon-dioxide-gas pressure.

These units are intended for connection to compressed-carbon-dioxide cylinders, and for permanent connection to electrical and plumbing systems. The mixing storage chambers are provided with suitable pressure-relief valves.

These units may be provided with a means for permanent connection to the electrical system or with a power-supply cord. Units supplied with a power-supply cord are also provided with provision for conversion to permanent connection.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water-supply lines.

The compressed-carbon-dioxide cylinders, reducing valves or associated fittings intended for use with these carbonators are not covered under this category.

Household Units

Carbonators intended for household use are intended to carbonate liquids using disposable carbon-dioxide cylinders. The cylinders, as well as the containers intended to contain the carbonated liquids, are provided with the carbonator.

These units are provided with a power-supply cord for connection to the electrical system.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming liquids prepared by the use of these machines has been investigated.

RELATED PRODUCTS

Refrigerated beverage dispensers are covered under Beverage Coolers and Beverage Cooler-Dispensers Certified for Canada (SFWY7); nonrefrigerated beverage dispensers are covered under Food-preparing Machines, Commercial Certified for Canada (IPST7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 68 (2009), "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Carbonator."

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CARTS AND STANDS FOR HOUSEHOLD, COMMERCIAL AND INSTITUTIONAL USE CERTIFIED FOR CANADA (CZUV7)

USE

This category covers household, commercial and institutional-use carts, stands and entertainment centers to provide a surface for structural support of audio/video equipment.

INSTRUCTIONS AND PRODUCT MARKINGS

Carts, stands and entertainment centers intended for use with a television are marked to indicate the maximum weight of the television. Other supporting surfaces may be marked with the maximum specified weight or the information may be presented in the use and care instructions.

Carts, stands and entertainment centers intended for use with specific equipment or equipment parameters are marked to identify the equipment or equipment parameters.

Use and care instructions are provided for the proper use and assembly of the cart, stand or entertainment center.

RELATED PRODUCTS

Tall institutional carts that have a support bracket or a shelf more than 1 m (39.37 in.) above the floor and that are intended for use in schools, institutions, hospitals or similar locations are covered under Carts, Tall Institutional Certified for Canada (CZWK7).

Furnishings not intended for use as a mobile cart or audio/video stand are covered under Decorative Furnishings Certified for Canada (IYNA7) or Furnishings, Household and Commercial Certified for Canada (IYQX7).

CARTS AND STANDS FOR HOUSEHOLD, COMMERCIAL AND INSTITUTIONAL USE CERTIFIED FOR CANADA (CZUV7)

Audio/video support systems intended to be mounted to walls, ceilings or another permanent part of a building as the primary support means are covered under Wall and Ceiling Mounts and Accessories Certified for Canada (IYNW7).

When the manufacturer of the video and/or audio components supplies the supports for those components, the supports are and covered under Audio/Video Apparatus Certified for Canada (AZSQ7) or Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Information technology and communications equipment cabinet, enclosure and rack systems are covered under Audio/Video, Information and Communication Technology Equipment Cabinet, Enclosure and Rack Systems Certified for Canada (NWIN7).

Custom-built telecommunications equipment cabinets and racks are covered under Custom-built Telecommunications Equipment Certified for Canada (WYKM7).

Television and video equipment intended for use in health care facilities is covered under Television/Video Equipment for Use in Health Care Facilities Certified for Canada (KFCV7).

Utility tables employing permanently attached receptacles and either a permanently attached power-supply cord or separable cord set are covered under Tables, Utility Certified for Canada (WWJT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60065 (2003), ''Audio, Video and Similar Electronic Apparatus – Safety Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number; and one of the following product names: ''Television Cart,'' ''Audio Cart,'' ''Stereo System Cart,'' ''Television Pedestal'' or other appropriate product name as shown in the individual Listings.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

CARTS, TALL INSTITUTIONAL CERTIFIED FOR CANADA (CZWK7)

USE

This category covers carts that have a support bracket or a shelf more than 1 m (39.37 in.) above the floor and that are intended for use in schools, institutions, hospitals or similar locations. These carts are intended to provide a surface for the structural support of products including, but not limited to, audio/video equipment, information technology equipment, medical equipment, and the like.

INSTRUCTIONS AND PRODUCT MARKINGS

Carts intended for use with a television are marked to indicate the maximum weight of the television. Other supporting surfaces may be marked with the maximum specified weight or the information may be presented in the use and care instructions.

Carts intended for use with specific equipment or equipment parameters are marked to identify the equipment or equipment parameters.

A tall institutional cart is marked to indicate the proper method to move the cart.

Use and care instructions are provided for the proper use and assembly of the cart or stand.

RELATED PRODUCTS

Carts, stands and entertainment centers are covered under Carts and Stands for Household, Commercial and Institutional Use Certified for Canada (CZUV7).

When the manufacturer of the video and/or audio components supplies the supports for those components, the supports are covered under Audio/Video Apparatus Certified for Canada (AZSQ7) or Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Information technology and communications equipment cabinet, enclosure and rack systems are covered under Audio/Video, Information and Communication Technology Equipment Cabinet, Enclosure and Rack Systems Certified for Canada (NWIN7).

Custom-built telecommunications equipment cabinets and racks are covered under Custom-built Telecommunications Equipment Certified for Canada (WYKM7).

Television and video equipment intended for use in health care facilities is covered under Television/Video Equipment for Use in Health Care Facilities Certified for Canada (KFCV7).

Utility tables employing permanently attached receptacles and either a permanently attached power-supply cord or separable cord set are and covered under Tables, Utility Certified for Canada (WWJT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60065 (2003), ''Audio, Video and Similar Electronic Apparatus – Safety Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Tall Institutional Cart,'' ''Tall Institutional Table,'' ''Tall Institutional Television Cart,'' ''Tall Institutional TV Cart,'' ''Tall Institutional TV Table,'' ''Tall Institutional Audio Cart,'' ''Tall Institutional Audio Table,'' ''Tall Institutional Video Cart,'' ''Tall Institutional Video Table,'' or other appropriate product name as shown in the individual Listings.

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CENTRIFUGES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (DAZV7)

GENERAL

This category covers centrifuges designed for use in hazardous (classified) locations. They have been investigated with respect to risk of explosion, fire, electric shock, and injury to persons.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 151 (1986), ''Laboratory Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Centrifuge for Use in Hazardous Locations.''

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MOTOR-OPERATED CHECK-OUT STANDS CERTIFIED FOR CANADA (DBNT7)

USE

This category covers motor-operated check-out stands intended for use in retail stores to facilitate tally and packing operations. These check-out stands are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Foot and knee controls are also covered under this category.

RELATED PRODUCTS

Self-check-out stands not provided with a motorized belt are covered under Custom-built Kiosks Certified for Canada (EMHH7).

Point-of-sale cabinets not provided with a motorized belt are covered under Wired Cabinets Certified for Canada (ZNXR7) or Furniture, Powered and Nonpowered Certified for Canada (IYNE7).

Barcode scanners and cash registers are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Conveyors that do not form a component part of a check-out stand are covered under Conveyors Certified for Canada (EJJR7).

Scales are covered under Scales and Accessories, Electronic Certified for Canada (TUTT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II," and CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Check Out Stand."

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CHIMNEYS, FIREPLACES, VENTS AND SOLID-FUEL-BURNING APPLIANCES CERTIFIED FOR CANADA (DCBR7)

This category covers chimneys, fireplaces, vents and solid-fuel-burning appliances, which include factory-built type products not requiring field construction and intended for use in accordance with the "National Building Code of Canada."

These products are investigated to determine the suitability of their construction and performance for the service for which they are intended. It is determined that temperatures on combustible materials and surfaces adjacent to or in contact with the assembly will not exceed specified limits when the product is installed and used as directed.

Processed solid fuel is investigated for use with the type of solid-fuel-burning appliance specified for the fuel.

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CHIMNEYS CERTIFIED FOR CANADA (DCOZ7)

This category covers chimneys consisting entirely of factory-made parts. The parts of each model of chimney are designed to be assembled with the other parts of that model without requiring field construction.

Chimney and Vent Connectors and Accessories Certified for Canada (DDCY7)

USE AND INSTALLATION

This category covers chimney and vent connectors and accessories which are engineered systems intended for connecting appliances to a vertical chimney or vent, or to reduce the clearances from connectors to combustible material in accordance with CSA B149.1, "Natural Gas and Propane Installation Code, " CSA B139, "Installation Code for Oil-Burning Equipment," or CSA B365, "Installation Code for Solid-Fuel-Burning Appliances and Equipment," as applicable.

The type(s) of fuel-fired heating appliance (e.g., gas, liquid, solid fuel) with which these connectors and accessories have been investigated is indicated in the individual certifications. This information, together with

Chimney and Vent Connectors and Accessories Certified for Canada (DDCY7)−*Continued*

other restrictions of use, such as mounting position and clearance to combustibles, are also marked on the product and/or detailed in the manufacturer's installation instructions furnished with the product.

ADDITIONAL INFORMATION

For additional information, see Chimneys Certified for Canada (DCOZ7), Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C441.3, "Gas Vent Connectors," ULC/ORD-C441, "Pellet Vents," and ULC-S641, "Factory-Built Chimney Connectors and Wall Pass-Through Assemblies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Chimney Connector," "Gas Vent Connector," "Vent Connector," "Chimney Accessories," "Gas Vent Accessories" or "Vent Accessories."

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Chimneys, 1400 Degree Fahrenheit Certified for Canada (DDTZ7)

USE AND INSTALLATION

This category covers factory-built 1400°F (760°C) chimneys intended for venting flue gases at a temperature not exceeding 1400°F (760°C) under continuous operating conditions, from building-heating appliances and other low-heat appliances as specified in the Chimney Selection Chart of ANSI/NFPA 211, "Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances."

Each 1400°F factory-built chimney consists of one or more chimney sections, a chimney cap, lateral supports, thimble and flashing assembly if needed, and other parts as specified in the installation instructions provided with each chimney system.

These chimneys are intended to be installed in accordance with the installation instructions provided with each chimney assembly. They are not intended to be enclosed within combustible construction, but an interior chimney should be enclosed in a noncombustible fire-resistive shaft of appropriate size and rating where the chimney extends through any story of a building above that in which the connected appliance is located. An unenclosed chimney may be placed adjacent to walls of combustible construction at the clearances specified on each chimney section and in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Building-heating-appliance chimneys are covered under Chimneys, Residential Type and Building-heating Appliance Certified for Canada (DDXU7).

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C959, "540°C and 760°C Industrial Chimneys."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "1400°F Chimney Part."

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Chimneys, Residential Type and Building-heating Appliance Certified for Canada (DDXU7)

USE AND INSTALLATION

This category covers residential-type and building-heating-appliance chimneys intended for venting flue gases at a temperature not exceeding 1000°F (540°C), under continuous operating conditions, from gas-, liquid- and solid-fuel-fired, residential-type appliances and building-heating appliances specified in the Chimney Selection Chart of ANSI/NFPA 211, "Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances."

Each residential-type chimney consists of one or more chimney sections, a support assembly (ceiling support or tee section), firestop spacers to be employed at each floor and ceiling penetrated if a support is not installed at that location, a roof assembly, a chimney cap, flashing and other parts as designated in the installation and maintenance instructions provided with each chimney system and required to complete the particular installation. Chimneys certified as suitable for masonry fireplaces are intended to employ the appropriate fireplace adapter specified in the individual certifications.

These chimneys are intended to be installed in accordance with the installation instructions provided with each chimney-support assembly. Minimum air-space clearance to combustible materials should be maintained as marked on the chimney sections.

Residential chimneys may have the support assembly located at any floor level with the chimney extending vertically upward (30° maximum offset) through the floors, ceilings, and roof of the building to a height not greater than indicated in the individual certifications. Portions of the chimney which may extend through accessible spaces should be enclosed in all cases to avoid personal contact with or damage to the chimney.

Chimneys designated in the individual certifications and on the individual chimney parts as only a building-heating-appliance chimney are intended for installation in, or exterior to, other than one- or two-family dwellings. These chimneys are intended to be installed in accordance with the installation instructions provided with the chimney. They are not intended to be enclosed within combustible construction. An interior chimney is intended to be enclosed in a noncombustible, fire-resistive shaft of appropriate size where the chimney extends through any story of a building above that in which the connected appliance is located. An unenclosed chimney may be placed adjacent to walls of combustible construction at the air space clearances specified on each chimney section and in the individual certifications.

Each building-heating-appliance chimney consists of one or more chimney sections, a chimney cap, lateral supports, thimble and flashing assembly, and other parts as designated in the installation and maintenance instructions provided with each chimney system.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C959, "540°C and 760°C Industrial Chimneys."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Residential Type and Building Heating Appliance Chimney Part" or "Building Heating Appliance Chimney Part."

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LINERS CERTIFIED FOR CANADA (DDZR7)

USE AND INSTALLATION

This category covers chimney liners intended for installation in new or existing masonry chimneys as indicated in the individual certifications. Chimneys equipped with these liners are suitable for the venting of combustion products from residential appliances burning gas, oil, or solid fuel as indicated in the individual certifications.

Residential appliances include fireplaces, space heaters, and central-heating furnaces and boilers.

Separate chimney-liner parts required for installation of chimney liners are specified in the installation instructions provided with the chimney liners. The performance of the liner assembly may be affected if the proper combination of these components is not used. Installation of liners

Liners Certified for Canada (DDZR7)−*Continued*

designed for new chimney use should be performed only by skilled masons in chimneys conforming to the requirements of the "National Building Code of Canada."

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S640, "Lining Systems for New Masonry Chimneys," and CAN/ULC-S635, "Lining Systems for Existing Masonry or Factory-Built Chimneys and Vents."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Liner for New Masonry Chimney," "Liner for Existing Masonry Chimney" or "Component for Chimney Liner [Manufacturer's Name and Model]."

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FIREPLACES CERTIFIED FOR CANADA (DEET7)

USE AND INSTALLATION

This category covers factory-built fireplaces, which consist of a fire chamber assembly, one or more chimney sections, a roof assembly, and other parts, as designated in the installation and operating instructions provided with each fireplace. Firestops or firestop spacers, if specified, are intended to be included and installed at joist areas where the fireplace chimney extends through floors and ceilings. These parts are designed to be assembled with their companion parts as shown in the installation instructions provided with the fire chamber. These fireplaces are suitable for installation in buildings, and are intended to burn solid wood or coal fuels.

These fireplaces may be provided with glass door assemblies, electric blower assemblies, heating air duct system, combustion air duct kits, hearth extensions, adjustable flue gas dampers, or other optional features as specified in the installation and operating instructions. Fireplaces provided with glass doors, or having glass doors as an optional feature, are indicated by an "X" under the heading **Glass Doors** in the individual Listings.

These fireplaces are intended for installation as indicated in the individual Listings and may be located at any floor level with the chimney extending vertically upward through the floors, ceilings, and roof to a height not less or greater than that indicated in the individual Listings.

A line under a specific heading in the individual Listings indicates exclusion from the specific item or installation.

The fire chamber assembly is designed to be installed directly upon and adjacent to combustible building construction or at a clearance not less than specified in the individual Listings and on the fire chamber. The chimney sections are intended to be installed to provide clearance to combustible material not less than specified in the individual Listings and on the chimney section. If the fireplace chimney is designed to extend through floors and ceilings, the clearances to the floor and ceiling construction should be that established by the installation of the designated factory-furnished firestop or firestop spacer. Portions of the chimney that may extend through spaces used for living quarters or storage should be enclosed to avoid personal contact with and damage to the chimney.

Solid-fuel inserts should not be installed in fireplaces covered under this category unless specified in the individual Listings of the fireplace and the insert certification.

Factory-built fireplaces suitable for installation in a mobile home are indicated by an "X" under the heading **Mobile Home Use** in the individual Listings and on the fire chamber.

Each factory-built fireplace for use in a mobile home consists of a fire chamber assembly, one or more chimney sections, separate combustion air inlets, a roof assembly consisting of a separate flashing and spark arrester cap, and other parts, as designated in the installation and operating instructions provided with each fireplace.

A firestop spacer-thimble is included and employed at joist areas where the fireplace chimney extends through the mobile home ceiling.

RELATED PRODUCTS

Fireplaces Certified for Canada (DEET7)−*Continued*

Chimneys are covered under Chimneys, Residential Type and Building-heating Appliance Certified for Canada (DDXU7).

Appliances intended to burn gas fuels that are for installation in vented fireplaces are covered under Decorative Gas-fired Appliances for Installation in Vented Fireplaces Certified for Canada (EOIM7).

Accessories for fireplaces are covered under Fireplace Accessories Certified for Canada (DEHX7).

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S610, "Standard for Factory-Built Fireplaces."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: (A) "Fireplace," (B) "Fireplace Suitable for Mobile Home Installation," or (C) "Component for Fireplace."

Each fire chamber assembly of a Listed fireplace bears a Listing Mark with a product name similar to (A) or (B). Each component fireplace part included as a part of a Listed fireplace bears a Listing Mark with a product name similar to (C).

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Fireplace Accessories Certified for Canada (DEHX7)

USE AND INSTALLATION

This category covers fireplace accessories, which consist of heat exchangers, glass door assemblies, fire chamber forms, direct-connect systems and other accessories which are intended for installation in masonry fireplaces constructed and installed in accordance with ANSI/NFPA 211, "Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances," or applicable local code requirements.

Some heat exchangers may include electric blower assemblies as specified in the installation instructions.

Direct-connect systems are intended for use in connecting solid-fuel-fired fireplace inserts, fireplace stoves and room heaters to the chimney of an existing masonry fireplace.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S610, "Factory-Built Fireplaces."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Solid Fuel Burning Appliance Accessory – Door Assembly," "Solid Fuel Burning Appliance Accessory – Heat Exchanger," "Solid Fuel Burning Appliance Accessory – Fire Chamber Form," "Solid Fuel Burning Appliance Accessory – Direct Connect System," or other appropriate product name as shown in the individual Listings.

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FIREPLACES, OUTDOOR USE CERTIFIED FOR CANADA (DEPE7)

USE AND INSTALLATION

Fireplaces, Outdoor Use Certified for Canada (DEPE7)−*Continued*

This category covers factory-built fireplaces intended for outdoor use. They consist of a fire-chamber assembly, one or more chimney sections, a roof assembly and other parts, as designated in the installation and operating instructions provided with each fireplace. Firestops or firestop spacers, if specified, are intended to be included and installed at joist areas where the fireplace chimney extends through floors and ceilings. These parts are designed to be assembled with their companion parts as shown in the installation instructions provided with the fire chamber. These fireplaces are intended to burn solid wood or coal fuels only and are not intended to be used for cooking. These fireplaces are intended to be installed in accordance with the "National Building Code of Canada."

Outdoor-use fireplaces may be provided with glass-door assemblies, hearth extensions, or other optional features as specified in the installation and operating instructions. These fireplaces may also be suitable for indoor installation as specified in the installation instructions.

Outdoor-use fireplaces are intended for installation as indicated in the individual Listings and should be located within an exterior wall with the front of the fireplace exposed to the outdoors. The chimney should extend vertically upward through the floors, ceilings and roof to a height not less or greater than that indicated in the individual Listings.

The fire chamber assembly is designed to be installed directly upon and adjacent to combustible building construction or at a clearance not less than that specified in the individual Listings and on the fire chamber. The chimney sections are intended to be installed to provide clearance to combustible material not less than that specified in the individual Listings and on the chimney section. If the fireplace chimney is designed to extend through floors and ceilings, the clearances to the floor and ceiling construction should be that established by the installation of the designated factory-furnished firestop or firestop spacer. Portions of the chimney that may extend through spaces used for outdoor living or storage should be enclosed to avoid personal contact with and damage to the chimney.

RELATED PRODUCTS

Fireplaces are covered under Fireplaces Certified for Canada (DEET7).

Chimneys are covered under Chimneys, Residential Type and Building-heating Appliance Certified for Canada (DDXU7).

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S610, "Factory-Built Fireplaces."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name (A) "Outdoor Fireplace for Use with [Company Name] Listed Fireplace Parts," (B) "Outdoor Fireplace for Use with [Company Name] Listed Model Residential Type and Building Heating Appliance Chimney and [Company Name] Listed Fireplace Parts" or (C) "Outdoor Fireplace Part."

Each outdoor-use fireplace bears a Listing Mark with a product name similar to (A) or (B). Each fireplace part included as a part of a Listed outdoor-use fireplace bears a Listing Mark with a product name similar to (C).

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FLOOR PROTECTORS AND WALL SHIELDS CERTIFIED FOR CANADA (DFCV7)

USE AND INSTALLATION

This category covers floor protectors and wall shields intended for use with certified solid-fuel heat-producing appliances for the reduction of the surface temperature of combustible wall construction materials.

Floor protectors are intended to be placed over combustible floor-construction materials beneath and adjacent to certified fireplace stoves, solid-fuel room heaters, factory-built fireplaces, and fireplace inserts where reference to the certified floor protector is specified, or when one layer of 9 mm thick noncombustible material (or 6 mm covered with sheet metal) is specified as the floor protection material, unless indicated otherwise in the individual certifications.

Wall shields are intended to be placed over combustible wall-construction materials for the purpose of reducing the clearance to com-

Floor Protectors and Wall Shields Certified for Canada (DFCV7)−*Continued*

bustible materials from that presently required for individually certified fireplace stoves and solid-fuel room heaters. The reduced clearances to walls are specified in the individual certifications. Wall shields may also be placed over combustible wall construction for the purpose of a decorative wall finish with no reduction of clearance to combustible materials from the clearance required for certified fireplace stoves and solid-fuel room heaters.

Floor protectors and wall shields are intended to be installed in accordance with the installation instructions provided with each product.

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S632 (1991), ''Heat Shields.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Floor Protector,'' ''Wall Shield'' or ''Floor Protector and Wall Shield.''

* *

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GAS VENTS CERTIFIED FOR CANADA (DFFZ7)

USE AND INSTALLATION

This category covers gas-vent pipes and related parts intended for installation as Type B or Type BW gas vents. Portions of vents that may extend through accessible spaces should be enclosed to avoid contact with and damage to the vent.

The appropriate designation ''Type B'' or ''Type BW'' is marked on each certified vent-pipe section and vent-pipe fitting.

Type B gas vents are for venting certified gas appliances with draft hoods and other certified gas appliances specified for use with Type B gas vents. Type B gas vents should not be used for venting wall furnaces certified for use with Type BW gas vents only, incinerators and appliances certified for use with chimneys only, combination gas/oil-burning appliances, and appliances that may be converted readily to the use of solid or liquid fuels. Unless otherwise indicated in the individual certifications, Type B gas vents are for single- and multistory buildings. That part of the vent which extends above the roof line and those vents certified for exterior use are inherently corrosion resistant or specially coated to resist corrosion. Type B gas vents are intended for installation with clearances not less than marked on each vent-pipe section and indicated in the individual certifications. Also, if so marked on the vent-pipe section, a Type B gas vent may be installed centrally within a wall space between 50 mm (2 in.) by 100 mm (4 in.) or 50 mm (2 in.) by 150 mm (6 in.) studs, respectively, spaced on 400 mm (16 in.) centers. The designation ''Type B-50mm (2 in.) x 100mm (4 in.)'' or ''Type B-50mm (2 in.) x 150mm (6 in.),'' respectively, is used in the individual certifications to signify suitability for such installations. When so installed, the clearance should be as established by the integral spacers at each vent-pipe joint and by the specified firestop spacer. The firestop spacer should be placed at the level of each ceiling or floor penetrated by the vent for installations of this kind.

Type BW gas vents are for venting only approved vented recessed heaters having inputs not greater than specified in the individual certifications. These vents are intended to be installed with a solid header plate to serve as a firestop at that point. These vents include provisions for direct attachment to the header plate flue outlet of the heater and are suitable for installation in walls and partitions of buildings when the vents are centrally located directly above vented recessed heaters within the space between two studs, 50 mm (2 in.) by 100 mm (4 in.), and 400 mm (16 in.) on centers. The clearance between the vent and interior surfaces of the wall or partition should be not less than that determined by the header plate, ceiling plate-spacers, firestop spacers, and the integral spacers at each vent-pipe joint. The stud space in which the vent is installed should be ventilated at the first ceiling level penetrated by the vent as attained by installation of the ceiling plate-spacers furnished with the vent. The firestop spacer should be placed at each subsequent ceiling or floor level penetrated by the vent. Vents designated ''Single-Story'' are intended for installation only in single-story buildings or the top story of multistory buildings. Vents designated ''Multi-Story'' are intended for installation in either single-story buildings or in one or more stories of multistory buildings. Type BW gas vents may be continued through roof by properly installed Type B gas vents or be connected to chimneys.

Gas Vents Certified for Canada (DFFZ7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S605, ''Gas Vents.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Type ____ Gas Vent'' or ''Material for Type ____ Gas Vent.''

* *

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LOW-TEMPERATURE VENTING SYSTEMS, TYPE L CERTIFIED FOR CANADA (DFTX7)

USE AND INSTALLATION

This category covers Type L venting systems intended for use with gas and oil appliances certified as suitable for venting with Type L venting systems. They may be used also where Type B gas vents are permitted. Type L venting system piping may be used for chimney and vent connectors and also for connection to pellet-burning appliances.

Portions of venting systems which may extend through accessible spaces are to be enclosed to avoid personal contact with and damage to the venting system.

The designation ''Type L Venting System'' is marked on each certified part. Unless otherwise indicated in the individual certifications, Type L venting systems are for single- and multistory buildings and are intended for installation with clearances not less than marked on each pipe section. The minimum clearance is indicated in the individual certifications reading: ''Type L Vent Minimum clearance ____ mm.''

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S609, ''Low-Temperature Vents, Type L,'' and ULC/ORD-C441, ''Pellet Vents.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Type L Vent'' or ''Pellet Vent.''

* *

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PROCESSED SOLID FUEL CERTIFIED FOR CANADA (DFXJ7)

USE

This category covers composite fire logs intended for use in specific types of solid-fuel-burning appliances, such as factory-built fireplaces. These fuels are intended as an alternate to natural solid-wood fuel only in the products specified in the individual certifications.

The type of appliance and other conditions of use are marked on the product.

RELATED PRODUCTS

See Fireplaces Certified for Canada (DEET7).

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials

Processed Solid Fuel Certified for Canada (DFXJ7)−*Continued*

Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C127, ''Composite Fire Logs.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

COMPOSITE FIRE LOG or PROCESSED SOLID FUEL FOR USE IN FACTORY-BUILT FIREPLACES
Control No.
*** ***

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ROOM HEATERS, SOLID-FUEL TYPE CERTIFIED FOR CANADA (DGAW7)

These solid fuel type room heaters (space heaters) consist of a free standing, chimney connected fire chamber operated with the door(s) closed which may be (1) equipped with manual draft controls or a thermostatic draft control, (2) surrounded with a decorative outer enclosure and (3) provided with electric blower assemblies, chimney connectors, electric cooking equipment (consisting of electric ovens and/or surface units) and other parts as identified in the individual Listings and specified in the installation and operating instructions provided with each room heater.

These room heaters are intended to be placed on a noncombustible floor or on a floor protector on combustible floors with clearances to combustible material not less than indicated in the individual listings and marked on the room heater.

The combustible floor beneath the unit is to be covered with materials specified in the installation instructions packaged with the unit. The floor area to be covered is as specified in the installation instructions.

The chimney connectors are to be installed to provide clearances to combustible material not less than specified in the installation instructions and individual listings.

The room heater is to be connected to a chimney suitable for use with residential type and other building heating appliances as specified in the installation instructions. Factory-built residential type and building heating appliance chimneys shall be Listed and of the Type HT designation.

Some room heaters have been investigated with specific venting systems as indicated in the individual listings.

These room heaters are intended for the burning of solid wood, coal, solid wood pellets or shelled corn fuels as indicated in the individual listings and marked on the room heater.

Solid fuel type room heaters suitable for installation in a mobile home are indicated in the individual listings and marked on the room heater.

Each room heater, for use in a mobile home consists of a fire chamber assembly, one or more chimney sections; separate combustion air inlets; a roof assembly consisting of a flashing and spark arrester cap, and other parts, as designated in the installation and operating instructions provided with each room heater. A firestop spacer-thimble is included and employed at joist or stud areas where the chimney extends through the mobile home ceiling/roof or wall. The parts are designed to be assembled with their companion parts as shown on the installation instructions provided with each room heater.

The chimney sections are to be installed to provide clearance to combustible material not less than specified in the Listings and on the chimney section. The chimney connected to the room heater, is designed to extend through the mobile home ceilings or walls with the clearance to the ceiling/roof or wall construction to be that established by the installation of the designated factory furnished firestop spacer-thimble.

The basic standard used to investigate products in this category is CAN/ULC-S627, ''Space Heaters For Use with Solid Fuels''.

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED'', a control number, and one of the following product names as appropriate: (A) ''Solid Fuel Room Heater Intended For Use With (Company Name) Listed Solid Fuel Room Heater Parts'', (B) ''Solid Fuel Room Heater Part'', (C) ''Solid Fuel Room Heater'',

Room Heaters, Solid-fuel Type Certified for Canada (DGAW7)−*Continued*

(D)''Solid Fuel Fired Space Heater Intended For Use With (Company name) Listed Solid Fuel Fired Space Heater Parts'', (E)''Solid Fuel Fired Space Heater-Part'', ''(F)'' Solid Fuel Fired Space Heater''.

Each Listed solid fuel room heater bears a Listing Mark with a product name similar to (C) and (F). When additional parts are required to complete the room heater installation, the room heater bears a Listing Mark with a product name similar to (A) and (D), and each additional part bears a Listing Mark with a product name similar to (B) and (E).

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SOLID-FUEL-BURNING-APPLIANCE ACCESSORIES CERTIFIED FOR CANADA (DGOU7)

USE

This category covers accessories intended for use with the designated solid-fuel room heaters, fireplaces and fireplace stoves as indicated in the individual certifications. The accessories are intended to be installed in accordance with the installation instructions provided with the device.

RELATED PRODUCTS

See Fireplaces Certified for Canada (DEET7) and Room Heaters, Solid-fuel Type Certified for Canada (DGAW7).

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S604, ''Factory Built Type A Chimneys,'' CAN/ULC-S610, ''Factory-Built Fireplaces,'' and ULC-S627, ''Space Heaters for Use with Solid Fuels.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SOLID FUEL BURNING APPLIANCE ACCESSORY – [PRODUCT IDENTITY*]
FOR USE WITH UL LISTED [COMPANY NAME] SOLID FUEL BURNING APPLIANCE ACCESSORIES
MODEL(S) ____ +
No.

* The appropriate product name as shown in the individual Classifications

\+ **SOLID FUEL ROOM HEATER**, **FIREPLACE STOVE** or **FIREPLACE**

*** ***

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SPECIAL GAS VENTS CERTIFIED FOR CANADA (DGSH7)

USE AND INSTALLATION

This category covers Type BH special gas vents designed only for venting approved gas appliances intended for negative or positive pressure venting producing flue gases having temperatures specified below:

Class I — Venting systems suitable for gas-fired appliances producing flue gas temperatures of more than 135°C but not more than 245°C.

Class II — Vent systems suitable for gas-fired appliances producing flue gas temperatures of 135°C or less, and classified into four temperature ratings as follows:

A – Up to and including 65°C
B – Up to and including 90°C
C – Up to and including 110°C
D – Up to and including 135°C

The specific appliance classification with which each Type BH gas vent may be used is indicated in the individual certifications and on the product.

Special Gas Vents Certified for Canada (DGSH7)−*Continued*

These vents are intended to be installed in accordance with the installation instructions provided with the product. Minimum air-space clearance to combustible materials should be maintained as marked on the vent sections using the parts specified in the installation instructions.

Firestop spacers are intended to be employed at each floor and ceiling penetrated. Flashings are provided for sealing roof and exterior wall penetrations. These vents are terminated with the specific caps provided.

These vents are intended to terminate in accordance with CSA B149.1, ''Natural Gas and Propane Installation Code,'' or CSA B149.2, ''Propane Storage and Handling Code.''

ADDITIONAL INFORMATION

For additional information, see Chimneys, Fireplaces, Vents and Solid-fuel-burning Appliances Certified for Canada (DCBR7), Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S636, ''Type BH Gas Venting Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Gas Vent Type BH.''

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SEASONAL AND HOLIDAY DECORATIVE PRODUCTS CERTIFIED FOR CANADA (DGVT7)

SEASONAL AND HOLIDAY DECORATIVE PRODUCT ACCESSORIES CERTIFIED FOR CANADA (DGWU7)

GENERAL

This category covers accessories intended for use with decorative-lighting strings and decorative outfits. This includes such items as flasher controllers with and without sound, and other miscellaneous devices for use with decorative-lighting strings and decorative outfits.

This category does not cover decorative lamps, decorative-lighting strings, decorative outfits, electric ornaments, cord sets (extension cords), temporary power taps, decorative-lighting harnesses, or any other nondecorative-lighting products.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 37 (1989), ''Christmas Tree and Other Decorative Lighting Outfits.''

Products employing controllers are additionally investigated to the requirements contained in CSA Technical Information Letter No. B-70, ''Decorative Lighting Strings with Flashers or Controllers'' (issued March 3, 2003).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Decorative Outfit Accessory.''

The Listing Mark for this category requires the use of a holographic label.

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ELECTRIC ORNAMENTS CERTIFIED FOR CANADA (DGXC7)

USE

This category covers electric ornaments, which are units provided with input leads and adapters intended to take the place of push-in lamps in a series-connected decorative-lighting string or decorative outfit. An ornament may be electronically or nonelectronically operated. Electric ornaments are intended for indoor use only.

An electronically operated ornament employs a motor, a printed wiring assembly, electronic components, or the like. This type of ornament may produce sound, be illuminated, animated, or the like, or a combination of the above.

A nonelectronically operated ornament is provided with a wiring assembly consisting of only a lamp and lampholder on one end and an adapter on the other end. This type of ornament is illuminated only.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 37 (1989), ''Christmas Tree and Other Decorative Lighting Outfits.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Ornament.''

The Listing Mark for this category requires the use of a holographic label.

* *

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OUTFITS, DECORATIVE CERTIFIED FOR CANADA (DGXW7)

USE

This category covers decorative outfits intended for temporary use and includes decoration units other than strings, such as plaques, wreaths, stars, crosses, tree-top units, sprays, candle sets, flasher controls and motorized devices such as tree stands with or without provision for illumination and color wheels.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 37, ''Christmas Tree and Other Decorative Lighting Outfits.''

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Decorative Outfit for Indoor and Outdoor Use'' or ''Decorative Outfit for Indoor Use Only.''

The Listing Mark for this category requires the use of a holographic label.

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STRINGS, DECORATIVE LIGHTING CERTIFIED FOR CANADA (DGZZ7)

USE

This category covers decorative-lighting strings intended for seasonal, temporary use, consisting of a string of lights that may be draped over or around trees or other objects for decorative effect. Decorative-lighting strings are factory assembled with replaceable lamps and are connected by means of an attachment plug or the like.

Strings are not intended for installation on artificial trees employing metal or metalized plastic needles, leaves or branch coverings. They also should not be installed in a manner that can cut or damage wire insulation.

Strings, Decorative Lighting Certified for Canada (DGZZ7)−*Continued*

RELATED PRODUCTS

Decorative-lighting strings provided with individual lamp shades or diffusers over each individual lamp and decoration units other than strings are covered under Outfits, Decorative Certified for Canada (DGXW7), Seasonal and Holiday Decorative Product Accessories Certified for Canada (DGWU7) and Electric Ornaments Certified for Canada (DGXC7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 37, ''Christmas Tree and Other Decorative Lighting Outfits.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Decorative-lighting String.''

The Listing Mark for this category requires the use of a holographic label.

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CIRCUIT BREAKERS CERTIFIED FOR CANADA (DHJR7)

GENERAL

This category covers circuit breakers which, unless otherwise noted, are of the manually operable, air break type, providing automatic overcurrent protection.

PRODUCT MARKINGS AND RATINGS

Circuit breakers are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such markings are independent of any marking on terminal connectors.

1. Circuit breakers with a current rating of 125 A or less are marked as being suitable for 60°C, 75°C only or 60/75°C rated conductors. It is acceptable to use conductors with a higher insulation rating, if the ampacity is based on the conductor temperature rating marked on the breaker.
2. Circuit breakers rated 125 A or less and marked suitable for use with 75°C rated conductors are intended for field use with 75°C rated conductors at full 75°C ampacity only when the circuit breaker is installed in a circuit breaker enclosure or individually mounted in an industrial control panel with no other component next to it, unless the end-use equipment (panelboard, switchboard, service equipment, power outlet, etc.) is also marked suitable for use with conductors rated 75°C.
3. A circuit breaker with a current rating of more than 125 A is suitable for use with conductors rated 75°C.
4. Circuit breakers intended for continuous operation at 100% of rated current may be marked to be connected with 90°C rated wire with the size based on 75°C ampacity.

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CIRCUIT-BREAKER ACCESSORIES CERTIFIED FOR CANADA (DIHS7)

USE

This category covers accessories, such as manual and electrical operators, shunt trip devices, undervoltage trip devices, alarm switches and auxiliary switches, intended for field installation for use only with specific circuit-breaker types. Correct combinations of circuit breakers and accessories are indicated by markings on or with the accessory and/or the circuit breaker.

ADDITIONAL INFORMATION

Circuit-breaker Accessories Certified for Canada (DIHS7)−*Continued*

For additional information, see Circuit Breakers Certified for Canada (DHJR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 5 (2002), ''Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Circuit Breaker Accessory'' (or ''C.B. Acc.'') or the name of the specific product, such as ''Undervoltage Trip Relay.''

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CIRCUIT BREAKERS AND SURGE-PROTECTIVE DEVICES CERTIFIED FOR CANADA (DIMV7)

USE AND INSTALLATION

This category covers combination circuit breaker and surge-protective devices (SPDs) incorporating overcurrent protection, and surge protection designed for repeated limiting of transient-voltage surges on 50 or 60 Hz power circuits not exceeding 600 V. SPDs are designated:

Type 1 — Permanently-connected SPDs intended for installation between the secondary of the service transformer and the line side of the service equipment overcurrent device, as well as the load side, including meter sockets, and intended to be installed without an external overcurrent-protective device.

Type 2 — Permanently-connected SPDs intended for installation on the load side of the service equipment overcurrent device, including SPDs located at the branch panel.

The combination circuit breaker and SPD is a factory-assembled device, with the SPD either internal or external to the circuit breaker. When the SPD is external to the circuit breaker, the circuit breaker, SPD, internal wiring, mounting means, etc., is provided as a single unit.

They are intended for installation in circuit-breaker enclosures, panelboards, and the like, on grounded 60 Hz alternating-current power circuits in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

RELATED PRODUCTS

See Circuit Breakers, Molded Case and Circuit-breaker Enclosures Certified for Canada (DIVQ7) and Surge-protective Devices Certified for Canada (VZCA7).

ADDITIONAL INFORMATION

For additional information, see Circuit Breakers Certified for Canada (DHJR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate the circuit-breaker portion of products in this category is CAN/CSA-C22.2 No. 5 (2002), ''Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures.''

The basic standard used to investigate Type 1 SPDs intended for installation in accordance with Article 26-500 of the CEC is CAN/CSA-C233.1 (1987), ''Gapless Metal Oxide Surge Arresters for Alternating Current Systems,'' or IEEE C62.1 (1989), ''Gapped Silicon-Carbide Surge Arresters for AC Power Circuits.''

The basic standard used to investigate Type 2 SPDs in this category is CSA-C22.2 No. 8 (1986), ''Electromagnetic Interference (EMI) Filters,'' in addition to the requirements contained in CSA Technical Information Letter No. I-IIB, ''Surge/Transient Voltage Suppressors,'' and CSA Technical Information Letter No. A-24, ''Interim Certification Requirements for AC Line Connected Wiring Devices with Varistors.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Circuit Breaker and Surge Protective Device'' (or ''Circuit Breaker and SPD'').

Circuit Breakers and Surge-protective Devices Certified for Canada (DIMV7)−*Continued*

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CIRCUIT BREAKERS, MOLDED CASE AND CIRCUIT-BREAKER ENCLOSURES CERTIFIED FOR CANADA (DIVQ7)

USE

This category covers circuit breakers and circuit-breaker enclosures designed to provide service-entrance, feeder or branch-circuit protection in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

These circuit breakers are intended for use with certified enclosures, or as part of other certified equipment, or without enclosures where acceptable.

Some circuit breakers are not provided with a means to prevent their installation in assemblies that are circuit-limiting (commonly referred to as Class CTL assemblies). These circuit breakers are for use in old style, non-circuit-limiting equipment and are marked ''For Replacement Use Only, Not CTL Assemblies.''

Circuit breakers marked ''SWD'' and rated 347 V or less are suitable for switching fluorescent lighting loads on a regular basis at their rated voltage.

Circuit breakers marked ''HID'' have been investigated for switching high-intensity-discharge lighting loads on a regular basis at their rated voltage.

Some circuit breakers include a pole intended to disconnect the grounded circuit conductor of a branch circuit. All poles of these circuit breakers open simultaneously.

Single-pole circuit breakers rated 120 V ac or 120/240 V ac and multi-pole independent trip circuit breakers rated 120/240 V ac are suitable for use in a single-phase, multi-wire circuit with the neutral connected to the load, where the voltage to ground does not exceed 120 V.

2-pole independent trip breakers and single-pole breakers with handle ties, rated 120/240 V ac, are suitable for use in line-to-line single-phase circuits or line-to-line lighting and appliance branch circuits connected to 3-phase, 4-wire systems, provided the systems have a grounded neutral and the voltage to ground does not exceed 120 V.

2-pole independent trip breakers and single-pole breakers with handle ties, rated 125/250 V dc, are suitable for use in line-to-line connected 3-wire dc circuits supplied from a system with a grounded neutral where the voltage to ground does not exceed 125 V.

2-pole independent trip breakers and single-pole breakers with handle ties, rated 125/250 V (both ac and dc), are suitable for use in accordance with either of the above two paragraphs, as applicable.

Some independent trip circuit breakers are marked ''independent trip,'' ''no common trip'' or equivalent wording.

3-pole circuit breakers are suitable for use only on 3-phase systems unless marked to indicate otherwise.

Multi-pole common trip circuit breakers rated 120/240 V ac are suitable for use in a single-phase multi-wire circuit, with or without the neutral connected to the load, where the voltage to ground does not exceed 120 V.

Multi-pole common trip circuit breakers rated 125/250 V or 125/250 V dc are suitable for use in a single-phase and a dc multi-wire circuit, with or without the neutral connected to the load, where the voltage to ground does not exceed 125 V.

Circuit breakers, the performance of which may be affected by a 40°C ambient temperature within the enclosure, and that have been investigated for this application, are marked ''40 C.''

Unless otherwise marked, circuit breakers should not be loaded to exceed 80% of their current rating, where in normal operation the load will continue for three hours or more.

Circuit-breaker enclosures are marked to indicate the environmental conditions to which they are permitted to be exposed.

A current-limiting circuit breaker is one that does not employ a fusible element and that when operating within its current-limiting range, limits the let-through I^2t to a value less than the I^2t of a 1/2 cycle wave of the symmetrical prospective current.

Some certified circuit breakers have adjustable settings and can be repeatedly field adjusted for all changeable characteristics. Adjustable circuit breakers are marked with the maximum ampere rating and either a percentage or similar markings, or with current markings for each continuous-current adjustment setting.

PRODUCT TYPES

Circuit Breakers, Molded Case and Circuit-breaker Enclosures Certified for Canada (DIVQ7)−*Continued*

Circuit breakers and circuit-breaker enclosures are indicated by the label designations as follows:

Circuit Breaker — without enclosure, and with noninterchangeable trip units.

CTL Circuit Breaker — has physical size, configuration or other means which, in conjunction with the physical means provided in a circuit-limiting assembly (commonly referred to as a Class CTL assembly), is designed to prevent the installation of more circuit-breaker poles than the number for which the assembly is designed and rated.

Circuit-breaker Frame — frame only of circuit breaker with provision for interchangeable trip units. A labeled circuit-breaker frame is certified for use only with labeled circuit-breaker trip unit.

Circuit-breaker Trip Unit — trip unit only of circuit breaker having provision for interchangeable trip units.

Circuit-breaker Enclosure — enclosure only for individual 1-, 2- or 3-pole circuit breaker or for two single-pole circuit breakers not interconnected.

INSTALLATION

Circuit breakers are tested under overload conditions at six times the rating to cover motor circuit applications and are suitable for use as motor circuit disconnects per Section 28-602(1)(b) of the CEC.

Certified circuit breakers may be mounted in any position unless marked to indicate otherwise.

Line and load markings on a circuit breaker are intended to limit connections thereto as marked.

RATINGS

Certified circuit breakers are rated 600 V or less. A circuit breaker is also marked ac or dc if not suitable for both. The frequency is included if other than 60 Hz.

Circuit breakers that have an interrupting rating higher than 5000 A are marked to indicate the higher rating(s).

An interrupting rating on a circuit breaker included in a piece of equipment does not automatically qualify the equipment in which the circuit breaker is installed for use on circuits with higher available currents than the rating of the equipment itself.

PRODUCT MARKINGS

A circuit breaker that includes an accessory device, whether attached to the circuit breaker by the manufacturer of the circuit breaker, or by others, is marked to indicate the presence of that accessory.

Where the accessory is a shunt trip device that is suitable for operation with ground-fault protection, such suitability is indicated in the marking of the circuit breaker.

2-pole circuit breakers suitable for controlling 3-phase corner grounded delta circuits are marked "1ϕ - 3ϕ" to indicate their suitability.

Circuit-breaker enclosures that are suitable for use as service equipment are marked accordingly.

Circuit-breaker enclosures that have a short-circuit rating are marked accordingly.

Current-limiting circuit breakers are marked ''current limiting'' and are marked either to indicate the let-through characteristics or to indicate where such information may be obtained.

ADDITIONAL INFORMATION

For additional information, see Circuit Breakers Certified for Canada (DHJR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 5 (2002), ''Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Circuit Breaker,'' ''Circuit Breaker Frame,'' ''Circuit Breaker Trip Unit'' or ''Circuit Breaker Enclosure.'' The words ''Circuit Breaker'' may be abbreviated ''C.B.'' in all of the product names permitted above (e.g., ''C.B. Enclosure'').

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CIRCUIT BREAKERS WITH EQUIPMENT GROUND-FAULT PROTECTION CERTIFIED FOR CANADA (DIYA7)

USE AND INSTALLATION

This category covers combination circuit breaker and equipment ground-fault protective devices designed to serve the dual function of providing overcurrent protection, and ground-fault protection for equipment, as required by CAN/CSA-C22.2 No. 0, "Canadian Electrical Code, Part II" (CEC). They are intended to be used at nominal system voltages of 600 V or less.

A circuit breaker and equipment ground-fault device is intended to be installed only on grounded alternating-current systems in accordance with the CEC.

(1) These devices are intended to be installed in new or existing panelboards or the like.

(2) The equipment ground-fault protection trip level is marked on the devices.

(3) These devices are suitable for use on systems where the voltage does not exceed the rating on the device.

(4) A two-wire device is not suitable for use in a multiwire branch circuit as defined in the CEC.

(5) These devices are marked so that they can be distinguished from a circuit breaker and ground-fault circuit interrupter.

(6) These devices may have any voltage rating that is acceptable for a circuit breaker.

RELATED PRODUCTS

See Circuit Breakers, Molded Case and Circuit-breaker Enclosures Certified for Canada (DIVQ7).

ADDITIONAL INFORMATION

For additional information, see Circuit Breakers Certified for Canada (DHJR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 5 (2002), "Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures," and CAN/CSA-C22.2 No. 144 (1991), "Ground Fault Circuit Interrupters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Circuit Breaker with Equipment Ground Fault Protection" (or "C.B. W/EQ.GFP").

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FUSED CIRCUIT BREAKERS CERTIFIED FOR CANADA (DIYV7)

USE AND INSTALLATION

This category covers fused circuit breakers designed to provide service-entrance, feeder or branch-circuit protection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." They are rated 600 V or less.

These fused circuit breakers are intended for use with certified enclosures, or as part of other certified equipment, or without enclosures where applicable.

Fused circuit breakers include all the mechanical features of molded-case circuit breakers and, in addition, have one or more replaceable current limiters or fuses that function to increase the fault-current interrupting ability. They are intended to be used in the same manner as other circuit breakers when installed at the service and as branch-circuit protection and are intended to be mounted in certified enclosures. Fused circuit breakers are identified with respect to their performance characteristics as either Type 1 or Type 2.

Type 1 fused circuit breakers meet all performance requirements of molded-case circuit breakers. The fuse, fuses, or replaceable current limiters function only to extend the fault-current interrupting rating beyond the short-circuit test requirement applicable. Type 1 devices are limited to constructions that are designed to accommodate and coordinate with fuses or replaceable current limiters having high interrupting-capacity ratings.

Type 2 fused circuit breakers use a fuse, fuses or current limiters so coordinated that they function at currents below those specified in short-circuit test requirements. Except for this feature of short-circuit operation, Type 2 fused circuit breakers meet all requirements applicable to molded-case circuit breakers and, in addition, are required to clear circuits up to

Fused Circuit Breakers Certified for Canada (DIYV7)−*Continued*

and including 25 times their amp rating, and circuits of 1000 A or less regardless of amp rating, without causing operation of the fuse, fuses or current limiters that are a part of the device. Type 2 devices are limited to constructions designed to accommodate and coordinate with fuses having high interrupting-capacity ratings.

RELATED PRODUCTS

See Circuit Breakers, Molded Case and Circuit-breaker Enclosures Certified for Canada (DIVQ7).

ADDITIONAL INFORMATION

For additional information, see Circuit Breakers Certified for Canada (DHJR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 5 (2002), "Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fused Circuit Breaker" or "Fused Circuit Breaker Frame."

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CIRCUIT BREAKER AND GROUND-FAULT CIRCUIT INTERRUPTERS CERTIFIED FOR CANADA (DKUY7)

USE AND INSTALLATION

This category covers combination circuit breaker and ground-fault circuit interrupter (GFCI) devices designed to serve the dual function of providing overcurrent protection, and protection against shock hazard, as required by CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

A circuit breaker and ground-fault circuit interrupter is intended to be installed only on grounded 60 Hz alternating-current systems in accordance with the CEC.

These devices are intended to be installed in new or existing service equipment, panelboards, and the like.

GFCIs are intended to be used only in electrical circuits where one of the conductors if solidly grounded.

Class A GFCIs are intended to provide protection from electric shock as specified the CEC.

A two-wire device is not suitable for use in a multiwire branch circuit as defined in the CEC.

Some devices rated 120/240 V do not have a load neutral wire connector and are intended for use with 208 V or 240 V loads only.

RELATED PRODUCTS

See Circuit Breakers, Molded Case and Circuit-breaker Enclosures Certified for Canada (DIVQ7).

ADDITIONAL INFORMATION

For additional information, see Circuit Breakers Certified for Canada (DHJR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 5 (2009), "Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures," and CSA-C22.2 No. 141.1 (2006), "Ground-Fault Circuit-Interrupters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Circuit Breaker and Ground-fault Circuit Interrupter" (or "C.B./GFCI").

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CIRCUIT BREAKERS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (DKPA7)

This category covers circuit breakers of the manually operable, air-break type, providing automatic overcurrent protection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." These circuit breakers and circuit breaker enclosures are intended for use only with copper conductors.

BRANCH CIRCUIT AND SERVICE CIRCUIT BREAKERS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (DKPN7)

USE

This category covers enclosed circuit breakers and circuit breaker enclosures designed to provide service-entrance, feeder or branch-circuit protection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." These circuit breakers are designed to carry rated current at ambient temperature of 40°C or less and are marked "40C."

These circuit breakers are open type and intended to operate within flameproof enclosures, or enclosed flameproof circuit breakers having increased safety "e" terminals for mounting within increased safety "e" enclosures or panelboards, or as part of other certified equipment having a type of protection suitable for the intended location. Increased safety terminals are intended for termination of copper conductors only.

RELATED PRODUCTS

See Circuit Breakers Certified for Canada (DHJR7).

ADDITIONAL INFORMATION

For additional information, see Circuit Breakers for Use in Zone Classified Hazardous Locations Certified for Canada (DKPA7) and Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 5 (2002), "Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Branch Circuit Breaker for Use in Hazardous Locations" or "Service Circuit Breaker for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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CIRCUIT BREAKERS AND METAL-CLAD SWITCHGEAR OVER 600 VOLTS CERTIFIED FOR CANADA (DLAH7)

GENERAL

This category covers indoor and outdoor enclosed assemblies of switchgear devices, such as switches, interrupting devices, circuit breakers, and control, metering, protective and regulating equipment with associated interconnections and supporting structure, in nominal voltages above 600 V through 46 kV ac. These devices are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," in unclassified locations, for controlling and protecting the power from generators and other sources of electrical energy.

These switchgear assemblies are completely enclosed on all sides and top with sheet metal (except for ventilation openings and inspection windows) and may contain the following: (1) circuit breakers, (2) insulated busbars and connections, (3) instrument and control power transformers, (4) instruments, meters and relays, and (5) control wiring and accessory devices.

CIRCUIT BREAKERS

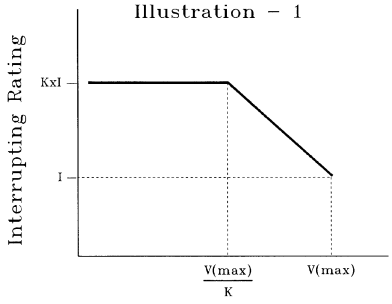
The circuit breakers are three-pole devices of the draw-out type, are trip-free and may be either air-break or vacuum-type devices.

Circuit-breaker Ratings

Each circuit breaker is provided with a marking that indicates the voltage and current ratings for both the close and trip coils. This marking also contains a "close-and-latch" rating in kiloamperes that is equivalent to the momentary rating (maximum asymmetrical current rating) of the circuit breaker. This rating is expressed in rms asymmetrical amps. Circuit breakers have a rated maximum voltage of 4.76, 8.25, 15, 27 or 38 kV with continuous current ratings of 1200, 2000 or 3000 A.

Circuit breakers are marked with an interrupting rating "I" in rms symmetrical amps that is applicable at the maximum rated voltage. Circuit breakers using the rating structure of ANSI/IEEE C37.06 (1987), "AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis – Preferred Ratings and Related Required Capabilities," are also provided with a "K" factor for determining the interrupting rating at a use voltage lower than the maximum rated voltage. The circuit breaker may interrupt a current greater than "I" by a factor up to the value of "K," at a voltage reduced from the maximum rated voltage, "V Max" by the same factor, or at a lower voltage, as depicted in Illustration 1. Circuit breakers using the rating structure of ANSI/IEEE C37.06 (1997) or later do not have a "K" factor, or are marked with a "K" factor of 1.0.

Illustration – 1



Unless specifically marked otherwise, these circuit breakers are intended for use on three-phase circuits where the nominal voltage-to-ground is 0.58 times the line-to-line voltage.

The circuit breakers are contained in individual grounded metal compartments.

Generator Circuit Breakers

Generator circuit breakers are rated on a symmetrical current basis and intended for installation in metal-clad switchgear between the generator and the transformer terminals. They are intended for use with generators and transformers rated between 10 and 100 MVA.

Generator circuit breakers are marked with:

- Manufacturer's name, type designation and serial number
- Year of manufacture
- Rated frequency
- Continuous current
- Maximum voltage
- Full wave impulse withstand voltage
- Short-circuit duty cycle
- Short-circuit current
- DC component (in percentage of peak value of the rated short-circuit current)
- Close, latch and carry current
- Short-time current
- Out-of-phase current
- Interruption time

METAL-CLAD SWITCHGEAR

These switchgear assemblies may consist of a single vertical section housing one or more individual circuit-breaker compartments or auxiliary compartments, along with the associated busbar structure, or may consist of several abutting sections interconnected by horizontal buses.

These switchgear assemblies are marked with the following: rated maximum voltage, rated frequency, rated insulation level, and rated continuous current.

In addition, a single line diagram is marked on each assembly to indicate (1) the maximum available short-circuit capacity of the system(s) to which the assembly may be connected, (2) whether the assembly is for indoor or outdoor use, (3) whether accessibility from the rear, side, top or ends is required for installation, and (4) the suitability of the equipment for mounting over combustible surfaces.

Circuit breakers used in these switchgear assemblies are suitable for continuous use at 100% of their continuous current rating.

The marking "Suitable for Use as Service Equipment" appears on each switchgear section or assembly optionally intended for use at a service.

A switchgear section marked for use at services may also be used to provide the main control and means of cutoff for a separately derived system.

Generally this switchgear is shipped without wire connectors and the busbar terminations are provided with standard bolt-hole patterns. The suitability of the wire connectors installed must be determined by Authorities Having Jurisdiction at the time of final inspection.

A switchgear section investigated to determine if it is rainproof is marked "Rainproof."

The individual circuit-breaker compartments are intended to accommodate a circuit breaker and are marked to indicate the type(s) of circuit breaker that may be installed.

Individual auxiliary compartments are intended to house control components such as meters, instrument and/or control power transformers, and the like.

Switchgear assemblies are generally provided with shop drawings or the like that include circuit and connection diagrams of the assembly, continuous current ratings of the main and section details of control and ground-fault protection (if provided) circuits, etc.

ARC-RESISTANT SWITCHGEAR

Metal-clad switchgear specially designed to provide some degree of protection to an operator, or other personnel in the vicinity of the equipment, from the effects of an internal arc occurring in atmospheric air within the enclosure when the doors and covers that are secured as intended may additionally be Classified as arc-resistant switchgear.

Arc-resistant switchgear has been investigated for installation in buildings (for indoor applications) that have sufficient overhead space to permit venting without reflecting arc products, as specified in the installation instructions.

Arc-resistant switchgear is marked with an Accessibility Type designation based upon the construction. The Types may be either A, B or C, based upon the construction.

Type A designates switchgear with arc-resistant construction at the front only.

Type B designates switchgear with arc-resistant construction at the front, back and sides.

Type C designates switchgear with arc-resistant construction at the front, back and sides and between compartments within the same cell or adjacent cells.

In Type C equipment, a fault in a main busbar compartment may propagate into the main busbar compartments of adjacent feeder cells.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 31 (2004), "Switchgear Assemblies."

Additional standards used to investigate products in this category are:

IEEE C37.20.2 (1999), "IEEE Standard for Metal-Clad Switchgear"

ANSI/NEMA C37.54 (2002), "Indoor Alternating Current High-Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear – Conformance Test Procedures"

ANSI/NEMA C37.55 (2002), "Switchgear – Medium Voltage Metal-Clad Assemblies – Conformance Test Procedures"

Circuit breakers investigated prior to 2002 were investigated to ANSI C37.54 (1987).

The basic standard used to investigate switchgear Classified as "arc resistant" is EEMAC G14-1 (1987), "Procedure for Testing the Resistance of Metal-Clad Switchgear Under Conditions of Arcing Due to an Internal Fault."

Additional standards used to investigate generator circuit breakers in this category are ANSI/IEEE C37.013 (1997), "AC High-Voltage Generator Circuit Breakers Rated on a Symmetrical Current Basis," and ANSI/IEEE C37.013A (2007), "AC High-Voltage Generator Circuit Breakers Rated on a Symmetrical Current Basis – Amendment 1: Supplement for Use with Generators Rated 10 – 100 MVA."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Medium Voltage AC Power Circuit Breaker" or "Metal-clad Switchgear."

The Listing Mark for metal-clad switchgear sections also includes the marking "____ of ____." The first blank is stamped with a number indicating the position that the section occupies in the series of sections constituting the switchgear assembly. The second blank is stamped with the total number of sections in the switchgear assembly. Only those sections and compartments that bear the Listing Mark are covered under UL's Follow-Up Service.

Classification Mark for Arc-resistant Switchgear

The Classification Mark of UL on switchgear investigated as arc resistant is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark consists of the appropriate Listing Mark noted above and the following additional information:

ARC RESISTANT SWITCHGEAR
IN ACCORDANCE WITH
[standard designation and date]

The Classification Mark appears on the front of each vertical section eligible for Classification. The Classification Mark covers only the vertical section to which it is affixed; it does not cover other vertical sections included in the assembly, or the removable circuit breaker. Each vertical section of a line-up of abutting vertical sections is provided with a "____ of ____" marking where the second blank indicates the total number of vertical sections (including sections not bearing the UL Mark) and the first blank indicated the position (from left to right) of the vertical section bearing the UL Mark.

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CLEANING MACHINES CERTIFIED FOR CANADA (DMDT7)

This category covers household and commercial dishwashers, motor-operated cleaning machines, electrically-operated high-pressure cleaning machines, vacuum cleaning machines and blower cleaners.

Appliances specified as double insulated are constructed with a special insulating system in lieu of grounding. Such appliances are distinctively marked "Double-Insulated or Double Insulation."

In cases where the nature or construction of the equipment is such that precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installation or use, suitable warnings are marked on the equipment.

Those cleaning machines which have been found suitable for installation outdoors, or with sections exposed outdoors, are so indicated on the equipment.

The burglary and theft protection features of the coin-operated machines have not been investigated.

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CLEANING MACHINES, MOTOR OPERATED CERTIFIED FOR CANADA (DMGK7)

USE

This category covers cleaning machines of the motor-operated type for household and commercial use. Products employing liquid cleaning agents are intended for use with water-based (nonflammable) cleaners.

FACTORS NOT INVESTIGATED

Any health hazards that may be associated with the use of these cleaning machines, such as removal of pathological, chemical, physical, radioactive, or other contaminating agents, have not been investigated.

RELATED PRODUCTS

This category does not cover dishwashers, high-pressure cleaning machines, vacuum cleaning machines, blower cleaners, or cleaning machines of the heating type for household and commercial use. See Dishwashers, Commercial Certified for Canada (DMGR7), Dishwashers, Household Certified for Canada (DMIY7), High-pressure Cleaning Machines, Electrically Operated Certified for Canada (DMKK7), Vacuum Cleaning Machines and Blower Cleaners Certified for Canada (DMLW7) and Heaters, Specialty Certified for Canada (KSOT7) for details on these types of cleaning machines.

ADDITIONAL INFORMATION

For additional information, see Cleaning Machines Certified for Canada (DMDT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Cleaning Machines, Motor Operated Certified for Canada (DMGK7)−*Continued*

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

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DISHWASHERS, COMMERCIAL CERTIFIED FOR CANADA (DMGR7)

USE

This category covers commercial, freestanding, undercounter, and counter-insert dishwashers using water as the principal cleaning medium. Commercial dishwashers may be provided with electric heaters, natural or LP-gas equipment or low-pressure steam equipment for water heating. The water is heated in open (atmospheric pressure) tanks.

These dishwashers are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Commercial dishwashers are intended for use in commercial establishments, such as kitchens of restaurants, bars and hospitals, where they are not to be accessible to the public.

REBUILT PRODUCTS

This category also covers commercial dishwashers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt commercial dishwashers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt commercial dishwashers are subject to the same requirements as new commercial dishwashers.

RELATED PRODUCTS

See Dishwashers, Household Certified for Canada (DMIY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z83.21/CSA-C22.2 No. 168, "Commercial Dishwashers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Refurbished" or "Remanufactured" precedes the product name.

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DISHWASHERS, HOUSEHOLD CERTIFIED FOR CANADA (DMIY7)

USE AND INSTALLATION

This category covers household dishwashers intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Household dishwashing machines may be of the cord-and-plug-connected or the permanently connected type.

An undercounter unit may not have a complete enclosure; the unit is intended to be installed beside kitchen cabinets, and an enclosure is to be provided at installation. Such units are so marked.

Some cord-and-plug-connected units are suitable for field conversion to permanently connected installation; conversion instructions are provided with the conversion parts kit.

Dishwashers, Household Certified for Canada (DMIY7)−*Continued*

Some permanently connected-type dishwashers may be converted to cord connection by means of a cord kit that is available from the manufacturer of the dishwasher.

REBUILT PRODUCTS

This category also covers household dishwashers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt household dishwashers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt household dishwashers are subject to the same requirements as new household dishwashers.

RELATED PRODUCTS

For commercial dishwashers, see Dishwashers, Commercial Certified for Canada (DMGR7).

Products Verified for energy efficiency are covered under Dishwashers, Household Verified for Energy Efficiency (ZYHZ).

ADDITIONAL INFORMATION

For additional information, see Cleaning Machines Certified for Canada (DMDT7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 167, "Household Dishwashers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

* *

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HIGH-PRESSURE CLEANING MACHINES, ELECTRICALLY OPERATED CERTIFIED FOR CANADA (DMKK7)

USE

This category covers electrically operated, high-pressure cleaning machines in which the discharge line is hand-supported and manipulated, for household and commercial use. The products may use either hot or cold water, and they may be portable, stationary or fixed.

Products used with liquid cleaning agents are intended for water-based (nonflammable) cleaners.

FACTORS NOT INVESTIGATED

Any health hazard that may be associated with the use of these cleaning machines, such as dispersion of pathological, chemical, physical, radioactive, or other contaminating agents has not been investigated.

RELATED PRODUCTS

Fuel-engine-driven, high-pressure cleaning machines are covered under High-pressure Cleaning Machines, Engine Driven Certified for Canada (DNZW7).

Electrically operated, high-pressure cleaning machines provided with steam-cleaning features, where the steam cleaner is the appliance's primary function, are covered under Heaters, Specialty Certified for Canada (KSOT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

Electrically operated, high-pressure cleaning machines provided with steam-cleaning features, where the high-pressure cleaning function is the appliance's primary function, are additionally investigated to CSA-C22.2 No. 64, "Household Cooking and Liquid-Heating Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory)

High-pressure Cleaning Machines, Electrically Operated Certified for Canada (DMKK7)−*Continued*

together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

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VACUUM CLEANING MACHINES AND BLOWER CLEANERS CERTIFIED FOR CANADA (DMLW7)

GENERAL

This category covers coin-operated vacuum cleaners and motor-operated vacuum cleaners and blower cleaners intended for household and commercial (industrial) use. Products intended for household use only are so marked. Attachments packaged with the products or indicated in the instruction manual packaged with the product are also covered under this category.

Central vacuum cleaners are intended for installation as part of a permanent central suction system in a building. Since they are intended for remote operation, they incorporate suitable overcurrent protection.

This category also covers household vacuum cleaners provided with a steam-cleaning feature, where the vacuum cleaner is the appliance's primary function.

This category also covers electrified wall inlet valve assemblies for use in central vacuum cleaning systems. The assemblies are shipped as a kit comprised of the mounting plate/rough-in box and cover plate. The cover plate identifies the appropriate hoses and nozzles certified for use with the valve. The assembly bears the Certification Mark.

REBUILT PRODUCTS

This category also covers vacuum cleaners that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt vacuum cleaners are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt vacuum cleaners are subject to the same requirements as new vacuum cleaners.

FACTORS NOT INVESTIGATED

Any health hazards that may be associated with the use of vacuum cleaners or combination blower and vacuum cleaners, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents have not been investigated.

RELATED PRODUCTS

Steam-cleaning machines with vacuum-cleaning features, where the steam cleaner is the appliance's primary function, are covered under Heaters, Specialty Certified for Canada (KSOT7).

ADDITIONAL INFORMATION

For additional information, see Cleaning Machines Certified for Canada (DMDT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 243, "Vacuum Cleaners, Blower Cleaners and Household Floor Finishing Machines."

Industrial- and commercial-use wet and dry vacuums, including power brushes, are investigated to CSA-C22.2 No. 243, or CAN/CSA-E60335-1/4E, "Household and Similar Electrical Appliances – Safety – Part 1: General Requirements," and CAN/CSA-E60335-2-69, "Safety of Household and Similar Electrical Appliances – Part 2: Particular Requirements for Wet and Dry Vacuum Cleaners, Including Power Brush, for Industrial and Commercial Use."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

For rebuilt products the word "Rebuilt," "Refurbished" or "Remanufactured" precedes the product name.

* *

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CLEANING MACHINES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (DMRR7)

GENERAL

This category covers portable vacuum cleaners provided with special suction attachments, such as crevice tools, brushes, etc., intended to facilitate cleaning operations.

Some vacuum cleaners are designed specifically to pick up water in connection with floor-scrubbing operations; such cleaners are so indicated in the individual certifications.

Connections to supply lines require the use of receptacles with plugs, or receptacles with plugs interlocked with snap switches or their equivalent, certified for the specified hazardous locations. The flexible cord connected to the units should be frequently inspected and replaced when necessary. Terminal connections should be properly made and maintained.

Authorities Having Jurisdiction should be consulted with regard to the conditions under which these portable devices will be permitted for use. It is recognized that portable equipment should be used only when necessary.

ADDITIONAL INFORMATION

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 243 (1991), "Vacuum Cleaning Machines and Blower Cleaners."

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 145 (1986), "Motors and Generators for Use in Hazardous Locations," in addition to the hazardous (classified) locations standards referenced in Equipment for Use in and Relating to Class I, II and III, Division I and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cleaning Machine for Use in Hazardous Locations."

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CLEANING MACHINES CERTIFIED FOR CANADA (DNEZ7)

This category covers commercial-use internal-combustion-engine-powered or electric-battery-powered cleaning machines, such as sweepers, scrubbers, floor maintenance machines, and high-pressure cleaning machines.

BATTERY-POWERED ELECTRIC CLEANING MACHINES CERTIFIED FOR CANADA (DNSX7)

Listing of the following battery operated electric cleaning machines signifies that the fire hazard incident to their use in ordinary locations, has been reduced to an acceptable degree. No tests have been conducted to determine their suitability for use in hazardous locations as defined by the Canadian Electrical Code.

Electric battery powered cleaning machines are designated Type E, EE or ES.

Type E Cleaning Machines Certified for Canada (DOGV7)

GENERAL

This category covers electric-battery-powered cleaning machines having minimum acceptable safeguards against fire hazards.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

Type E Cleaning Machines Certified for Canada (DOGV7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583 (1974), ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power-operated Cleaning Machine, Type E.''

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Type EE Cleaning Machines Certified for Canada (DOUT7)

GENERAL

This category covers electric-battery-powered cleaning machines provided with safeguards in addition to minimum acceptable safeguards against fire hazards. On Type EE cleaning machines electric motors and other electrical equipment, such as resistors and contactors, are completely enclosed.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583 (1974), ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Cleaning Machine Type EE.''

* *

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Type ES Cleaning Machines Certified for Canada (DPBS7)

GENERAL

This category covers electric-battery-powered cleaning machines provided with safeguards in addition to minimum acceptable safeguards against fire hazards. On Type ES cleaning machines, barriers are provided to restrict the entrance of combustible flyings into electrical enclosures, and to guard against the emission of flame and molten metal during potential internal fault conditions.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583 (1974), ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Cleaning Machine, Type ES.''

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HIGH-PRESSURE CLEANING MACHINES, ENGINE DRIVEN CERTIFIED FOR CANADA (DNZW7)

USE AND INSTALLATION

This category covers high-pressure cleaning machines in which the discharge line is hand-supported and manipulated, driven by gasoline-, LP-gas-, or diesel-fueled internal-combustion engines. These machines may be hot- or cold-water types for portable, stationary or fixed installations.

RELATED PRODUCTS

Electrically operated, high-pressure cleaning machines that use water as the cleaning agent for household and commercial use are covered under High-pressure Cleaning Machines, Electrically Operated Certified for Canada (DMKK7).

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-B140.11 (1989), ''Oil/Gas-Fired Commercial/Industrial Pressure Washers and Steam Cleaners.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''High-pressure Cleaning Machine,'' or other appropriate product name as shown in the individual Listings.

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INTERNAL-COMBUSTION-ENGINE-POWERED CLEANING MACHINES CERTIFIED FOR CANADA (DPIR7)

These machines are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these machines should conform to the requirements of Authorities Having Jurisdiction.

Fire hazard incident to use of fuel, electrical and exhaust systems have been investigated.

Internal combustion engine-powered cleaning machines are designated Type D, DS, G, GS, LP or LPS.

Type D Cleaning Machines Certified for Canada (DPPQ7)

USE

This category covers diesel-engine-powered cleaning machines having minimum acceptable safeguards against inherent fire hazards.

These machines are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these machines should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558 (1975), ''Guide for the Investigation of Internal Combustion Engine Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power-operated Cleaning Machine, Type D.''

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Type DS Cleaning Machines Certified for Canada (DPSU7)

USE

This category covers diesel-engine-powered cleaning machines with fuel, electrical and exhaust systems provided with safeguards in addition to those required for Type D cleaning machines.

These machines are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these machines should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558 (1975), ''Guide for the Investigation of Internal Combustion Engine Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Cleaning Machine Type DS.''

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Type G Cleaning Machines Certified for Canada (DPVZ7)

USE

This category covers gasoline-engine-powered cleaning machines having minimum acceptable safeguards against inherent fire hazards.

These machines are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these machines should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558 (1975), ''Guide for the Investigation of Internal Combustion Engine Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Cleaning Machine Type G.''

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Type GS Cleaning Machines Certified for Canada (DPZT7)

USE

This category covers gasoline-engine-powered cleaning machines with fuel, electrical and exhaust systems provided with safeguards in addition to those required for Type G cleaning machines.

These machines are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these machines should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558 (1975), ''Guide for the Investigation of Internal Combustion Engine Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Type GS Cleaning Machines Certified for Canada (DPZT7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Cleaning Machine Type GS.''

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Type LP Cleaning Machines Certified for Canada (DQCY7)

USE

This category covers liquefied petroleum gas (LP-gas) engine-powered trucks having minimum acceptable safeguards against inherent fire hazards.

These machines are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these machines should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558 (1975), ''Guide for the Investigation of Internal Combustion, Engine Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Cleaning Machine Type LP.''

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Type LPS Cleaning Machines Certified for Canada (DQGS7)

USE

This category covers liquefied petroleum gas (LP-gas) engine-powered cleaning machines with fuel, electrical and exhaust systems provided with safeguards in addition to those required for Type LP cleaning machines.

These machines are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these machines should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558 (1975), ''Guide for the Investigation of Internal Combustion Engine Powered Industrial Trucks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Cleaning Machine Type LPS.''

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CLOCKS, HOUSEHOLD CERTIFIED FOR CANADA (DROX7)

USE

This category covers electrically operated clocks intended for household use and installation.

RELATED EQUIPMENT

The following products are covered under Time-indicating and -Recording Appliances Certified for Canada (XHNR7): Electrically operated clocks that form parts of a master clock system; secondary, cost, payroll, and other clocks intended primarily for industrial and commercial installations; time stamps, job-card recorders, timers, and similar time-indicating and -recording appliances.

Clock-operated switches designed to close and open circuits to a load at predetermined intervals are covered under Switches, Clock Operated Certified for Canada (WGZR7).

Clocks that include a radio, CD player, or other audio/video functions are covered under Audio/Video Apparatus Certified for Canada (AZSQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Clock,'' ''Household Clock'' or ''Clock Movement,'' or other appropriate product name as shown in the individual Listings.

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CLOSED-CIRCUIT TELEVISION EQUIPMENT CERTIFIED FOR CANADA (DRQH7)

USE AND INSTALLATION

This category covers video products intended for commercial use and which produce signals and/or distribute signals within a closed-circuit system. Examples of such products are video tape recorders; video disc recorders; video-receiving, -processing, -recording, and -amplification equipment; video cameras, and the like intended for use in closed-circuit video systems, as well as power supplies intended for use with closed-circuit television products.

This category covers auxiliary and accessory equipment including pan-and-tilt units, wall-mounting brackets, console enclosures, and racks intended for use with closed-circuit video equipment.

This category also covers portable closed-circuit video equipment intended for use with a vehicular, marine, or any other battery circuit as the power-supply means.

Many of these video products require special installation such as a separate transformer, power supply, special grounding methods, special mounting, special cable construction, or interconnection between units by means of one or more of such features are covered in the manufacturer's installation instructions.

Information concerning field-wiring connections, mounting location, mounting method, clearances, etc., is marked on the unit or specified in the installation instructions accompanying the unit.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, ''Audio, Video and Similar Electronic Equipment,'' or CAN/CSA-C22.2 No. 60065 (2003), ''Audio, Video and Similar Electronic Apparatus.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest shipping carton is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes

the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Commercial CCTV Equipment,'' ''Commercial CCTV Product,'' ''Commercial CCTV Video Equipment,'' ''Commercial CCTV Video Product,'' or other appropriate product name as shown in the individual Listings, prefixed by ''Commercial'' or ''Commercial Use.''

Equipment rack systems consist of an equipment rack and one or more audio or video components such as video tape recorders, mixers, multiplex units and similar equipment. Components investigated for use in this rack are either provided with their own Listing Mark or are identified by type and model number on a tag permanently secured to the rack at the factory by the manufacturer.

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COIN AND CURRENCY CHANGERS AND ACTUATORS CERTIFIED FOR CANADA (DUCU7)

GENERAL

This category covers electrically-operated control mechanisms that receive coins, currency, credit cards, debit cards or tokens to select prices, accumulate credits, store coins or currency, give change or initiate a vend cycle for an appliance, or combinations of these functions.

This equipment is rated 250 V or less, single-phase, and may be either cord or permanently connected to the source of supply in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and CAN/CSA-C22.2. No. 0, ''General Requirements – Canadian Electrical Code, Part II.''

The burglary and theft protection on features of these mechanisms have not been investigated unless specifically indicated in the individual certifications.

This category does not cover (1) equipment that vends a service or product, (2) coin and currency sorting, packing or counting equipment, and (3) clock-operated, coin-operated mechanisms.

REBUILT PRODUCTS

This category also covers coin and currency changers and actuators that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt coin and currency changers and actuators are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt coin and currency changers and actuators are subject to the same requirements as new coin and currency changers and actuators.

PRODUCT MARKINGS

These products are marked with the manufacturer's name, model number and electrical rating.

Coin and currency changers and actuators intended for outdoor use are so marked.

RELATED PRODUCTS

Clock-operated, coin-operated mechanisms are covered under Switches, Clock Operated Certified for Canada (WGZR7).

Coin-operated vending appliances are covered under Vending Machines, Refrigerated Certified for Canada (SQMX7) and Vending Machines Certified for Canada (YWXV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 128, ''Vending Machines.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Coin Changer,'' ''Currency Changer,'' ''Coin and Currency Changer,'' ''Money Changer,'' or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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COLD CATHODE TRANSFORMERS AND POWER SUPPLIES CERTIFIED FOR CANADA (DUEC7)

USE

This category covers indoor and outdoor use cold cathode transformers and power supplies for use as part of a cold cathode electric discharge lighting system, sign, field-assembled skeletal neon sign and outline lighting system, or field-installed neon outline lighting system.

These transformers and power supplies have been investigated for secondary-circuit ground fault protection.

Cold cathode transformers and power supplies are intended for use in or with electric signs and outline lighting within the scope of CAN/CSA-C22.2 No. 207 (1989), "Portable and Stationary Electric Signs and Displays," and for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

PRODUCT MARKINGS

Transformers and power supplies covered under this category are marked "Indoors," "Outdoors," "Weatherproof" or "WP." Products marked "Indoors" are only suitable for use indoors, and products marked "Outdoors" are suitable for use indoors or outdoors sheltered from rain, snow and the like by being located within a sign body, enclosure and the like. Products marked "Weatherproof" or "WP" do not need to be additionally sheltered from rain, snow and the like.

Transformers and power supplies covered under this category are marked with a Type number from 2 to 4 in association with the location designation "Indoors," "Outdoors," "Weatherproof" or "WP." These Type numbers identify particular construction features associated with a particular transformer or power supply as identified below:

Type 2 – Neon supply with input and output terminals or leads that should be enclosed in accordance with the CEC.

Type 3 – Neon supply with input terminals or leads enclosed and intended for connection to a permanent wiring system, and with output terminals or leads that should be enclosed in accordance with the CEC.

Type 4 – Neon supply with input and output terminals or leads enclosed and intended for connection to a permanent wiring system.

These Type designations do not relate in any way to general enclosure designations as noted in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Transformers and power supplies are also marked with a model designation and may be marked with an optional designation 2161HX, 2161KX, 2161MH or 2161WX. The optional designations provide information on the construction of the transformer and power supply for sign manufacturers and installers to use for ordering and replacement purposes.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 13 (Section A), "Transformers for Luminous-Tube Signs."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cold Cathode Transformer" or "Cold Cathode Power Supply."

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COMBUSTION-DETECTION EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (DUFK7)

USE

This category covers electronically operated combustion detectors intended for use on gas- or oil-burning equipment.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Combustion Detection Equipment for Use in Hazardous Locations" or "Combustion Detector for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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COMMUNICATIONS-CIRCUIT ACCESSORIES CERTIFIED FOR CANADA (DUXR7)

GENERAL

This category covers devices intended for use in residential or commercial communications-station applications for connections to the telephone communication loop circuits. The individual certifications describe the intended location of these devices, either 1) on the equipment side or 2) on the outside plant side of a primary protector for communications circuits (see QVGV7).

The term "equipment side" indicates that the communications-circuit accessory may only be employed on that portion of the loop circuit protected by a primary protector for communications circuits (see QVGV7).

The term "outside plant," as defined in ANSI/IEEE 100 (1984), "The Authoritative Dictionary of IEEE Standards Terms," is "that part of the plant extending from the line side of the main distributing frame to the line side of the station or PBX protector or connecting block, or to the line side of the main distributing frame in another office building." The "outside plant" side is not protected by a primary protector.

Accessory units may also provide features relating to the communications circuit without accessorizing the communications-protector function. Examples of accessories are RJ-type jacks and plugs, quick-connect terminal assemblies, telephone wall plates, telephone extension cords, cross-connect terminal blocks, MTU modules, terminal enclosures, network interface devices (NIDs) (excluding complex interface devices, such as fiber optic and broadband subscriber interface units), wire-guide assemblies and connector blocks.

INSTALLATION INSTRUCTIONS

In certain applications, communications-circuit protectors are not required because there is no exposure to accidental contact with electric light or power conductors as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Accordingly, those products normally used only on the equipment side of a primary protector may be used without the protector. Products intended for this application are identified in the individual certifications and the installation documentation.

RELATED EQUIPMENT

Other telecommunications appliances and equipment are covered under Telephone Appliances and Equipment Certified for Canada (WYQQ7), Telephones, Cellular Certified for Canada (WYLR7) or Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Modular assemblies of telecommunications equipment (e.g., racks, circuit card assemblies) that are designed for field installation by trained service personnel are covered under Custom-built Telecommunications Equipment Certified for Canada (WYKM7).

Equipment intended to be installed on the network side of the subscriber demarcation point and installed and maintained by telephone companies, CATV companies and similar network communications companies is covered under Communications Service Equipment Certified for Canada (DUZO7).

Cabinet, enclosure and rack/frame systems that are not complete information technology (IT) or telecommunications equipment, but include components and assemblies that are intended to power, protect, heat, cool or otherwise support IT or telecommunications equipment that will be

installed at a later time are covered under Information Technology and Telecommunications Equipment Cabinet, Enclosure and Rack Systems Certified for Canada (NWIN7).

Power distribution centers for communications equipment are covered under Power Distribution Centers for Communications Equipment Certified for Canada (QPQY7).

Power supplies for information technology and telecommunications equipment are covered under Power Supplies, Information Technology Equipment Including Electrical Business Equipment Certified for Canada (QQGQ7) and Power Supplies, Telephone Certified for Canada (QQJE7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 182.4 (1990), "Plugs, Receptacles and Connectors for Communication Systems," and CAN/CSA-C22.2 No. 233 (1989), "Cords and Cord Sets for Communication Systems."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Communications-circuit Accessory" (or "Comm Ckt Acc"), or other appropriate product name as shown in the individual Listings.

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COMMUNICATIONS SERVICE EQUIPMENT CERTIFIED FOR CANADA (DUZO7)

GENERAL

This category covers communications service equipment intended to be installed on the network side of the subscriber demarcation point, up to and including the subscriber interface unit (SIU), network interface unit (NIU), or network interface device (NID). This equipment is intended to be installed and maintained by telecommunications companies, CATV companies, and similar network communications companies which provide public telecommunications, CATV, or other network services to subscriber premises. As appropriate, this equipment is to be installed in accordance with Sections 16, 54, 56 and 60 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and the applicable Standards and Sections of Part III of the CEC.

This equipment may or may not incorporate primary protection for communications circuits, or have provision for the installation of a Listed primary protector. This information is specified in the individual Listings for the equipment. Primary protectors are intended to suppress abnormal voltage conditions that may exist on the circuit due to accidental contact with electrical light and power conductors operating at over 300 V to ground as defined in Section 60 of the CEC. These devices may also be used to protect against electrical transients from electromagnetic disturbances or higher than normal voltages induced on the network circuits due to close proximity of the protected circuit to electric light or power conductors.

Primary protection is identified as "provided" when primary protection is built into the equipment, "compatible" when the equipment has provision for the installation of a Listed primary protector, or "none" when there are no provisions for a primary protector. Where applicable, compatible primary protector designations are either marked on the equipment or included on the individual product data sheet.

Primary protector fusing information identifies whether the primary protector is integrally "fused" (a "fused primary protector") or if a fusing wire is to be provided (a "fuseless primary protector"). Where a fusing wire is required, the maximum size fusing wire to be used in series with the equipment is indicated by the following alphabetical designations:

A — 24 AWG copper wire with thermoplastic insulation
B — 22 AWG copper wire with thermoplastic insulation
C — 20 AWG, 40% copper-clad wire
D — 26 AWG copper wire with thermoplastic insulation

Equipment intended to connect a shielded cable drop and/or incorporating a primary protector is provided with an appropriately sized grounding terminal.

Requirements for the location and installation of equipment incorporating primary protectors and provisions for cable grounding are provided in Sections 16, 54, 56 and 60 of the CEC.

Unless marked "indoor use only," this equipment has been judged suitable for indoor and outdoor use and provides basic protection against rain and corrosion. Equipment that provides a degree of protection against more severe environmental conditions, such as wind-blown dust and rain, icing, splashing water, immersion, etc., is marked with an enclosure type designation and provides a degree of protection as indicated in Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Except for **OTHER EQUIPMENT** identified with a specific temperature range, outdoor equipment has been investigated over a temperature range of -40C to +46C. The effects of insolation (solar loading) have also been considered.

Where indicated by a "WARNING" marking on the interface unit, the cable drop may supply Class 2 power with a voltage up to 100 V to the interface. For such installations, the cable drop should be located, routed, or protected so that it is not exposed to touch by persons, or appropriate cable constructions or other means suitable for the installation should be provided.

INTERFACE EQUIPMENT

A subscriber interface unit (SIU), network interface unit (NIU) or network interface device (NID) is used to provide telecommunications, CATV, and other signal information to the subscriber premises and isolation between the Class 3 power on the cable drop and the subscriber premises signal circuits. An interface may incorporate two separate compartments, one compartment for network connections and components, and another compartment for the subscriber connection terminals and standard jacks.

Each individual interface Listing provides the following information: Interface designation, primary protector provisions, compatible primary protectors, fusing information, and indoor or outdoor environmental use specifications.

Primary protector provisions and fusing information are marked on the interface.

TAP EQUIPMENT

A power-passing tap (PPT) or power-passing multi-tap (PPMT) is used to tap both signal and Class 2 power from the main utility network for the subscriber cable drop. This tap may be located on a utility pole, within a utility-owned equipment pedestal or vault, or similar location in accordance with Part III of the CEC. In addition to coupling the signal circuits from the network to the cable drop, the tap limits power on the cable drop to Class 2 Levels with a maximum voltage of 100 V. Unless otherwise noted in the individual Listings, taps using communications cable for cable drops have been investigated for subscriber cable drops not exceeding 500 ft in length.

Each individual tap Listing provides the following information: Tap designation, voltage rating, power-carrying media, primary protector provisions, compatible primary protectors, fusing information, and indoor or outdoor environmental use specification.

OTHER EQUIPMENT

Other equipment may contain features that are unique to a system or application. Information concerning special installation procedures, compatibility and other important design features are provided in the individual Listings, on product markings, on product data sheets and in utility installation practices.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 226 (1992), "Protectors in Telecommunication Networks," CAN/CSA-C22.2 No. 225 (1990), "Telephone Equipment," and CAN/CSA-C22.2 No. 950 (1995), "Safety of Information Technology Equipment, Including Electrical Business Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Subscriber Interface Unit" (or "SIU"), "Network Interface Unit" (or "NIU"), "Network Interface Device" (or "NID"), "Power Passing Tap" (or "PPT"), "Power Passing Multi-Tap" (or "PPMT") or, for other equipment, "Communication Service Equipment," with or without an appropriate product name.

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COMMUNICATIONS CABLE CERTIFIED FOR CANADA (DUZX7)

USE AND INSTALLATION

This category covers communications cable which is a single-conductor coaxial cable or a multiple-conductor jacketed cable intended for telephone and other communications circuits for use as described in Section 60 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

This cable is used as wiring from a protector to a telephone or other communications equipment within a building, and for use as interconnecting wiring between parts of a communications system.

Except for special locations specifically required by the CEC, communications cable, in general, is not required to be installed in conduit or raceway.

PRODUCT MARKINGS

Communications cable is identified by marking on the surface of the jacket or on a marker tape under the jacket. This marking includes one of the following Type designations:

CM — This cable does not spread flame to the top of the tray in the Vertical-Tray Flame Test in UL 1685, ''Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables.'' Smoke measurements are not applicable.

CMG— The damage height of this cable does not exceed 1.5 m (4 ft 11 in.) when tested in accordance with the CSA FT4/IEEE 1202 Vertical-Tray Flame Test in UL 1685 (CSA FT4 flame test). Smoke measurements are not applicable

CMP — This cable exhibits a maximum peak optical density of 0.5, a maximum average optical density of 0.15, and a maximum flame spread distance of 1.52 m (5 ft), when tested per ANSI/NFPA 262, ''Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces,'' (CSA FT-6).

CMR — The flame propagation height of this cable is less than 3.66 m (12 ft) when tested per ANSI/UL 1666, ''Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts.''

CMX — This cable complies with the VW-1 Flame Test requirements in ANSI/UL 2556, ''Wire and Cable Test Methods.'' Type CMX cable may be marked ''Outdoor'' to indicate its suitability for installation outdoors on dwellings.

CMH — This cable complies with the FT-1 Flame Test requirements in ANSI/UL 2556 (CSA FT-1 flame test).

Cable that contains one or more optical fiber members has the suffix ''-OF'' added to the above.

Cable marked ''Shielded'' contains one or more electromagnetic shields.

An FT6, FT4 or FT1 flame rating, as applicable, may be marked on the cable. Each certified cable may have any one of these ratings.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 214 (2008), ''Communications Cables.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, the reel or the smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Communications Cable.''

The Listing Mark for this category requires the use of a holographic label.

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CONDUIT AND FITTINGS CERTIFIED FOR CANADA (DWFV7)

CONDUIT AND CABLE HARDWARE CERTIFIED FOR CANADA (DWMU7)

GENERAL

This category covers conduit straps, staples, and similar types of hardware intended for installation in wiring systems in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

The mechanical strength of these products is investigated with consideration given to the intended installation. Metallic devices are also investigated for resistance to corrosion, and nonmetallic devices may be investigated for flammability and exposure to elevated or cold temperatures.

Conduit and Cable Hardware Certified for Canada (DWMU7)−*Continued*

CARTON MARKINGS

The product carton for a metallic or polymeric construction of any conduit and cable hardware that is intended for use in spaces used for environmental air is marked ''Suitable for use in other space used for environmental air in accordance with Sections 12-010(3), (4), (5) and 12-020 of the Canadian Electrical Code, Part I.''

The product made of polymeric material that is suitable where exposed to rain is so indicated on the device or carton. The term ''Wet Location'' on the device or carton indicates suitability for use where directly exposed to rain.

Products intended for use at elevated or cold temperatures (above 90°C or below -5°C) are so indicated on the device or carton. The application temperature on the device or carton indicates suitability for use at the extended temperature range.

The following, where applicable, is marked on the carton or installation instructions provided on or in the carton:

1. Types or range of thicknesses of a beam flange, drop wire, or rod
2. Intended mounting orientations, if restricted (for example, vertical or horizontal)
3. Sizes and types of conduit, cable, or tubing intended to be supported for hangers, staples, and straps
4. Load rating greater than for the intended applications
5. Designated assembly torque when other than intended

RELATED PRODUCTS

Cable ties are covered under Positioning Devices Certified for Canada (ZODZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 18.4 (2004), ''Hardware for the Support of Conduit, Tubing, and Cable.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Conduit and Cable Hardware,'' or other appropriate product name as shown in the individual Listings.

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CONDUIT FITTINGS CERTIFIED FOR CANADA (DWTT7)

GENERAL

This category covers metallic and nonmetallic conduit fittings, such as connectors, couplings, locknuts and sealing (liquid-tight) locknuts for use in the assembly of nonmetallic and metallic wiring systems. Also covered are fittings used to provide a transition between metallic and nonmetallic wiring systems. This category also includes metal and insulating bushings for use on conduit. These products are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

The individual certifications for each connector used with nonmetallic-sheathed cable may have details about the size and number of the nonmetallic-sheathed cable it will secure.

All male threaded fittings and nipples have only been investigated for use with locknuts.

Fittings with internal female threads (e.g., hubs, conduit bodies, couplings) have only been investigated for use with threaded rigid conduit.

Insulating Bushings — Insulating bushings provided either separately or as part of a fitting are suitable for temperatures of 150°C if they are colored black or brown, and for 90°C if any other color unless specifically marked for a higher temperature.

Volume — Fittings or covers for fittings should be judged to contribute no volume other than the equivalent raceway connected to it unless specifically marked.

Sealing (Liquid-tight) Locknuts — Sealing locknuts are intended for use with threaded rigid metal conduit and intermediate metal conduit with one sealing locknut in the outside or the inside and either an ordinary locknut or sealing locknut on the inside of the enclosure for wet locations

Conduit Fittings Certified for Canada (DWTT7)−*Continued*

or liquid-tight applications. Sealing locknuts may also be used with certified wet location or liquid-tight fittings where so marked on the fitting carton and used on the inside of the enclosure.

Reusability — Fittings have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

PRODUCT MARKINGS

Liquid-tight Flexible Nonmetallic Conduit Fittings — Liquid-tight flexible nonmetallic conduit fittings are marked as follows:

1. A fitting for Type A conduit only is marked "Liquid-Tight Flexible Nonmetallic Conduit Type A Only" or "LFNC-A only" or "FNMC-A only."
2. A metallic fitting for Type B is marked "Liquid-Tight Flexible Nonmetallic Conduit Type B Only" or "LFNC-B" or "FNMC-B" or with equivalent wording.
3. A nonmetallic fitting for Type B conduit only is marked "Liquid-Tight Flexible Nonmetallic Conduit Type B Only" or "LFNC-B only" or "FNMC-B only."
4. A nonmetallic fitting for Type C conduit only is marked "Liquid-Tight Flexible Nonmetallic Conduit Type C Only" or "LFNC-C only" or "FNMC-C only."

Nonmetallic Fittings — Nonmetallic fittings for use with rigid PVC conduit are intended for use at a maximum working temperature of 75°C.

PVC Conduit Fittings — All PVC conduit fittings are designed for connection to both Schedule 40 and 80 PVC conduit by the use of suitable solvent-type cement. Instructions supplied by the solvent-type-cement manufacturer describe the method of assembly and precautions to be followed.

Fittings for Dry Locations — Fittings that are intended only for dry locations but are used with conduit or tubing not limited to dry locations are marked "DRY" or "DRY LOCATIONS ONLY."

CARTON MARKINGS

A metallic fitting that physically cannot be connected to any type of conduit other than liquid-tight flexible metallic or nonmetallic Type B conduit will have the marking on the carton in which the fitting is packed. It is marked "Liquid-Tight Flexible Nonmetallic Conduit Type B Only" or "LFNC-B" or "FNMC-B" or with equivalent wording.

Fittings identified with an enclosure type designation or as rain-tight on the carton are intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Connectors that are also suitable for use with nonmetallic-sheathed cable, service-entrance cable, or flexible nonmetallic tubing are so identified by the appropriate marking on the carton. Connectors designated "For Use With Nonmetallic Sheathed Cable" are also suitable for use with multiconductor underground feeder and branch-circuit cable where used in dry locations. Unless marked otherwise on the carton, the connectors are suitable for connection of only one cable per cable entry.

Hubs intended for use with conduit that serves as a service mast in accordance with the CEC are marked on the fitting or carton to indicate suitability for use with service-entrance equipment.

RELATED PRODUCTS

A hub having provision for attachment of a grounding conductor may additionally be covered as a grounding and bonding hub under Grounding and Bonding Equipment Certified for Canada (KDER7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CSA-C22.2 No. 18.3 (2004), "Conduit, Tubing, and Cable Fittings"
CAN/CSA-C22.2 No. 85 (1989), " Rigid PVC Boxes and Fittings"
CSA-C22.2 No. 211.0, "General Requirements and Methods of Testing for Nonmetallic Conduit"
CSA-C22.2 No. 211.2, "Rigid PVC (Unplasticized) Conduit"
CAN/CSA-C22.2 No. 227.2.1, "Liquid-Tight Flexible Nonmetallic Conduit"

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Conduit Fitting," "Adapter" or "Coupling," or other appropriate product name as shown in the individual Listings.

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Conduit Fittings Certified for Canada (DWTT7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Retrofit Fitting Kits Certified for Use with Extruded Rigid PVC Conduit Certified for Canada (DWUC7)

USE

This category covers certified retrofit fitting kits certified for use with extruded rigid nonmetallic PVC Schedule 40 conduit. These kits are intended only for truncating conduit in concrete. They are not intended for use with conduit in open air.

The kits are provided with the tools and instructions necessary for proper installation. Separate fittings intended for use with the tools may be sold separately. The kit and installation instructions are marked "PVC Conduit Repair Fitting," or the equivalent.

ADDITIONAL INFORMATION

For additional information, see Conduit Fittings Certified for Canada (DWTT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 85 (1989), "Rigid PVC Boxes and Fittings."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RETROFIT FITTING KIT
FOR USE WITH RIGID NONMETALLIC PVC SCHEDULE 40 CONDUIT
Control No.

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FLEXIBLE CONDUIT, LIQUID-TIGHT CERTIFIED FOR CANADA (DWWY7)

Flexible Metal Conduit, Liquid-tight Certified for Canada (DXHR7)

USE AND INSTALLATION

This category covers liquid-tight flexible metal conduit in metric designators 12 to 103 inclusive (trade sizes 3/8 to 4 inclusive), for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). Liquid-tight flexible metal conduit is intended for use with conductors in circuits of 750 V nominal or less. This conduit may also be used for installation of conductors in motor circuits and for electric signs and outline lighting in accordance with the CEC.

Liquid-tight flexible metal conduit not marked with a temperature designation or marked "60 C" is intended for use at temperatures not in excess of 60°C (140°F).

Conduit intended for use in dry or oily locations at a temperature higher than 60°C (140°F) is marked "____ C dry, 75 C oil res" (or "____ C dry, 75 C oil resistant") with "75" or "105" inserted as the dry-locations temperature.

Conduit intended for use in oily locations is marked "____ C dry, 60 C oil res" (or "____ C dry, 60 C oil resistant") with "60" or "105" inserted as the dry-locations temperature.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 56 (2004), "Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit."

UL MARK

The Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing

Flexible Metal Conduit, Liquid-tight Certified for Canada (DXHR7)−*Continued*

Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Liquid-Tight Flexible Metal Conduit."

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Flexible Nonmetallic Conduit, Liquid-tight Certified for Canada (DXOQ7)

USE

This category covers liquid-tight flexible nonmetallic conduit in trade sizes 3/8 to 4 (metric designators 12 to 103) inclusive, intended for installation in dry, damp, or wet locations in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Liquid-tight flexible nonmetallic conduit is available in Types A and B constructions for use at maximum continuous operating temperature of 75°C and a minimum working temperature of -18°C.

PRODUCT MARKINGS

Liquid-tight flexible nonmetallic conduit suitable for use outdoors is marked "SR," "Sun Res" or "Sunlight Resistant."

Liquid-tight flexible nonmetallic conduit is marked with the product name in conjunction with the Certification Mark and the type of construction: "A" for layered conduit, "B" for integral conduit and "C" for corrugated conduit, or with "LFNC-A" for layered conduit, "LFNC-B" for integral conduit and "LFNC-C" for corrugated conduit.

Liquid-tight flexible nonmetallic conduit not marked with a temperature designation or marked "60 C" is intended for use at temperatures not in excess of 60°C (140°F).

Conduit for use in dry or oily locations at a temperature higher than 60°C (140°F) is marked "___C dry, 60 C wet, 70 C oil res" (or "___C dry, 60 C wet, 70 C oil resistant") with "80" or "105" inserted as the dry-locations temperature.

Conduit marked "___C dry, 60 C wet, 60 C oil res" (or "___C dry, 60 C wet, 60 C oil resistant") is for use at a temperature of 105°C (221°F) and lower temperatures in air, and at 60°C (140°F) and lower temperatures where exposed to water, oil or coolants, with "80," "90" or "105" inserted as the dry-locations temperature.

RELATED PRODUCTS

Fittings for use with liquid-tight nonmetallic conduit are covered under Conduit Fittings Certified for Canada (DWTT7) and are suitable only for the type of conduit indicated by the marking on the fitting.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 227.2.1 (2004), "Liquid-Tight Flexible Nonmetallic Conduit."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic Liquid-tight Conduit."

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FLEXIBLE METAL CONDUIT CERTIFIED FOR CANADA (DXUZ7)

USE

This category covers flexible metal conduit in trade sizes 5/16 to 4 inclusive (metric designators 10 to 103), for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). This product may also be used for installation of conductors in motor circuits and for electric signs and outline lighting in accordance with the CEC.

Flexible metal conduit (steel or aluminum) should not be used underground (directly buried or in duct which is buried) or embedded in

Flexible Metal Conduit Certified for Canada (DXUZ7)−*Continued*

poured concrete or aggregate, or in direct contact with earth or where subjected to corrosive conditions. In addition, flexible aluminum conduit should not be installed in direct contact with masonry in damp locations.

PRODUCT MARKINGS

Flexible aluminum conduit is marked at intervals of not more than 0.3 m with the letters "AL."

RELATED PRODUCTS

See Conduit Fittings Certified for Canada (DWTT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 56 (2004), "Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit."

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flexible Aluminum Conduit" or "Flexible Steel Conduit."

* *

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RIGID FERROUS METAL CONDUIT CERTIFIED FOR CANADA (DYIX7)

USE AND INSTALLATION

This category covers rigid ferrous metal conduit that includes standard 3 m lengths of straight conduit, with a coupling, special lengths either shorter or longer, with or without a coupling for specific applications or uses, elbows, and nipples in trade sizes 3/8 to 6 (12 to 155 metric trade designations) inclusive, for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Corrosion Protection and Coatings

Galvanized rigid steel conduit installed in concrete does not require supplementary corrosion protection.

Galvanized rigid steel conduit installed in contact with soil does not generally require supplementary corrosion protection.

In the absence of specific local experience, soils producing severe corrosive effects are generally characterized by low resistivity (less than 2000 ohm-centimeters).

Wherever ferrous metal conduit runs directly from concrete encasement to soil burial, severe corrosive effects are likely to occur on the metal in contact with the soil.

Conduit that is provided with a metallic or nonmetallic coating, or a combination of both, has been investigated for resistance to atmospheric corrosion. Nonmetallic outer coatings that are part of the required resistance to corrosion have been additionally investigated for resistance to the effects of sunlight.

Nonmetallic outer coatings of greater than 0.254 mm thickness are investigated with respect to flame propagation detrimental effects to any underlying corrosion protection, the fit of fittings and electrical continuity of the connection of conduit to fittings.

Rigid metal conduit with or without a nonmetallic coating has not been investigated for severely corrosive conditions.

RELATED PRODUCTS

Fittings for use with unthreaded rigid metal conduit are covered under Conduit Fittings Certified for Canada (DWTT7) and are suitable only for the type of conduit indicated by the marking on the carton.

Other certifications for elbows appear under Conduit Fittings Certified for Canada (DWTT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 45.1, "Electrical Rigid Metal Conduit – Steel."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory)

Rigid Ferrous Metal Conduit Certified for Canada (DYIX7)−*Continued*

together with the word ″LISTED,″ a control number, and the product name ''Electrical Rigid Metal Conduit'' (or ''ERMC-S'').

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RIGID NONFERROUS METALLIC CONDUIT CERTIFIED FOR CANADA (DYWV7)

GENERAL

This category covers rigid nonferrous metal conduit, including straight conduit, elbows and nipples in trade sizes 3/8 to 6 (12 to 155 metric trade designations) inclusive, for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Coatings

Nonmetallic outer coatings are investigated with respect to flame propagation, the fit of couplings, and electrical continuity with couplings.

Aluminum conduit used in concrete, in contact with soil or in severely corrosive conditions requires supplementary corrosion protection.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 45.2 (2008), ''Electrical Rigid Metal Conduit – Aluminum, Red Brass, and Stainless Steel.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electrical Rigid Metal Conduit – Aluminum'' (or ''ERMC-A''), ''Electrical Rigid Metal Conduit – Red Brass'' (or ''ERMC-RB'') or ''Electrical Rigid Metal Conduit – Stainless Steel'' (or ''ERMC-SS'').

* *

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REINFORCED THERMOSETTING RESIN CONDUIT CERTIFIED FOR CANADA (DZKT7)

USE AND INSTALLATION

This category covers reinforced thermosetting resin conduit and fittings intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Reinforced thermosetting resin conduit is certified in sizes 1/2 to 6 in. incl. in IPS and ID dimensions, as marked on the product. Certification includes straight conduit, elbows and other fittings, unless otherwise noted.

Reinforced thermosetting resin conduit has been investigated for use at -40°C (-40°F) to 110°C (230°F).

Reinforced thermosetting resin conduit is designed for connection to couplings, fittings and boxes by use of a suitable epoxy-type cement or drive-on bell and spigot. Instructions supplied by the epoxy-type-cement manufacturer describe the method of assembly and precautions to be followed.

The conduit is designated ''EB'' (Encased Burial) or ''DB'' (Direct Burial), which refers to specific wall thicknesses. EB conduit is suitable for encasement in concrete. DB conduit is suitable for encasement in concrete and direct burial. Conduit marked ''RTRC Type BG'' or ''Rigid Nonmetallic Conduit Underground (Reinforced Thermosetting Resin Conduit)'' has been investigated for underground use only — for direct burial, with or without being encased in concrete.

Conduit marked ''RTRC Type AG'' or ''Rigid Nonmetallic Conduit (Reinforced Thermosetting Resin Conduit)'' has been investigated for use aboveground, underground, and for direct burial with or without encasement in concrete. This conduit has been investigated for concealed or exposed work where not subject to physical damage. The conduit is designated as ''SW'' (Standard Wall) or ''HW'' (Heavy Wall), which refers to specific wall thicknesses.

Reinforced Thermosetting Resin Conduit Certified for Canada (DZKT7)−*Continued*

Reinforced thermosetting resin conduit, elbows and other fittings investigated for direct exposure to reagents are identified by the designation ''Reagent Resistant'' and are marked to indicate the specific reagents.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 211.3 (1996), ''Reinforced Thermosetting Resin Conduit (RTRC) and Fittings,'' CSA-C22.2 No. 2420 (2009), ''Belowground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings,'' and CSA-C22.2 No. 2515 (2009), ''Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''RTRC Type BG,'' ''RTRC Type AG,'' ''Rigid Nonmetallic Conduit Underground (Reinforced Thermosetting Resin Conduit),'' ''Rigid Nonmetallic Conduit (Reinforced Thermosetting Resin Conduit),'' ''Conduit Fitting,'' ''Adapter,'' ''Coupling,'' or other appropriate product name as shown in the individual Listings.

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CONDUIT FITTINGS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (EBMB7)

GENERAL

This category covers the following types of fittings:

Conduit fittings for draining or venting are intended for mounting in existing conduit openings of conduit boxes and electrical equipment.

Conduit unions are intended for use in threaded rigid conduit systems.

Conduit unions, 90-degree box-connector type are intended for use at threaded openings in enclosures and fittings for use in hazardous (classified) locations.

Conduit unions and universal-type box-connector conduit unions are intended for use at threaded openings in enclosures and fittings for use in hazardous (classified) locations. They may be assembled at an angle greater than 90 degrees.

Flexible connection fittings are substantial fittings having an insulated inner wall and flexible-metal outer wall encased in metal braid. They are intended for use where it is necessary to employ flexible connections in threaded rigid conduit systems. Information on the minimum inside radius of bend for which these fittings have been investigated is provided with the fitting.

Authorities Having Jurisdiction should be consulted as to what conditions these flexible connection fittings will be accepted. The use of flexible fittings should be avoided whenever possible. They should be used only when conditions are such that threaded rigid conduit cannot be used.

Conduit elbows and short-radius capped elbows are intended for use where it is desirable to have a 90-degree bend and where wires may be guided when being pulled through the conduit line.

Fittings that are rain-tight or concrete-tight are so marked, or this information is provided with the fitting.

Cast-aluminum-alloy conduit fittings covered under this category are not considered acceptable for installation in concrete or cinder fill, unless protected with asphalt-base paint or the equivalent.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 18.3 (2004), ''Conduit, Tubing, and Cable Fittings.''

CONDUIT FITTINGS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (EBMB7)

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The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Conduit Fitting for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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CONDUIT FITTINGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (EBNV7)

GENERAL

This category covers the following types of fittings:

Conduit fittings for draining or venting are intended for mounting in existing conduit openings of conduit boxes and electrical equipment.

Conduit fittings for sealing are intended for use only with sealing compound specified by the manufacturer in instructions furnished with the fitting. These devices are intended for use in sealing certified conductors in conduit lines. No splices of conductors should be made in the fittings. Instructions with the fitting indicate any restriction on position or location of the sealing fittings.

Conduit unions are intended for use in threaded rigid conduit systems.

Conduit unions, 90° box connector type are intended for use at threaded openings in enclosures and fittings for use in hazardous locations.

Conduit unions and universal-type box connector conduit unions are intended for use at threaded openings in enclosures and fittings for use in hazardous locations. They may be assembled at an angle greater than 90°.

Flexible connection fittings are substantial fittings having an insulated inner wall and a flexible metal outer wall encased in metal braid. They are intended for use where it is necessary to employ flexible connections in threaded rigid conduit systems. Information on the minimum inside radius of bend for which these fittings have been investigated is provided with the fitting. Authorities Having Jurisdiction should be consulted as to under what conditions these flexible connection fittings will be accepted. The use of flexible fittings should be avoided whenever possible; they should be used only when conditions are such that threaded rigid conduit cannot be used.

Conduit elbows and short radius capped elbows are intended for use where it is desirable to have a 90° bend and where wire may be guided when being pulled through the conduit line.

Fittings that are rain-tight or concrete-tight are so marked, or this information is provided with the fitting.

Cast-aluminum alloy conduit fittings covered under this category are not considered acceptable for installation in concrete or cinder fill unless protected with asphalt base paint or the equivalent.

RELATED PRODUCTS

See Outlet Boxes for Use in Hazardous Locations Certified for Canada (QBCR7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Conduit Fitting for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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CONDUIT FITTINGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (EBNV7)

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CONTAINMENT PRODUCTS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS CERTIFIED FOR CANADA (ECPR7)

This category covers various types of containment products, assemblies, accessories and components intended for the storage or transfer of flammable and/or combustible liquids with wide variations identified in the individual product categories, such as:

- nominal liquid capacity (up to approximately 75,000 gal or 284,000 L)
- types (cans, containers, tanks, portable, stationary, fixed, nonreuseable, etc.)
- special types or ratings (fire rated, process, vault, cabinet, etc.)
- general liquids (general flammables and/or combustibles, or motor vehicle fuels)
- specific liquids (specific flammables or combustibles as identified in the individual Listings)
- locations (indoor, outdoor, underground, aboveground, vault)
- uses (consumer, residential, commercial or industrial)
- materials (metallic, nonmetallic, composite)

Containment products for flammable and combustible liquids are divided into common groups with respect to some of the variations above:

Portable Tanks, Containers and Cans Certified for Canada (ECTX7) — Covers metallic and nonmetallic portable tanks, containers and cans, typically of smaller size and intended for the short-term storage and transport of fuels, chemicals, or similar flammable and/or combustible liquids.

Fixed and Stationary Storage Tanks Certified for Canada (EDQX7) — Covers metallic, nonmetallic and composite, fixed and stationary storage tanks, typically of larger size and intended for the long-term storage of fuels or similar flammable and/or combustible liquids at atmospheric pressure.

Transfer Pipe, Containment Sumps and Pipe/Sump Accessories Certified for Canada (QLVW7) — Covers transfer pipe and containment sumps typically intended for use in fuel-dispensing systems, and various pipe/sump accessories and components intended for use in the assembly of these systems.

Miscellaneous Tanks, Storage Products and Tank Accessories Certified for Canada (WWXR7) — Covers miscellaneous tanks and storage products intended for specific-use applications, and various tank accessories and components intended for use in or on completed containment products.

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PORTABLE TANKS, CONTAINERS AND CANS CERTIFIED FOR CANADA (ECTX7)

This category covers metallic and nonmetallic portable cans, containers and tanks, typically of smaller size and intended for the short-term storage and transport of fuels, chemicals, or similar flammable and/or combustible liquids. Reusable types are intended for continuous fill/withdraw cycles with the general liquids as indicated in the individual Listings.

Portable tanks are typically in a capacity range of 60 – 660 gal (228 – 2500 L), are not transportable without the use of equipment, and may have integral wheels, hand pumps or other accessories. Portable tanks are primarily intended to store and/or transfer flammable and combustible liquids in commercial applications, and are reusable.

Portable containers are typically in a capacity range of 8.0 – 60 gal (30 – 228 L), are transportable without the use of equipment, and may have integral wheels, handles, or other accessories. Containers are primarily intended to store and/or transfer flammable and combustible liquids in commercial applications, and are reusable.

Portable cans are typically in a capacity range of 1.0 – 8.0 gal (3.8 – 30 L) and are hand-held products with integral closures and spouts. Cans are primarily intended to transport fuel between a supply source and point of use, may be for general consumer use or special commercial use.

Portable Tanks, Containers and Cans Certified for Canada (ECTX7)−*Continued*

This category does not cover bulk containers, portable tanks or similar products intended for the commercial transport of liquid commodities by truck, rail or ship (as defined by Section 4.2.3 of the ''National Fire Code of Canada,'' in accordance with TC SOR/2008-34, ''Transportation of Dangerous Goods Regulations (TDGR),'' CSA B620, ''Highway Tanks and TC Portable Tanks for the Transportation of Dangerous Goods,'' or the ''UN Recommendations on the Transport of Dangerous Goods,'' Part 6, ''Requirements for the Construction and Testing of Packagings, Intermediate Bulk Containers (IBCs), Large Packagings, Tanks and Bulk Containers'').

This category does not cover intermediate bulk containers (IBCs) or similar products Classified for fire resistance and intended for storage in flammable liquid storage warehouses with fire-suppression systems.

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Consumer-use Fuel Cans Certified for Canada (ECYT7)

GENERAL

This category covers portable, reusable, metal and plastic consumer-use cans intended for the containment and handling (filling, temporary transport, protected storage and dispensing) of up to 25 L (6.6 gal) of general-use fuels for consumer-type motor vehicles, equipment powered by small engines, and portable heaters.

The basic product construction consists of a single- or dual-compartment body with integral handle, openings, and removable closures/spout. Dual-compartment cans are intended to store fuel in the larger compartment, and oil in the smaller compartment.

These products are intended only for CAN/CGSB fuels dispensed at commercial fueling stations as identified under **TYPES AND RATINGS** below, and where filled in accordance with Part 4 of the ''National Fire Code of Canada,'' the regulations of the Authority Having Jurisdiction, and the manufacturer's instructions.

These products have not been investigated for hazards associated with vehicle transport between fueling stations and point of use. These products have also not been investigated for effectiveness of child-resistant closures, or measured for vapor-permeation rates associated with air-quality regulations.

These products are not intended for regular transport, outdoor storage, or for use as marine fuel cans, special-purpose cans or safety cans that may have different applications and/or liquid ratings.

TYPES AND RATINGS

Petroleum fuel (red) — Investigated to CSA B376, ''Portable Containers for Gasoline and Other Petroleum Fuels,'' and intended for one of the following petroleum fuel Class and Types.

Flammable-spark-ignition automotive fuels such as gasoline and low-blend ethanol (max E10) compliant with CAN/CGSB 3.511, ''Oxygenated Automotive Gasoline Containing Ethanol,'' and gas/oil mixtures for 2-cycle engines. Dual-compartment cans are intended for separate storage of gas and oil.

Combustible-compression-ignition automotive fuels such as diesel and low-blend biodiesel (max B5) compliant with CAN/CGSB 3.517, ''Automotive (On-Road) Diesel Fuel,'' CAN/CGSB 3.520, ''Automotive Diesel Fuel Containing Low Levels of Biodiesel (B1 – B5),'' or CAN/CGSB 3.6, ''Off-Road Diesel Fuel.'' Dual-compartment cans are intended for separate storage of diesel and oil.

Kerosene (blue) — Investigated to CSA B376 and intended only for combustible heating-appliance fuels such as K1 or K2 compliant with CAN/CGSB 3.3, ''Kerosene.''

RELATED PRODUCTS

Safety-type flammable and combustible liquids cans investigated to ULC/ORD-C30, ''Safety Containers,'' are covered under Safety Cans Certified for Canada (EDBY7).

ADDITIONAL INFORMATION

For additional information, see Portable Tanks, Containers and Cans Certified for Canada (ECTX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B376 (1980), ''Portable Containers for Gasoline and Other Petroleum Fuels.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

PORTABLE CONTAINER FOR GASOLINE AND OTHER PETROLEUM FUELS IN ACCORDANCE WITH CSA B376
Control No.

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Safety Cans Certified for Canada (EDBY7)

GENERAL

This category covers portable, reusable metal or plastic safety cans intended for containment and handling (filling, temporary transport, protected storage and dispensing) of up to 25.0 L (6.6 gal) or hazardous liquids (as identified under **TYPES AND RATINGS** below), typically used in commercial applications. The basic product construction consists of a single-compartment body with integral handle, pressure relief, openings, lids, spouts, strainers, and other features identified under **TYPES AND RATINGS** below.

These products are intended for filling and use in accordance with Part 4 of the ''National Fire Code of Canada,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' regulations of the Authority Having Jurisdiction, and the manufacturer's instructions.

These products have not been investigated for hazards associated with vehicle transport and commercial operations or processes. These products have also not been investigated for effectiveness of child-resistant closures, or measured for vapor-permeation rates associated with air-quality regulations.

These products are not intended for regular transport, outdoor storage, or use as TC safety cans, consumer fuel cans, marine fuel cans or special-purpose cans that may have different applications and/or liquid ratings.

TYPES AND RATINGS

Type I — Cans from 0.5 L to 25 L provided with a single combined opening with short-valved spout and self-closing cap adapted for both pour and fill operations.

Type II — Cans from 5.0 L to 25 L provided with separate openings for fill (with self-closing vent cap) and pour (with self-closing nozzle) operations.

Plastic — Intended only for general-use fuels# for motor vehicles, equipment powered by engines, and portable heaters.

Metal — Intended for general-use fuels# and similar liquids* used in commercial applications.

General-use fuels = Commercially available fuels covered by and compliant with CAN/CGSB fuel specifications for general-purpose commercial engines (SI or CI) and heating/burning appliances, including CAN/CGSB 3.511 gasoline and gasohol blends (max E10); CAN/CGSB 3.517 on-road diesel, CAN/CGSB 3.520 low-sulfur diesel or CAN/CGSB 3.520 low-sulfur diesel with biodiesel (max B5); CAN/CGSB 3.2 heating oil; and CAN/CGSB 3.3 kerosene.

* Similar liquids = Any stable flammable or combustible liquid with chemical properties similar to the general-use fuels described and having generally accepted chemical compatibility with the metals used in the product, such as heptane, naptha, turpentine, acetone, ketone, etc.

RELATED PRODUCTS

General-use fuel cans investigated to CSA B376, ''Portable Containers for Gasoline and Other Petroleum Products,'' are covered under Consumer-use Fuel Cans Certified for Canada (ECYT7).

ADDITIONAL INFORMATION

For additional information, see Portable Tanks, Containers and Cans Certified for Canada (ECTX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C30, ''Safety Containers.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Safety Can'' or ''Nonmetallic Safety Can for Petroleum Products,'' as shown in the individual Listings.

Safety Cans Certified for Canada (EDBY7)−*Continued*

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FIXED AND STATIONARY STORAGE TANKS CERTIFIED FOR CANADA (EDQX7)

This category covers metallic, nonmetallic and composite, fixed and stationary storage tanks, typically of larger size and intended for the long-term storage of fuels or similar flammable and/or combustible liquids at atmospheric pressure. These tanks are not intended to be moved with regular frequency (stationary), or are buried, or connected to structures or piping (fixed).

Underground tanks are fixed-type vessels constructed from metallics, nonmetallics or composites and are intended for direct-burial applications. Underground tanks may also include integral upgrade systems or lining/coating systems for specific fuels.

Aboveground tanks are stationary or fixed-type vessels constructed from metallics and are intended for above-grade applications. Aboveground tanks may also include limited mechanical accessories or special uses.

Below-grade vaults are fixed-type compartments constructed from nonmetallics and intended for the watertight, below-grade storage of aboveground tanks with provisions for access, venting monitoring and optional secondary containment.

Fire-rated tanks are stationary or fixed-type aboveground or underground tanks provided with structural support and thermal insulation intended for the physical and fire protection of the core tank, supports and stored liquid.

This category does not cover portable tanks intended for the commercial transport of liquid commodities by truck, rail or ship (as defined by Chapter 6.2 of ANSI/NFPA 30, "Flammable and Combustible Liquids Code," in accordance with 49CFR, Subchapter C, "USDOT Hazardous Materials Regulations," or the "UN Recommendations on the Transport of Dangerous Goods," Part 6, "Requirements for the Construction and Testing of Packagings, Intermediate Bulk Containers (IBCs), Large Packagings and Portable Tanks").

This category does not cover aboveground flammable liquid tank systems (fuelers) that include a base tank with integral pressure or vacuum pump, liquid-level device, leak-monitoring device, hose, nozzle or other dispensing equipment.

* *

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Aboveground Flammable-liquid Tanks Certified for Canada (EEEV7)

USE AND INSTALLATION

This category covers general-purpose, shop-fabricated, steel primary, secondary and diked containment-type tank constructions intended for aboveground storage of noncorrosive, stable, flammable and combustible liquids of maximum 1.0 spg at atmospheric pressure in capacities from approximately 225 L to 200,000 L.

These tanks are intended for fixed or stationary installation and use in accordance with Part 4 of the "National Fire Code of Canada," CSA B139, "Installation Code for Oil-Burning Equipment," "CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products," and/or other requirements of the Authority Having Jurisdiction (AHJ).

This category covers only the basic tank constructions and optional tank accessories specifically identified in the individual certifications that are investigated to additional requirements under the base tank standards.

This category does not cover field-erected tanks or portable/mobile tanks intended for shipping and transport, which are covered under separate requirements or regulations from the American Petroleum Institute, U.S. Department of Transportation, etc., or United Nations publications; or special-purpose tanks, such as utility or used oil.

These products have not been investigated for resistance to or use after hurricanes, tornadoes, earthquakes, floods or other natural disasters; or vehicle and similar impacts; and fire.

TANK TYPES

The following types of steel tank basic-containment constructions, designs and optional supports are indicated in the individual certifications:

Aboveground Flammable-liquid Tanks Certified for Canada (EEEV7)−*Continued*

Aboveground tank for flammable liquids (#) — Single-wall steel primary-containment tank.

Secondary-containment aboveground tank for flammable liquids (#) — Steel primary-containment tank within a steel secondary-containment shell forming an interstitial space capable of being pressurized and monitored for leakage.

(*) Diked aboveground tank for flammable liquids (#) — Steel primary-containment tank within a steel containment dike vessel capable of being monitored for leakage, but not capable of being pressurized.

(#) **"on supports"** — Optionally provided with supports to elevate and stabilize the tank above grade that are investigated for structural integrity.

(*) Diked tank designs are limited to only **"Closed-top"** (also known as contained tank assemblies) — dikes provided with covers that resist rain or debris entering the dike.

TANK ACCESSORIES

The following optional accessories noted in the individual certifications and investigated to additional requirements in CAN/ULC-S601, "Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids," or CAN/ULC-S653, "Aboveground Steel Contained Tank Assemblies for Flammable and Combustible Liquids," may also be attached to the base tank:

Lifting devices — Structural lugs, hooks or others means to facilitate lifting of the tank during fabrication, transport or installation.

Heating devices — Heating coils or hot wells provided within the tank for heating liquids in the tank.

Supplementary equipment — Stick gauges and gauge charts used to facilitate measuring of the liquid height and calculating capacity.

FEATURES COVERED

The basic features of tanks covered under this category include all containment spaces and their respective openings (manways, emergency vents, normal vents, fill/withdraw, gauging, monitoring and other functional openings) with connections (threaded- or flanged-type fittings), and the tank accessories identified above.

All primary-tank compartment(s) are provided with normal and emergency vent openings. All secondary-tank interstitial space(s) are provided with emergency vent openings. It is anticipated the continued venting will be provided when installed in accordance with the applicable code.

In addition to vent openings, all primary-tank compartment(s) are provided with openings to accommodate filling, withdrawing, and inventory control; and all secondary-tank interstitial spaces are provided with openings for leak-detection monitoring.

All tank-containment compartments have been factory leak-tested by the manufacturer before shipping.

ACCESSORIES/FEATURES NOT INVESTIGATED

This category covers only the accessories and features specifically identified in the individual certifications. Any other accessories or components that are shipped with the tanks, attached to the tanks, or added to the tanks are not included in the scope of the tank certification. It is intended that the AHJ approve the use and/or installation of any such accessories independent of the tank certification.

RELATED PRODUCTS

See Protected Aboveground Tanks for Flammable and Combustible Liquids Certified for Canada (EELU7) for tanks investigated to ULC-S655, "Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids."

See Special-purpose Tanks Certified for Canada (EFVT7) for tanks constructed of steel, including generator base, work-top, lube oil, waste oil, day/utility, and other special-purpose types investigated to CAN/ULC-S601, "Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids," CAN/ULC-S602, "Aboveground Steel Tanks for Fuel Oil and Lubricating Oil," CAN/ULC-S652, "Tank Assemblies for the Collection, Storage and Removal of Used Oil," CAN/ULC-S653, "Aboveground Steel Contained Tank Assemblies for Flammable and Combustible Liquids," and/or ULC/ORD-C142.17, "Special Purpose Relocatable Aboveground Vertical Tanks for Flammable and Combustible Liquids."

ADDITIONAL INFORMATION

For additional information, see Fixed and Stationary Storage Tanks Certified for Canada (EDQX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate the basic tank-containment type and optional accessories in this category is CAN/ULC-S601, "Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids" (for primary or secondary types), or CAN/ULC-S653, "Aboveground Steel Contained Tank Assemblies for Flammable and Combustible Liquids" (for diked types).

UL MARK

Aboveground Flammable-liquid Tanks Certified for Canada (EEEV7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the name of the appropriate tank construction as indicated in the individual Listings.

* *

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Protected Aboveground Tanks for Flammable and Combustible Liquids Certified for Canada (EELU7)

USE AND INSTALLATION

This category covers protected aboveground tanks for flammable and combustible liquids intended for the aboveground storage of flammable and combustible liquids at atmospheric pressure. The tank constructions are provided with integral secondary containment and are designed to reduce the heat transferred to the primary tank should the construction be exposed to a hydrocarbon-pool fire.

Protected aboveground tanks for flammable and combustible liquids, such as gasoline, fuel oil, or similar products with a specific gravity not greater than 1.0 are intended for stationary installation and use in accordance with Part 4 of the "National Fire Code of Canada," CSA B139, "Installation Code for Oil-Burning Equipment," the "CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products," and the requirements of the Authority Having Jurisdiction.

FACTORS NOT INVESTIGATED

These tanks have not been investigated to determine acceptability for use after fire exposure, impact by vehicles, or small-arms attack.

RELATED PRODUCTS

This category does not cover concrete-encased tanks constructed in accordance with ULC/ORD-C142.5, "Concrete Encased Aboveground Tank Assemblies for Flammable and Combustible Liquids."

ADDITIONAL INFORMATION

For additional information, see Fixed and Stationary Storage Tanks Certified for Canada (EDQX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S655, "Protected Aboveground Tank Assemblies for Flammable and Combustible Liquids."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Protected Secondary Containment Aboveground Tanks for Flammable Liquids."

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Oil-burner-fuel Tanks Certified for Canada (EFGR7)

USE AND INSTALLATION

This category covers steel tanks of the atmospheric type intended primarily for the storage of fuel oil for supplying oil burners and similar equipment. They are intended for installation and use in accordance with Part 4 of the "National Fire Code of Canada," and CSA B139, "Installation Code for Oil-Burning Equipment."

ADDITIONAL INFORMATION

For additional information, see Fixed and Stationary Storage Tanks Certified for Canada (EDQX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

Oil-burner-fuel Tanks Certified for Canada (EFGR7)−*Continued*

The basic standard used to investigate products in this category is CAN/ULC-S602 (1992), "Aboveground Steel Tanks for Fuel Oil and Lubricating Oil."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Aboveground Steel Tank for Fuel Oil and Lubricating Oil."

* *

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Oil-burner-fuel Tanks, Nonmetallic Certified for Canada (EFNI7)

USE

This category covers nonmetallic tanks of the atmospheric type intended primarily for the storage of fuel oil for supplying oil burners and similar equipment. They are intended for installation and use in accordance with CSA B139, "Installation Code for Oil-Burning Equipment," "CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products," and regulations of the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Fixed and Stationary Storage Tanks Certified for Canada (EDQX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C80.1 (2000), "Aboveground Nonmetallic Tanks for Fuel Oil."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic Tank for Oil Burner Fuel."

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Special-purpose Tanks Certified for Canada (EFVT7)

USE AND INSTALLATION

This category covers special-purpose, shop-fabricated, steel primary, secondary and diked containment-type tank constructions intended for aboveground storage of noncorrosive, stable, flammable and/or combustible liquids of maximum 1.0 spg at atmospheric pressure as indicated in the individual certifications.

These tanks are intended for fixed or stationary installation and use in accordance with Part 4 of the "National Fire Code of Canada," CSA B139, "Installation Code for Oil-Burning Equipment," "CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products," and/or other requirements of the Authority Having Jurisdiction (AHJ).

This category covers only the basic tank constructions and optional tank accessories specifically identified in the individual certifications that are investigated to additional requirements under the base tank standards.

This category does not cover field-erected tanks or portable/mobile tanks intended for shipping and transport, which are covered under separate requirements or regulations from the American Petroleum Institute, U.S. Department of Transportation, etc., or United Nations publications; or general-purpose tanks.

These products have not been investigated for resistance to or use after hurricanes, tornadoes, earthquakes, floods or other natural disasters; or vehicle and similar impacts; and fire.

TANK TYPES

The following types of steel tank basic-containment constructions and special-purpose designs are indicated in the individual certifications:

Generator base tank (#) — Tank used for combined combustible fuel storage and structural support for diesel- or turbine-engine power genera-

Special-purpose Tanks Certified for Canada (EFVT7)−*Continued*

tors. These tanks are rectangular and of maximum 100,000 L capacity for combustible fuels typically of Class II types, such as diesel, kerosene, or turbine oils.

Secondary-containment generator base tank (#) — Generator base tank of a secondary-containment type (constructed with two shells that form an interstitial space capable of being pressurized and monitored for leakage).

(*) Diked generator base tank (#) — Generator base tank of a diked containment (contained assembly) type (aboveground storage tank within a steel containment dike vessel that is capable of being monitored for leakage, but not capable of being pressurized).

Fire-resistant generator base tank (#) — Generator base tank encased in concrete that provides thermal insulation to keep the primary tank liquid temperature to no more than a 50°C increase during a one-hour hydrocarbon-pool-fire exposure, in addition to general impact and vandalism resistance.

Fire-resistant secondary-containment generator base tank (#) — Fire-resistant generator base tank of a secondary-containment type (constructed with two shells that form an interstitial space capable of being pressurized and monitored for leakage).

Protected secondary-containment generator base tank (#) — Generator base tank of a secondary-containment type (constructed with two shells that form an interstitial space capable of being pressurized and monitored for leakage) that provides thermal insulation to keep the primary tank shell temperature at no more than 144°C (max avg rise) and 204°C (max point) during a two-hour 2000°F fire exposure, in addition to vehicle- and projectile-impact resistance.

Work-top (or Workbench) tank (#) — Tank used for combined combustible-liquid storage and work-top (or workbench) surface. These tanks are of maximum 2500 L capacity for combustible liquids limited to Class IIIB types, such as new/used lube oils, hydraulic/transmission, or similar working fluids.

Secondary-containment work-top (or workbench) tank (#) — Work-top (or workbench) tank of a secondary-containment type (constructed with two shells that form an interstitial space capable of being pressurized and monitored for leakage).

Lube-oil tank (#) — Tank used for storage of unused lubricating oils. These tanks are of maximum 2500 L capacity for lube oils limited to Class IIIA or IIIB types, such as motor crankcase oils, hydraulic/transmission oils, machine/cutting oils, or similar working fluids.

Secondary-containment lube-oil tank (#) — Lube-oil tank of a secondary-containment type (constructed with two shells that form an interstitial space capable of being pressurized and monitored for leakage).

Used-oil tank (#) — Tank used for storage of used lubricating oils. These tanks are of maximum 2500 L capacity for used oils limited to Class IIIA or IIIB types, such as motor crankcase oils, hydraulic/transmission oils, machine/cutting oils, or similar fluids.

Secondary-containment used-oil tank (#) — Lube-oil tank of a secondary-containment type (constructed with two shells that form an interstitial space capable of being pressurized and monitored for leakage).

Utility tank (#) — Tank of capacities up to 5000 L and intended for temporary or backup supply of fuel for engine-driven equipment such as pumps or generators, and fuel-burning appliances such as furnaces or heaters, or other equipment used in farm, construction, mining, forestry, or similar applications.

Secondary-containment utility tank (#) — Utility tank of a secondary-containment type (constructed with two shells that form an interstitial space capable of being pressurized and monitored for leakage).

(#) **"on supports"** — Optionally provided with supports to elevate and stabilize the tank above grade that are investigated for structural integrity.

(*) Diked tank designs are limited to only **"Closed-top"** (also known as contained tank assemblies) — dikes provided with covers that resist rain or debris entering the dike.

TANK ACCESSORIES

The following optional accessories noted in the individual certifications and investigated to additional requirements in the standards noted under **REQUIREMENTS** may also be attached to the base tank:

Lifting devices — Structural lugs, hooks or others means to facilitate lifting of the tank during fabrication, transport or installation.

Heating devices — Heating coils or hot wells provided within the tank for heating liquids in the tank.

Supplementary equipment — Stick gauges and gauge charts used to facilitate measuring of the liquid height and calculating capacity.

FEATURES COVERED

The basic features of tanks covered under this category include all containment spaces and their respective openings (manways, emergency vents, normal vents, fill/withdraw, gauging, monitoring and other functional openings) with connections (threaded- or flanged-type fittings), and the tank accessories identified above.

CONTAINMENT PRODUCTS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS CERTIFIED FOR CANADA (ECPR7)

Special-purpose Tanks Certified for Canada (EFVT7)−*Continued*

All primary-tank compartment(s) are provided with normal and emergency vent openings. All secondary-tank interstitial space(s) are provided with emergency vent openings. It is anticipated the continued venting will be provided when installed in accordance with the applicable code.

In addition to vent openings, all primary-tank compartment(s) are provided with openings to accommodate filling, withdrawing, and inventory control; and all secondary-tank interstitial spaces are provided with openings for leak-detection monitoring.

All tank-containment compartments have been factory leak-tested by the manufacturer before shipping.

ACCESSORIES/FEATURES NOT INVESTIGATED

This category covers only the accessories and features specifically identified in the individual certifications. Any other accessories or components that are shipped with the tanks, attached to the tanks, or added to the tanks are not included in the scope of the tank certification. It is intended that the AHJ approve the use and/or installation of any such accessories independent of the tank certification.

RELATED PRODUCTS

See Oil-burner-fuel Tanks Certified for Canada (EFGR7) for aboveground tanks intended for fuel oils and lube oils and investigated to CAN/ULC-S602, "Aboveground Steel Tanks for Fuel Oil and Lubricating Oil."

See Protected Aboveground Tanks for Flammable and Combustible Liquids Certified for Canada (EELU7) for protected tank assemblies intended for flammable and combustible liquids and investigated to ULC-S655, "Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids."

See Aboveground Flammable-liquid Tanks Certified for Canada (EEEV7) for general-purpose tanks constructed of steel and intended for flammable and combustible liquids used in general applications and investigated to CAN/ULC-S601, "Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids."

ADDITIONAL INFORMATION

For additional information, see Fixed and Stationary Storage Tanks Certified for Canada (EDQX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The requirements used to investigate the specific special-purpose tanks, basic tank-containment type and optional accessories in this category are based on:

Generator base tanks are investigated to CAN/ULC-S601, "Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids" (primary and secondary types), or CAN/ULC-S653, "Aboveground Steel Contained Tank Assemblies for Flammable and Combustible Liquids" (closed-top diked types), and if so marked:

Fire-resistant generator base tanks are additionally investigated to ULC/ORD-C142.5, "Concrete Encased Steel Aboveground Tank Assemblies for Flammable and Combustible Liquids."

Protected secondary-containment generator base tanks are additionally investigated to ULC-S655, "Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids."

The basic standard used to investigate work-top (or workbench) tanks and utility tanks in this category is CAN/ULC-S601 (primary and secondary types).

The basic standard used to investigate lube-oil tanks in this category is CAN/ULC-S602, "Aboveground Steel Tanks for Fuel Oil and Lubricating Oil" (primary and secondary types).

The basic standard used to investigate used-oil tanks in this category is CAN/ULC-S652, "Tank Assemblies for the Collection, Storage and Removal of Used Oil" (primary and secondary types).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate tank construction as indicated in the individual Listings.

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Underground Tanks Certified for Canada (EGHX7)

GENERAL

This category covers shop-fabricated horizontal cylindrical tanks intended for the fixed underground storage of noncorrosive, stable, flam-

Underground Tanks Certified for Canada (EGHX7)−*Continued*

mable and combustible liquids at atmospheric pressure in capacities of up to 250,000 L (66,045 U.S. gal) and diameters of up to 4.0 m (13.1 ft). The combinations of construction materials, containment types, designs, options and liquid ratings are described under **TYPES AND RATINGS** below.

These tanks are intended for installation and use in accordance with Part 4 of the ''National Fire Code of Canada,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' API 1615, ''Installation of Underground Petroleum Storage Systems,'' ''CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products,'' and/or other requirements of the Authority Having Jurisdiction, and the manufacturer's instructions.

These tanks are provided with one or more containment shells and/or compartments, top openings for pipe connections (for fill, withdraw, monitor, etc.), striker plates, and may optionally be provided with manway openings, connecting rings and lift lugs. Access risers, sumps, piping and other accessories that may be connected to the tank are not covered under this category.

These tanks are not provided with an internal-corrosion-protection, upgrade or lining system investigated by UL, and do not cover field erected or refurbished types, pressure vessels or processing applications that may occur in tanks.

TYPES AND RATINGS

The tank materials, containment types, designs, options and liquid ratings, as indicated in the individual Listings, are defined as follows:

(+) ''Steel'' or ''Fiberglass'' tank material identification as applicable, and

(++) ''Secondary Containment'' or ''Double Wall'' as applicable per the appropriate standard's engineering markings.

Steel Tanks

These are all-steel tanks constructed and investigated to ULC-S603, ''Steel Underground Tanks for Flammable and Combustible Liquids,'' and are not provided with an external corrosion-protection system investigated by UL. These tank constructions may be primary (single wall) or secondary (double wall) types, and are suitable for containment of general fuels and similar flammable and combustible liquids, as identified in the **(*)** liquid ratings:

(+) underground tank for (*) — A steel primary-containment (single wall) tank with one or more compartments.

(+) (++) underground tank for (*) — A steel primary-containment tank directly (in contact with primary) or indirectly (separated by standoffs from primary) wrapped in a secondary-containment (double wall) steel shell to at least 300° and 100% of the heads. The external shell provides both secondary containment and interstitial monitoring.

Fiberglass Tanks

These are all-fiberglass tanks constructed and investigated to ULC-S615, ''Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids.'' These tank constructions may be primary (single wall) or secondary (double wall) types, and are suitable for containment of general fuels and similar flammable and combustible liquids, as identified in the **(#)** liquid ratings:

(+) underground tank for (#) — A fiberglass primary-containment (single wall) tank with one or more compartments.

(+) (++) underground tank for (#) — A fiberglass primary-containment tank directly (in contact with primary) or indirectly (separated by standoffs from primary) wrapped in a secondary-containment (double wall) fiberglass shell to at least 300° and 100% of the heads. The external shell provides both secondary containment and interstitial monitoring.

Corrosion-resistant Tanks

These are base steel tanks (ULC-S603 primary or secondary types) provided with an external corrosion-protection system constructed and investigated in accordance with CAN/ULC-S603.1, ''External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids.'' These tank constructions may be Cathodic (Section 5), Composite (Section 6), Jacketed (Section 7) or Coated (Section 8) types, and are suitable for containment of general fuels and similar flammable and combustible liquids, as identified in the **(*)** liquid ratings:

Cathodically protected underground tank for (*) — A steel primary (single wall) tank with a pre-engineered, galvanic-type cathodic protection system (anode pack with connecting wires and dielectric coating and bushings) that provides external corrosion protection.

Cathodically protected (++) underground tank for (*) — A steel secondary containment (double wall) tank with a pre-engineered, galvanic-type cathodic protection system (anode pack with connecting wires and dielectric coating and bushings) that provides external corrosion protection.

Coated underground tank for (*) — A steel primary (single wall) tank covered directly (bonded) with a thin nonmetallic cladding (min 1.8 mm PUR) which provides external corrosion protection.

Coated (++) underground tank for (*) — A steel secondary-containment (double wall) tank covered directly (bonded) with a thin nonmetallic cladding (min 1.8 PUR) which provides external corrosion protection.

Underground Tanks Certified for Canada (EGHX7)−*Continued*

Composite underground tank for (*) — A steel primary (single wall) tank covered directly (bonded) with a thick nonmetallic cladding (min 2.5 FRP) which provides external corrosion protection.

Composite (++) underground tank for (*) — A steel secondary-containment (double wall) tank covered directly (bonded) with a thick nonmetallic cladding (min 2.5 FRP) which provides external corrosion protection.

Jacketed underground tank for (*) — A steel single-wall primary tank completely contained within a nonmetallic external tank jacket (min 2.5 mm FRP, PUR, PE or Polyurea) which provides secondary containment, interstitial leak monitoring and external corrosion protection.

Liquid Ratings

The above tank types are additionally rated in the individual Listings for either one or more general fuel blend ranges, or flammable liquids as follows:

(#) Petroleum Products, Oxygenated Fuel Blends and Oxygenates — Combines all of the following ratings for commercially available fuels covered by CGSB fuel regulations and compliant with CGSB fuel specifications for general-purpose commercial engines (SI or CI) and heating/burning appliances:

Petroleum Products — Includes petroleum hydrocarbon fuels without bio-blends CGSB 3.511 gasoline (E0), CGSB 3.517 diesel (B0), CGSB 3.2 fuel oil (B0), CGSB 3.3 kerosene (K1 and K2); and similar flammable or combustible liquid petroleum derivatives, such as fuel components (cetane, hexane, heptane, iso-octane, etc.), and oils (lube, hydraulic, machine, etc.).

Oxygenated Fuel Blends — Includes all ''Petroleum Products'' liquids; plus petroleum hydrocarbon fuels with low-biofuels blends, such as CGSB 3.511 gasoline and ethanol blends (max E10), CGSB 3.520 diesel and biodiesel blends (max B5), CGSB 3.2 fuel oil and bioheat blends (max B5).

Oxygenates — Includes all ''Oxygenated Fuel Blends'' liquids; plus higher-blend oxygenated fuels mixing CGSB 3.511 gasoline and ethanol, such as E85, and common-fuel-blend stocks and components, such as pure or denatured methanol and ethanol.

(*) Flammable Liquids — Includes all liquids in the three ''General Fuels'' ratings above; plus other stable flammable or combustible liquids with chemical properties similar to the general fuels and liquids described above having generally accepted chemical compatibility with the materials used in the product, such as other alcohols and solvents (pentane, hexanol, acetone, ketone, etc.), or other petroleum derivatives (xylene, toluene, naphtha, turpentine, etc.).

RELATED PRODUCTS

See Underground Tank Lining Systems (EGAYC) for nonmetallic internal tank lining and coating systems.

See Underground Tank Upgrade Systems (EGSJC) for nonmetallic internal tank containment and rating upgrade systems.

ADDITIONAL INFORMATION

For additional information, see Fixed and Stationary Storage Tanks Certified for Canada (EDQX7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is one or more of the following:

Steel tanks: ULC-S603, ''Steel Underground Tanks for Flammable and Combustible Liquids''

Fiberglass tanks: ULC-S615, ''Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids''

Corrosion-resistant tanks: CAN/ULC-S603.1, ''External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids,'' with specific requirements for:

Cathodic systems per Section 5, ''Cathodically Protected Tanks''

Coated tanks per Section 8, ''Coated Tanks''

Composite tanks per Section 6, ''Composite Tanks (Clad)''

Jacketed tanks per Section 7, ''Jacketed Tanks''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the appropriate tank construction for the individual Listings as indicated in **TYPES AND RATINGS** above.

The standard number(s) for the applicable tank type as indicated under **REQUIREMENTS** above may also be identified in the UL Mark.

* *

TRANSFER PIPE, CONTAINMENT SUMPS AND PIPE/SUMP ACCESSORIES CERTIFIED FOR CANADA (QLVW7)

This category covers transfer pipe and containment sumps typically intended for use in fuel-dispensing systems, and various pipe/sump accessories and components intended for use in the assembly of these systems as described below.

Piping is intended for the transfer of fuel between storage tanks and dispensing devices, and includes underground pipe types for use only in underground applications or connector pipe types for use in either sump or aboveground applications.

Sumps are intended for the containment of fuel from leaks or spills in tanks, piping, dispensers or bulk carriers, and includes tank, transition, and dispenser types for use below grade with access at grade.

Accessories covered under this category are typically intended for the assembly of pipe and sumps in fueling systems at the installation site, and may include mechanical devices such as frames, brackets, covers and fittings.

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Flexible Connectors for Flammable Liquids Certified for Canada (QLWV7)

USE AND INSTALLATION

This category covers metallic and nonmetallic flexible connectors intended for use primarily by manufacturers and installers of flammable-liquid systems such as dispensing systems for gasoline and motor fuels.

The connectors have a maximum length of 2.43 m (8 ft) and are for one or more uses in making connections in underground piping, underground sumps or aboveground flammable-liquid tanks.

Flexible connectors in aboveground applications are intended to be provided with protection from physical damage.

The connectors are intended for use only with those liquids specified in the individual Listings and on the Listing Mark on the product, at pressures not in excess of that marked on the product.

These connectors are intended to be installed and used underground, in underground sumps and aboveground in accordance with the manufacturer's instructions, the regulations of the Authority Having Jurisdiction, and the following documents: Part 4 of the ''National Fire Code of Canada,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' and the ''CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.''

ADDITIONAL INFORMATION

For additional information, see Transfer Pipe, Containment Sumps and Pipe/Sump Accessories Certified for Canada (QLVW7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate metallic flexible connectors in this category is ULC/ORD-C536-1974, ''Flexible Metallic Hose.''

The basic standard used to investigate nonmetallic flexible connectors in this category is CAN/ULC-S633, ''Flexible Underground Hose Connectors for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one or more of the following product names: ''Underground Flexible Connector,'' ''Flexible Connector in Underground Sumps'' or ''Aboveground Flexible Connector for Flammable Liquid Tanks,'' followed by one of the following: ''for Petroleum Products Only,'' ''for Petroleum Products, Alcohols and Alcohol-Gasoline Mixtures'' or ''for Petroleum Products and Gasohol (Unleaded Gasoline and 10 Percent Maximum Ethyl).''

If more than one product name is used, the words ''Also Suitable for Use as'' will connect the product names.

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CONTAINMENT PRODUCTS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS CERTIFIED FOR CANADA (ECPR7)

Piping, Flammable Liquid, Underground Certified for Canada (QLXT7)

USE AND INSTALLATION

This category covers underground pipe and fittings (piping system) of metallic or nonmetallic constructions intended for use in the distribution and/or secondary containment of flammable liquids, and for the transmission of flammable vapors within fuel-dispensing systems.

These products are intended to be installed and used in accordance with the manufacturer's instructions, the ''National Fire Code of Canada,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' the ''CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products,'' and regulations of the Authority Having Jurisdiction.

PIPING SYSTEM TYPES

The types of underground metallic or nonmetallic piping system constructions as indicated in the individual Listings are defined as follows ($ prefix = ''Underground Metallic'' or ''UGM'' or ''Underground Nonmetallic'' or ''UGN,'' and # suffix = ''System,'' ''Pipe'' or ''Fitting'' as appropriate):

$ Primary Carrier # or $ PC # — Pipe and/or fittings intended for continuous contact with the flammable liquids in a system under normal use conditions.

$ Secondary Containment # or $ SC # — Pipe and/or fittings intended to contain flammable liquids in a system during abnormal use conditions (such as primary carrier pipe leaks and sump spills).

$ Integral Primary/Secondary # or $ PS # — A single pipe and/or fitting constructed at the manufacturer that combines both primary carrier and secondary containment with an interstitial space that can be monitored for leakage.

$ Normal Vent # or $ NV # — Pipe and/or fittings intended to transfer displaced air or fuel vapors from an underground tank to grade during filling and provide atmospheric pressure equalization.

$ Vapor Recovery # or $ VR # — Pipe and/or fittings intended to transfer collected air and fuel vapors in a pressure or vacuum system to an underground tank during dispensing.

FUEL TYPES

The types of flammable-liquid fuels for underground systems as indicated in the individual Listings are defined as follows:

Motor Vehicle Fuels (or MV Fuels) — Petroleum-based hydrocarbon fuels typically found in consumer dispensing stations, such as gasoline or diesel, including blended fuels with max 15% MTBE, 15% Methanol or 30% Ethanol (as identified in Table 3 of CAN/ULC-S660, ''Nonmetallic Underground Piping for Flammable and Combustible Liquids'').

High Blend Fuels (or HB Fuels) — Motor vehicle fuels with higher than normal gasoline blends with max 50% Methanol or 50% Ethanol (as identified in Table 3 of CAN/ULC-S660).

Concentrated Fuels (or CT Fuels) — Motor vehicle and alternate unblended fuels for up to 100% concentrations of Toluene, Methanol and Ethanol (as identified in Table 3 of CAN/ULC-S660).

Aviation & Marine Fuels (or A&M Fuels) — Motor vehicle and specialty aviation or marine use fuels for up to 100% kerosene or leaded gasoline (as identified in Table 3 of CAN/ULC-S660).

RATINGS, MARKINGS AND INSTRUCTIONS

The piping is intended for use only with the flammable and combustible liquids or vapors as specified in the individual Listings and in the Listing Mark at the pressure and/or vacuum not exceeding that marked on the product.

The piping is intended to be assembled and installed only by persons qualified by the manufacturer. This piping is intended for underground use only in soil that has not been exposed to flammable liquids or other contaminants.

RELATED PRODUCTS

See Flexible Connectors for Flammable Liquids Certified for Canada (QLWV7) and Tank Accessories for Flammable and Combustible Liquids Certified for Canada (EGVV7).

ADDITIONAL INFORMATION

For additional information, see Transfer Pipe, Containment Sumps and Pipe/Sump Accessories Certified for Canada (QLVW7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic requirements used to investigate metallic constructions in this category are contained in UL Subject 971A, ''Outline of Investigation for Metallic Underground Fuel Pipe.''

The basic standard used to investigate nonmetallic constructions in this category is CAN/ULC-S660, ''Nonmetallic Underground Piping for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the pipe and/or fitting smallest package unit is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these prod-

Piping, Flammable Liquid, Underground Certified for Canada (QLXT7)−*Continued*

ucts includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the appropriate piping system type or code (as specified under **PIPING SYSTEM TYPES**) and fuel types or codes (as specified under **FUEL TYPES**).

* *

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MISCELLANEOUS TANKS, STORAGE PRODUCTS AND TANK ACCESSORIES CERTIFIED FOR CANADA (WWXR7)

This category covers miscellaneous tanks and storage products intended for specific-use applications, and various tank accessories and components intended for use in or on completed containment products as described below.

Process tanks are intended only for the processing and storage uses described in the individual Listings, which include oil/water separators and septic tanks with or without integral accessories or components.

Miscellaneous storage products include devices that indirectly contain flammable and/or combustible liquids, such as storage cabinets and waste containers, but may have secondary containment and fire-resistance ratings.

Accessories covered under this category are typically intended for the assembly of tanks at the installation site, and may include complete accessories (such as risers, platforms, supports, dikes, vents, liners, etc.) or smaller components (such as fittings, flanges, connectors, brackets, plugs, lugs, etc.).

* *

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Flammable-liquid Storage Cabinets Certified for Canada (EDJZ7)

USE

This category covers cabinets intended for the storage of flammable liquids as permitted by the relevant sections of the "National Fire Code of Canada." The cabinets are tested to determine their ability to withstand a 10-minute standard fire exposure without developing an internal temperature rise in excess of 139°C above ambient.

RELATED PRODUCTS

For larger capacity liquid storage, see Storage Tanks Certified for Canada (EDQX7).

ADDITIONAL INFORMATION

For additional information, see Miscellaneous Tanks, Storage Products and Tank Accessories Certified for Canada (WWXR7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in "National Fire Code of Canada," and ULC/ORD-C1275 (1984), "ULC Guide for the Investigation of Storage Cabinets for Flammable Liquid Containers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flammable Liquid Storage Cabinet."

* *

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Tank Accessories for Flammable and Combustible Liquids Certified for Canada (EGVV7)

GENERAL

This category covers accessories intended for use with flammable and combustible liquid tanks as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Miscellaneous Tanks, Storage Products and Tank Accessories Certified for Canada (WWXR7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S631 (1984), "Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flammable and Combustible Liquid Tank Accessory."

* *

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Burner-fuel Liquid-level Gauges Certified for Canada (JYJZ7)

USE

This category covers devices that are either direct- or remote-reading gauges designed for use in tanks of the vented nonpressure type handling oil-burner fuel, unless otherwise indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Miscellaneous Tanks, Storage Products and Tank Accessories Certified for Canada (WWXR7), Containment Products for Flammable and Combustible Liquids Certified for Canada (ECPR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C180 (1997), "Liquid Level Gauges and Indicators for Fuel Oil and Lubricating Oil Tanks."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Liquid-level Gauge."

* *

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CONTROL DAMPERS CERTIFIED FOR CANADA (EIMZ7)

GENERAL

This category covers control dampers intended for installation in air-handling spaces (plenums) as defined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These dampers have been subjected to tests to determine the peak rate of heat release, and the maximum peak and average normalized optical smoke density. The performance of the dampers with regard to operability has not been investigated.

Sizes — The maximum sizes expressed in inches representing the maximum width and maximum height, or maximum diameter, are shown in the individual certifications for each damper model.

Abbreviations — The following abbreviations are used in the individual certifications:

- H – Horizontal

● V – Vertical

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Additional products investigated to ULC/ORD-C2043, "Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces," are covered under Discrete Products Installed in Air-handling Spaces – Plenums Certified for Canada (BHZF7).

Fire dampers, smoke dampers, combination fire and smoke dampers, and corridor dampers are covered under Dampers for Fire Barrier and Smoke Applications Certified for Canada (EMME7).

Dampers intended for installation in air-handling openings penetrating fire-resistive-membrane ceilings are covered under Ceiling Firestop Flap Assemblies Certified for Canada (CABS7).

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C2043, "Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces."

Products covered under this category have demonstrated the following rate of heat release and smoke optical density values, through tests conducted in accordance with ULC/ORD-C2043:

1. A peak rate of heat release of 100 kW or less,
2. A peak normalized optical density of 0.50 or less, and
3. An average normalized optical density of 0.15 or less.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CONTROL DAMPER
AS TO HEAT RELEASE RATE AND SMOKE OPTICAL DENSITY
Control No.

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CONVEYORS CERTIFIED FOR CANADA (EJJR7)

USE

This category covers electrically operated machinery intended for the transport of articles or materials within a building structure. It does not cover machinery intended for the transport of persons.

Conveyors are required to employ guards, safety releases, brakes, interlocks, etc., to reduce the likelihood of accidents with respect to the moving mechanism.

Accessory equipment intended for use with conveyors, such as utility distribution systems and electric raceways, is also covered under this category.

RELATED PRODUCTS

Conveyors forming a component part of other equipment are covered under the product category of the particular end product. For example, dishwasher systems having an integral conveyor are covered under Dishwashers, Commercial Certified for Canada (DMGR7); conveyors used in check-out stands are covered under Motor-operated Check-out Stands Certified for Canada (DBNT7); and conveyors used in conjunction with an automated manufacturing process are covered under Factory Automation Equipment Certified for Canada (GPNY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68 (1989), "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

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CORD SETS AND POWER-SUPPLY CORDS CERTIFIED FOR CANADA (ELBZ7)

GENERAL

This category covers (1) general-use extension-cord sets, (2) heater-cord sets, (3) miscellaneous cord sets, (4) special-use-cord sets, (5) power-supply cords, (6) power-supply-cord kits, and (7) replacement-type power-supply cords.

This category also covers bulk certified power-supply cords that are repackaged from their original packaging.

CORD SETS

General-use Extension-cord Set — An assembly consisting of a suitable length of flexible cord, not smaller than 16 AWG, provided with a general-purpose attachment-plug cap at one end and a cord-connector body having the same configuration as the attachment-plug cap at the other end of the cord. All rounded, jacketed cords are of an outdoor type.

The length of a cord set is 6 ft (1.8 m) maximum for 16 AWG cords having an average insulation thickness of 45 mils (e.g., SPT-2); 15 ft (4.5 m) maximum for 16 AWG and larger cords of other than a rounded jacketed construction (e.g., Type SPT-2, HPN, PXWT); 100 ft (30.4 m) maximum for 16 AWG and larger cords of round jacketed cords (outdoor-type cords only being permitted).

Heater-cord Set — An assembly consisting of a suitable length of heater cord incorporating an attachment-plug cap on one end of the cord with or without a thermostatically controlled mechanism on the other end of the cord. The overall length of the cord set, including the fittings but excluding the blades of the attachment-plug cap, is not less than 6 ft, (1.8 m) except that a minimum length of 3 ft (0.9 m) is acceptable for a cord set intended for use with a computer-top appliance.

Miscellaneous Cord Set — Consists of nondetachable special-use-cord sets of the type not intended for general sale, such as nondetachable TV types, probe-type heating appliance cord sets, vacuum cleaner cord sets, etc.

Miscellaneous extension-cord sets consist of a suitable length of flexible cord with an attachment-plug cap on one end and either a female connector or no connector on the other end. At least one of the cap or connector is a special-use type. In the case where no connector is provided, a strain-relief or anti-kink molding or bushing may be incorporated.

Special-use-cord Set — An assembly consisting of a suitable length of flexible cord of a type and size acceptable for the particular application, incorporating an attachment-plug cap on one end of the cord and a special-use fitting suitable for connection to the equipment with which it is intended to be used on the other end of the cord.

Power-supply Cord — An assembly consisting of a suitable length of flexible cord incorporating an attachment-plug cap or cord connector assembled on one end of the cord and may include a through-cord switch, a strain-relief method or connection terminals on the free ends.

Power-supply-cord Kit — Intended for use on ranges or clothes dryers, and consists of a suitable power-supply cord, strain-relief clamp, installation hardware and instructions.

The flexible cord is Type DR or DRT, four conductors, 8 AWG for use with a range and 10 AWG for use with a dryer, or larger if so required by the amp rating of the appliance.

The attachment-plug cap is a right-angle, general-purpose, nonlocking, 3-pole, 4-wire grounding type rated at 50 A, 125/250 V for use on a range and 30 A, 125/250 V for a dryer.

Replacement-type Power-supply Cord — An assembly consisting of a suitable length of two-conductor flexible cord incorporating a molded on or separately attached parallel-blade attachment-plug cap on one end, and with the other end of the cord having the conductors separated for a maximum length of 1 in. (25.4 mm). Replacement power-supply cords are intended for sale to the public for the replacement of original power-supply cords on such items as table and bed lamps, radios, desk and window fans, mantel and wall clocks, and household vacuum cleaners and floor polishers.

The flexible cord is a 6-ft (1.8 m) or 8-ft (2.4 m) length or two-conductor 18 AWG, Type SPT-1 for the table and bed lamps, radios, desk and window fans, mantel and wall clocks, and an 18 ft (5.5 m) or 22 ft (6.7 m) length of two-conductor 18 AWG, Type SV or SVT for household vacuum cleaners and household polishers.

RELATED PRODUCTS

Power-supply cords intended for use with waste disposers are investigated to CSA-C22.2 No. 21, "Cord Sets and Power Supply Cords," and

covered under Waste Disposers, Sink Mounted Certified for Canada (ZDII7). Only those power-supply cords covered under ZDII7 are permitted to be marked "Garbage Disposal Cord," or the equivalent.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II"
CAN/CSA-C22.2 No. 18, "Outlet Boxes, Conduit Boxes, Fittings and Associated Hardware"
CSA-C22.2 No. 21, "Cord Sets and Power Supply Cords"
CSA-C22.2 No. 42, "General Use Receptacles, Attachment Plugs and Similar Wiring Devices"
CSA-C22.2 No. 57, "Appliance Plugs for Heater Cord Sets"
CAN/CSA-C22.2 No. 61, "Household Cooking Ranges"
CAN/CSA-C22.2 No. 64, "Household Cooking and Liquid-Heating Appliances"
CAN/CSA-C22.2 No. 112, "Electric Clothes Dryers"
CSA-C22.2 No. 182.1, "Plugs, Receptacles, and Cable Connectors of the Pin and Sleeve Type"
CSA-C22.2 No. 182.2, "Industrial Locking Type, Special Use Attachment Plugs, Receptacles and Connectors"
CSA-C22.2 No. 182.3, "Special Use Attachment Plugs, Receptacles and Connectors"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate:

"General Use Extension Cord Set"
"Heater Cord Set"
"Miscellaneous Cord Set"
"Power Supply Cord Kit"
"Power Supply Cord"
"Power Supply Cord (Replacement Type)"
"Special Use Cord Set"

All Listing Marks are applied to each individual piece except for "Power Supply Cord." These products are bulk labeled (label applied to smallest container indicating number of pieces) and are not intended for field application.

The Listing Mark for this category requires the use of a holographic label.

* *

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OUTDOOR SEASONAL-USE CORD-CONNECTED WIRING DEVICES CERTIFIED FOR CANADA (ELEI7)

USE AND INSTALLATION

This category covers cord-connected two-pole, three-wire (5 – 15R) wiring device configurations intended for temporary outdoor use only. These devices are intended for use with outdoor equipment, Christmas tree and other seasonal decorative-lighting outfits. They are provided with integral overcurrent protection and may be provided with clock-operated and/or photoelectric switches.

These devices are not intended for permanent installation.

ADDITIONAL INFORMATION

For additional information, see Cord Sets and Power-supply Cords Certified for Canada (ELBZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CSA Technical Information Letter No. A-32, "Interim Certification Requirements for Outdoor Portable Multiple Receptacle Extension Boxes." Within that document there are references to the following:

CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II"
CAN/CSA-C22.2 No. 18 (1998), "Outlet Boxes, Conduit Boxes, Fittings and Associated Hardware"
CSA-C22.2 No. 21 (1995), "Cord Sets and Power Supply Cords"
CSA-C22.2 No. 42 (1999), "General Use Receptacles, Attachment Plugs, and Similar Wiring Devices"

UL MARK

Outdoor Seasonal-use Cord-connected Wiring Devices Certified for Canada (ELEI7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Outdoor Seasonal Use Cord-connected Wiring Device."

The Listing Mark for this category requires the use of a holographic label.

* *

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SEASONAL-USE CORD SETS CERTIFIED FOR CANADA (ELEV7)

USE AND INSTALLATION

This category covers cord sets intended for indoor use only, and indoor and outdoor use with Christmas tree and similar seasonal decorative-lighting outfits. They are provided with integral overcurrent protection and may incorporate outlet fittings that are factory assembled onto the flexible cord between the end fittings.

These cord sets are not intended for permanent installation or for use with other than seasonal lighting products.

PRODUCT MARKINGS

Each indoor-use individual cord set is marked in a permanent manner with the following: "CAUTION: FOR DRY INDOOR USE ONLY AT TEMPERATURES ABOVE 0°C."

Each indoor- and outdoor-use individual cord set is marked in a permanent manner with the following: "SUITABLE FOR INDOOR/OUTDOOR USE – Store Indoors While Not in Use."

ADDITIONAL INFORMATION

For additional information, see Cord Sets and Power-supply Cords Certified for Canada (ELBZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CSA Technical Information Letter No. A-29A, "Seasonal Use Cord Sets." Within that document there are references to the following:

CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II"
CAN/CSA-C22.2 No. 18 (1998), "Outlet Boxes, Conduit Boxes, Fittings and Associated Hardware"
CSA-C22.2 No. 21 (1995), "Cord Sets and Power Supply Cords"
CSA-C22.2 No. 42 (1999), "General Use Receptacles, Attachment Plugs, and Similar Wiring Devices"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Seasonal Use Cord Set."

The Listing Mark for this category requires the use of a holographic label.

* *

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CORROSION-MEASURING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ELHN7)

USE AND INSTALLATION

This category covers corrosion-measuring equipment, including control units, indicators, sensors, probes and auxiliary devices used as part of corrosion-measuring systems.

CORROSION-MEASURING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ELHN7)

Certain products in this category are associated apparatus and are intended for installation in unclassified locations. They are provided with intrinsically safe circuit(s) as indicated on the product, for extension into a hazardous (classified) location.

UNEVALUATED FACTORS

The accuracy of the equipment covered under this category has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Corrosion Measuring Equipment for Use in Hazardous Locations'' or ''Corrosion Measuring Equipment (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

* *

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CORROSION-MEASURING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ELHS7)

GENERAL

This category covers corrosion-measuring equipment, including control units, indicators, sensors, probes and auxiliary devices used as part of corrosion-measuring systems.

Certain products in this category are associated apparatus and are intended for installation in unclassified locations. They are provided with intrinsically safe circuit(s) as indicated on the product, for extension into a hazardous location.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division I and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Corrosion Measuring Equipment for Use in Hazardous Locations'' or ''Corrosion Measuring Equipment (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

* *

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CRANE AND HOIST ELECTRIFICATION SYSTEMS CERTIFIED FOR CANADA (ELPX7)

GENERAL

This category covers crane and hoist electrification systems designed to provide electrical power from a fixed source to moving equipment.

CRANE AND HOIST ELECTRIFICATION SYSTEMS CERTIFIED FOR CANADA (ELPX7)

Rigid electrification systems consist of insulated contact conductors, collectors and feed-in devices, together with supports by which the system may be mounted on tram rails, crane bridges or hoist runways.

INSTALLATION

These systems are intended for installation in accordance with Section 40 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Installation instructions are supplied by the manufacturer for the use of the general contractor, erector, electrical contractor, Authorities Having Jurisdiction and others concerned with the installation.

RATINGS

The maximum voltage rating is 600 V. Each system is rated in volts, frequency and continuous current. Some systems are duty cycle as well as continuous rated. These systems have been tested for a one minute ''on,'' one minute ''off'' cycle. The applicable ampere ratings are marked on the contact conductor or its sheath. Conductor overcurrent protection should not exceed the duty cycle rating.

ENVIRONMENTAL CONDITIONS

Some rigid systems are suitable for outdoor use and are so marked on a main nameplate. See Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) for additional information on environmental conditions and ratings.

SPECIAL CONSIDERATIONS

Crane and hoist electrification systems have not been investigated for mechanical load-carrying ratings. Systems marked with a mechanical load-carrying rating also bear the following marking: ''Mechanical load carrying ratings have not been investigated by UL.''

Crane and hoist electrification systems have not been investigated for use in corrosive atmospheres.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 33, ''Construction and Test of Electric Cranes and Hoists.''

UL MARK

The Listing Mark of UL on each part or on the smallest unit container in which the complete system is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name on each part (e.g., ''Conductor,'' ''Collector,'' ''Insulator'') or the name ''Crane and Hoist Electrification System'' on the smallest complete system container.

* *

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CURRENT TAPS AND ADAPTERS CERTIFIED FOR CANADA (EMDV7)

GENERAL

This category covers devices for providing two or three electrical outlets from a single outlet, such as parallel-blade cube taps and kitchen taps. Devices may contain electronic components for surge suppression and/or filtering, in which case up to six outlets may be provided.

This category does not cover adapters that adapt one form or size of connection to another.

PRODUCT MARKINGS

These devices are marked as follows:

a. Listee's name or identification on device and carton
b. Catalog number or equivalent on device or carton
c. Complete electrical rating

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 42 (1999), ''General Use Receptacles, Attachment Plugs and Similar Wiring Devices.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Current Tap,'' ''Tap'' or ''Cube Tap.''

The Listing Mark for this category requires the use of a holographic label.

* *

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CUSTOM-BUILT KIOSKS CERTIFIED FOR CANADA (EMHH7)

GENERAL

This category covers kiosks, rated 240 V or less, normally found in malls, retail stores, offices and business establishments, educational facilities and other similar environments.

These kiosks are intended but not limited for business applications, electronic point-of-sale, information and product exchange, Internet access or ticket dispensing.

Kiosks may also be provided with electronic access control of storage lockers for the exchange of mail, parcels, packages and the like.

Kiosks consist of a that typically contains a power-supply adapter(s), monitor(s), computer(s), currency-processing equipment, printer(s), fan(s) and speaker(s).

Kiosks are provided with assemblies or subassemblies, consisting of components such as amplifiers, cabling, CD-ROM drive and a floppy drive, clock, keyboard, CPU/monitor, DVD player or from a database on network-server computer, ethernet card (dial-up connection or network link), input devices: trackball, number pad, light-pen/stylus, (magnetic strip) card reader, bar code reader, character keyboard (physical or virtual), Internet connectivity, light sensor enables automatic adjustment of the monitor intensity, modems, monitor (touch screen capacity), movement detector used to call attention of the passersby, multimedia machine with ample RAM and fast hard drive access, power supply, printer: laser, dot matrix, and thermal, serial ports (touch screen), serial and printer ports for any peripheral device like modems or ISDN boards for communications and digital or analog I/O board used to control different kinds of processes, stereo speakers, telecommunications, telephone accessories, "Watched" timer that can ensure that the system resets in unlikely case of hang-ups, UPS or video graphics card.

EQUIPMENT TYPES

Assemblies and subassemblies may include but are not limited to central processing units, disk drives, fiber optic transceivers, monitors, personal computers, plotters, printers, point-of-sale kiosks, scanners, including portable bar code scanners, tape drives, workstations, multimedia equipment/accessories: digital cameras, microphones, speakers, video conferencing systems, network connection equipment. Assemblies and subassemblies may include telecommunication equipment: telephone sets, facsimile machines, ISDN systems and telephones, modems, key telephone systems. Assemblies and subassemblies may include reproduction equipment: copiers or duplicating machines.

Interconnecting cable assemblies: cable assemblies intended for use within the kiosk.

INSTALLATION

Kiosks are intended to be installed in an indoor environment unless identified otherwise in the individual certifications. Kiosks have been determined to be suitable for use in ambient temperatures not exceeding the manufacturer's recommended ambient temperature as specified in the equipment's installation instructions. Kiosks may be cord-and-plug connected or configured for permanent wiring methods. Some kiosks may not be provided with a complete enclosure and are intended for building into a structure as specified in the equipment's installation instructions.

FACTORS NOT INVESTIGATED

Kiosks have not been investigated for security (card readers, badge readers, currency-processing equipment, storage of mail, parcels or packages, and similar equipment) unless specifically identified in the individual certifications. Kiosks are not intended to dispense merchandise.

The physiological effects of chemical substances used in or with this equipment have not been investigated. The long-term characteristics or the possible physiological effects of radio frequency (RF) electromagnetic fields associated with this equipment have not been investigated.

RELATED EQUIPMENT

Automated teller machines (ATMs) investigated for security and burglary resistance are covered under Automated Teller Systems Certified for Canada (TPEU7).

Automated teller machines (ATMs) which have not been investigated for security and burglary resistance are covered under Bank Equipment Certified for Canada (BALT7).

Machines for vending nonrefrigerated food and beverages, general merchandise, etc., are covered under Vending Machines Certified for Canada (YWXV7).

Machines for vending refrigerated food and beverages are covered under Vending Machines, Refrigerated Certified for Canada (SQMX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60950-1 (2007), "Information Technology Equipment – Safety – Part 1: General Requirements." Products intended for outdoor use only are additionally investigated to CAN/CSA-C22.2 No. 60950-22 (2007), "Information Technology Equipment Safety - Part 22: Equipment to be Installed Outdoors."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Custom-built Kiosk," or other appropriate product name as shown in the individual Listings.

* *

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DAMPERS FOR FIRE BARRIER AND SMOKE APPLICATIONS CERTIFIED FOR CANADA (EMME7)

GENERAL

This category covers fire dampers, smoke dampers (leakage-rated dampers), and combination fire and smoke dampers (fire and leakage-rated dampers).

Installation — All dampers covered under this category are intended to be installed in accordance with the installation instructions provided with the dampers. Authorities Having Jurisdiction should be consulted before installation. Unless otherwise indicated in the installation instructions, the annular space between the sleeves of fire dampers and combination fire and smoke dampers and the wall opening should not be filled with firestop materials such as fill, void or cavity materials.

Air-flow and Pressure Ratings — Fire dampers for use in dynamic systems, smoke dampers, and combination fire and smoke dampers are marked with the maximum air flow and static pressure HVAC system conditions for which the damper has been investigated. The air-flow (velocity) ratings are established based on test conditions with the damper in the full open position. The static pressure ratings are established based on test conditions with the damper in the full closed position.

Sizes — The maximum sizes expressed in millimeters representing the maximum width and maximum height are shown in the individual certifications for each fire damper model, for both single sections and multiple section assemblies.

Abbreviations — The following abbreviations are used in the individual certifications:

Fire-protection Rating

- HR Class — Hourly Classification

Damper-mounting Position

- V — Vertical
- H — Horizontal
- V, H — Vertical & Horizontal

Maximum Damper Size

- W — Width
- H — Height

FIRE DAMPERS

Fire dampers are intended for installation where air ducts penetrate or terminate at openings in walls or partitions; in air transfer openings in partitions; and where air ducts extend through floors as specified in the "National Building Code of Canada."

Fire dampers have been investigated for fire-protection ratings of 1-1/2 or 3 h as indicated in the individual certifications.

Fire Dampers for Use in Dynamic Systems — Fire dampers for use in dynamic systems are intended for use in dynamic HVAC systems that remain operational during a fire, and may also be employed in static systems.

Fire Dampers for Use in Static Systems — Fire dampers for use in static systems are intended for use only in static HVAC systems that are automatically shut down in the event of a fire.

SMOKE DAMPERS

Smoke dampers (leakage-rated dampers) are intended for the protection of openings in smoke barriers, or in engineered smoke-control systems as specified in ANSI/NFPA 90A, "Installation of Air-Conditioning and Ventilating Systems."

Leakage ratings for smoke dampers are identified as Class Designation I, II or III as shown in the following table. Leakage ratings of the dampers are established at a minimum differential pressure of 0.995 kPa, across the closed damper. Leakage rates may also be established at higher differential pressures as indicated.

Maximum Leakage ($M^3/S/M^2$)

Class	0.995 kPa	1.49 kPa	1.99 kPa	2.49 kPa	2.99 kPa
I	0.041	0.048	0.056	0.064	0.071
II	0.102	0.123	0.143	0.160	0.179
III	0.408	0.489	0.571	0.064	0.714

Leakage ratings for smoke dampers are determined at ambient temperature after exposing the dampers to temperature degradation at elevated temperatures. The selected temperatures are in increments of 55.6°C with the minimum degradation temperature being 121°C. Alternatively, leakage ratings for smoke dampers can be established based on elevated temperatures at test conditions using heated air flow.

COMBINATION FIRE AND SMOKE DAMPERS

Combination fire and smoke dampers (fire and leakage-rated dampers) are intended for use in locations that are designated as both fire barriers and smoke barriers. Combination fire and smoke dampers have been investigated for both a fire-protection rating of 1-1/2 or 3 h, and a leakage rating as defined under **SMOKE DAMPERS**.

MAINTENANCE

Fire dampers, smoke dampers, and combination fire and smoke dampers may require periodic maintenance to ensure continued proper operation. The level of maintenance required is dependent on several factors including the product manufacturer's and system designer's recommendations, code requirements, and the complexity of the system in which the damper is installed.

It is recommended that periodic maintenance of dampers include at least the following:

- Removal of debris buildup from the damper and surrounding area
- Manual cycling of dampers released by fusible links
- Cycling of damper and actuator assemblies

Additional information on periodic inspection, testing, and maintenance of fire dampers, combination fire and smoke dampers, and ceiling dampers can be found in ANSI/NFPA 80, "Fire Doors and Other Opening Protectives."

Additional information on periodic inspection, testing, and maintenance of smoke dampers and combination fire and smoke dampers can be found in ANSI/NFPA 105, "Installation of Smoke Door Assemblies and Other Opening Protectives."

Additional information on periodic testing of smoke-control systems can be found in ANSI/NFPA 92, "Smoke Control Systems."

RELATED PRODUCTS

For dampers intended for installation in air-handling openings penetrating fire-resistive membrane ceilings, see Ceiling Firestop Flap Assemblies Certified for Canada (CABS7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate fire dampers for use in dynamic systems and fire dampers for use in static systems in this category is CAN/ULC-S112, "Standard Method of Fire Test of Fire-Damper Assemblies."

The basic standard used to investigate smoke dampers in this category is CAN/ULC-S112.1, "Standard for Leakage Rated Dampers for Use in Smoke Control Systems."

Combination fire and smoke dampers are investigated to both CAN/ULC-S112 and CAN/ULC-S112.1.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FIRE DAMPER
FOR USE IN DYNAMIC SYSTEMS
+ HR
No.
or

FIRE DAMPER
FOR USE IN STATIC SYSTEMS
+ HR
No.
or
SMOKE DAMPER
LEAKAGE RESISTANCE CLASS ++-+++
No.
or
COMBINATION FIRE AND SMOKE DAMPER
+ HR
LEAKAGE RESISTANCE CLASS ++-+++
No.

\+ **1-1/2** or **3**
++ **I**, **II** or **III**
+++ Elevated test temperature, °C

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DATA PROCESSING EQUIPMENT, ELECTRONIC CERTIFIED FOR CANADA (EMRT7)

USE AND INSTALLATION

This category covers equipment, appliances and systems rated 600 V or less, normally found in computer/data processing rooms, offices, other business establishments, educational facilities, residences, and other similar environments. The equipment may be electromechanical or electronic in design or any combination thereof. Various groupings of equipment are included in this category, such as:

Data processing equipment: Computers, disk drives, memories, modems, tape drives, terminals.

Desk-top aides: Typewriters, staplers, tape dispensers, pencil sharpeners, erasers, calculators, adding machines, dictation and transcribing machines, microfilm readers, display units.

Mailing, banking and currency-handling equipment: Cash registers, coin counters, feeders and dispensers, accounting machines, check writers, signers and daters, mailing, inserting, numbering and stamping machines, writing machines.

Office aids: File cabinets, collators, sorters, shredders, deleavers, cutters, stackers, bursters, conveyors, folding, embossing and sealing machines.

Reproduction equipment: Duplicating machines, copiers, reproduction printers, microfilm printers, exposure machines, processors, enlargers, transparency makers, facsimile machines.

The category also covers computer power centers and power distribution units which are investigated as part of the computer system. These units are supplied by a branch circuit and distribute power to other units in the computer system by means of interconnecting cable assemblies.

Many of these units and systems require special installation, such as separate transformer and branch-circuit power, power supplies, special grounding methods, high-frequency motor generator equipment, air conditioning, etc. Such features are covered in the manufacturer's installation instructions.

The individual units comprising a system installation are designed to be interconnected and installed by one of the wiring methods outlined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

When certified equipment intended for use with a detachable power-supply cord is not provided with such a cord, a cord suitable for connection of the equipment to the branch circuit is separately provided.

ACCESSORIES

Field-installed accessories to certified equipment are provided with suitable markings and/or instructions detailing proper installation or assembly of the accessory with either specific or generic Listed equipment specified in the markings or instructions.

PHYSIOLOGICAL EFFECTS

The physiological effects of chemical substances used in or with this equipment have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 220 (1991), "Information Processing and Business Equipment."

As of April 1, 2000, new product submittals for electronic data processing equipment are investigated to CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements,"

and are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Main Frame Computer,'' ''Power Distribution Unit,'' ''Personal Computer,'' ''Data Processing Equipment,'' ''Electronic Data Processing Equipment'' (or ''E.D.P. Equipment''), ''Card Punch,'' ''Card Reader,'' ''Computer,'' ''Data Set,'' or the name of the specific type of product as shown in the individual Listings.

The Listing Mark for field-installed accessories includes the word ''Accessory.''

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DATA PROCESSING EQUIPMENT, ELECTRONIC FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ENWS7)

GENERAL

This category covers individual units and systems, primarily electronic in function and design, which are intended to accumulate, process or store data, and which are intended for use in or have circuits or system units intended for use in areas classified as hazardous locations.

Many of these units and systems require special installation, such as a separate transformer and branch circuit power, power supplies, special grounding methods, high-frequency motor generator equipment, etc. Such features are covered in the manufacturer's installation instructions.

Intrinsically safe equipment is so marked on the product.

To maintain the intrinsically safe features of battery-operated appliances, only batteries of the type and size indicated on the product should be used.

RECONDITIONED PRODUCTS

This category also covers data processing equipment that is reconditioned by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills (reconditioned data processing equipment may also be referred to as rebuilt). Reconditioned data processing equipment is reconditioned to the extent necessary by disassembly and reassembly using new or reconditioned parts. Reconditioned data processing equipment is subject to the same requirements as new data processing equipment.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Data Processing Equipment for Use in Hazardous Locations,'' ''Electronic Data Processing Equipment for Use in Hazardous Locations,'' (or ''E.D.P. Equipment for Use in Hazardous Locations''), ''Data Processing Equipment with Circuits for Use in Hazardous Locations,'' ''Electronic Data Processing Equipment with Circuits for Use in Hazardous Locations'' (or ''E.D.P. Equipment with Circuits for Use in Hazardous Locations''), ''Data Processing Equipment (Associated Apparatus),'' ''Electronic Data Processing Equipment (Associated Apparatus)'' (or ''E.D.P. Equipment (Associated Apparatus)''), or the name of the specific type of product as shown in the individual Listings.

For reconditioned products, the word ''Reconditioned'' or ''Rebuilt'' precedes the product name.

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DATA PROCESSING EQUIPMENT, ELECTRONIC FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ENYB7)

GENERAL

This category covers individual units and systems, primarily electronic in function and design, which are intended to accumulate, process or store data, and which are intended for use in or have circuits or system units intended for use in areas classified as hazardous locations.

Many of these units and systems require special installation, such as a separate transformer and branch-circuit power, power supplies, special grounding methods, high-frequency motor-generator equipment, etc. Such features are covered in the manufacturer's installation instructions.

Intrinsically safe equipment is so marked on the product.

To maintain the intrinsically safe features of battery-operated appliances, only batteries of the type and size indicated on the product should be used.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Data Processing Equipment for Use in Hazardous Locations,'' ''Electronic Data Processing Equipment for Use in Hazardous Locations'' (or ''E.D.P. Equipment for Use in Hazardous Locations''), ''Data Processing Equipment with Circuits for Use in Hazardous Locations,'' ''Electronic Data Processing Equipment with Circuits for Use in Hazardous Locations'' (or ''E.D.P. Equipment with Circuits for Use in Hazardous Locations''), ''Data Processing Equipment (Associated Apparatus),'' ''Electronic Data Processing Equipment (Associated Apparatus)'' (or ''E.D.P. Equipment (Associated Apparatus)''), or the name of the specific type of product as shown in the individual Listings.

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DEODORIZERS AND AIR FRESHENERS CERTIFIED FOR CANADA (EOGX7)

GENERAL

This category covers cord-connected or direct-plug-in appliances intended for deodorizing or scenting air, or both, by the dispersal of chemicals, fragrances, or both, in relatively small areas. Air fresheners may or may not have mechanical filters.

This category also covers air fresheners and deodorizers employing heating elements, electronic circuits, motor-operated fans (or combinations thereof) and mechanical filters.

FACTORS NOT INVESTIGATED

The physiological effects of the operation of these appliances, beneficial or otherwise, have not been investigated.

RELATED PRODUCTS

Products covered under this category have not been investigated for use as insect-repellent dispensers. Such products are covered under Insect- and Rodent-control Equipment Certified for Canada (NYKX7).

Products covered under this category have not been investigated as electrostatic air cleaners. Such products are covered under Electrostatic Air Cleaners Certified for Canada (AGGZ7).

Products covered under this category have not been investigated as air-filtering appliances. Such products are covered under Air-filtering Appliances Certified for Canada (AEDX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113 (1984), ''Fans and Ventilators,'' and/or CAN/CSA-C22.2 No. 64 (2010), ''Household Cooking and Liquid-Heating Appliances.''

Direct-plug-in air fresheners and deodorizers provided with illumination are additionally investigated to CSA-C22.2 No. 256 (2005), ''Direct Plug-In Nightlights.''

Additional standards may be applicable based on the features employed. In addition, CSA Technical Information Letter C-37, ''Input Ratings for Cord-Connected Heating and Cooking Appliances, Hairdressing Equipment and Electric Irons for Household Use'' (issued 2-28-05), may also be used as applicable.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Air Freshener,'' ''Deodorizer'' or ''Fan Type Deodorizer.''

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DECORATIVE GAS-FIRED APPLIANCES CERTIFIED FOR CANADA (EOHS7)

DECORATIVE GAS-FIRED APPLIANCES FOR INSTALLATION IN VENTED FIREPLACES CERTIFIED FOR CANADA (EOIM7)

USE AND INSTALLATION

This category covers gas-fired decorative appliances for installation in factory-built or masonry sold-fuel-burning fireplaces. These appliances are self-contained, freestanding appliances whose primary function lies in the aesthetic effect of the flame. These appliances are provided with means of automatic ignition (such as a pilot), but are not thermostatically controlled.

Gas-fired appliances are intended to be installed only in solid-fuel-burning factory-built or masonry fireplaces in accordance with the manufacturer's installation instructions and the markings on the appliance. The appliance is intended to be connected to a gas supply of the type specified on the appliance. Equipment is intended to be installed in accordance with the current edition of ANSI Z223.1/NFPA 54,''National Fuel Gas Code,'' and CAN/CGA-B149, ''Canadian Installation Code.''

RELATED PRODUCTS

See Decorative Gas-fired Fireplaces Certified for Canada (EOJH7) and Gas Fireplace Heaters, Vented Certified for Canada (LPPM7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.60/CGA 2.26, ''Decorative Gas Appliances for Installation in Solid-Fuel Burning Fireplaces.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.60(+) CGA 2.26(+)-(++) Decorative Appliance for Installation in Solid-Fuel Burning Fireplaces.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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Decorative Gas-fired Appliances for Installation in Vented Fireplaces Certified for Canada (EOIM7)−*Continued*

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DECORATIVE OUTDOOR GAS-FIRED FIREPLACES CERTIFIED FOR CANADA (EOJA7)

USE AND INSTALLATION

This category covers gas-fired fireplaces intended for outdoor installation only. These appliances are self-contained appliances whose primary function lies in the aesthetic effect of the flame.

Gas-fired decorative appliances are intended to be installed in accordance with the markings on the appliance and intended to be connected to a gas supply of the type with which the appliance is intended to be fired. Equipment is intended to be installed in accordance with the current edition of CSA-B149.1, ''Natural Gas and Propane Installation Code.''

RELATED PRODUCTS

See Decorative Gas-fired Appliances for Installation in Vented Fireplaces Certified for Canada (EOIM7), Decorative Vented Gas-fired Fireplaces Certified for Canada (EOJH7), and Gas Fireplace Heaters, Vented Certified for Canada (LPPM7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of the CSA International Requirement CR-97-003, ''Requirements for Outdoor Gas Fireplaces.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''CGA-CR-97-003, Outdoor Fireplace.''

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DECORATIVE VENTED GAS-FIRED FIREPLACES CERTIFIED FOR CANADA (EOJH7)

USE AND INSTALLATION

This category covers vented gas-fired fireplaces. These appliances allow for the viewing of the flame and provides the simulation of a solid-fuel fireplace. The circulation of heated room air may be by gravity forces or by mechanical means. A vented gas fireplace may be freestanding, recessed or zero clearance, or a gas fireplace insert. The fireplaces may be direct vented, gravity vented or power vented.

Gas-fired decorative appliances are intended to be installed in accordance with the installation instructions and markings on the appliance, and intended to be connected to a gas supply of the type specified on the appliance. Equipment is intended to be installed in accordance with the current edition of ANSI Z223.1/NFPA 54, ''National Fuel Gas Code,'' and CAN/CGA-B149, ''Canadian Installation Code.''

RELATED PRODUCTS

See Decorative Gas-burning Appliances for Installation in Vented Fireplaces Certified for Canada (EOIM7) and Vented Gas Fireplace Heaters Certified for Canada (LPPM7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.50/CSA 2.22, ''Vented Gas Fireplaces.''

UL MARK

Decorative Vented Gas-fired Fireplaces Certified for Canada (EOJH7)−*Continued*

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.50(+) CSA 2.22(+)-(++) Vented Gas Fireplace.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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DIE-CUTTING DEVICES CERTIFIED FOR CANADA (EOUG7)

USE

This category covers manually operated die-cutting devices, such as offset presses and similar manually fed mechanical die-cutting equipment. They are typically intended for use in household and light commercial applications, such as arts and crafts shops.

This category does not cover industrial devices.

SPECIAL CONSIDERATIONS

These devices are investigated with respect to accessibility to pinch points, sharp edges and stability.

Some products in this category have cutting or moving parts, presenting certain inherent hazards related to risk of injury that cannot be wholly eliminated by practical design features. The products are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of injury where consideration has been given to the required utility of the product.

Attachments that perform functions other than intended by the basic design have not been investigated unless specifically mentioned in the individual certifications and covered in the installation and use instructions.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II'' (General Requirements Clauses 4.4 – 4.6).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Manual Cutting Device'' or ''Die-cutting Device.''

* *

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DIMMERS CERTIFIED FOR CANADA (EOVZ7)

DIMMERS, COMMERCIAL CERTIFIED FOR CANADA (EOXT7)

USE

This category covers incandescent and fluorescent commercial dimmers intended for mounting in flush device boxes or on outlet box covers (wall box), unless otherwise stated in the individual certifications. They are intended for control of single- or multi-output lighting circuits. They are intended only for the control of permanently installed luminaires.

RELATED PRODUCTS

Dimmers intended for use in residential applications are covered under Dimmers, General Use Switch Certified for Canada (EOYX7). Additional special-application dimmers are covered under Dimmers, Theater Certified for Canada (EPAR7) and Dimmers, Theater, Controls Certified for Canada (EPCT7).

Dimmers, Commercial Certified for Canada (EOXT7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Commercial Dimmer.''

* *

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DIMMERS, GENERAL-USE SWITCH CERTIFIED FOR CANADA (EOYX7)

GENERAL

This category covers dimmers for mounting in flush device boxes or on outlet box covers (wall box), unless otherwise stated in the individual certifications. They are intended only for the control of permanently installed luminaires.

RATINGS

Dimmers are rated maximum 600 V ac (120 V ac for touch dimmers) and are intended for installation on a 20 A or less branch circuit. Dimmers are rated for lamp or lamp control loads from 300 W or 300 VA to a maximum of 2000 W or 2000 VA. They have been investigated for use in nominal 25°C environments, unless otherwise stated in the individual certifications.

PRODUCT MARKINGS

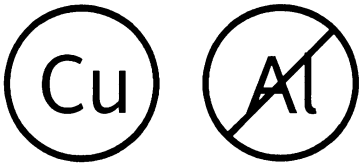
Dimmers may include one or more of the following installation-related markings:

On the dimmer:

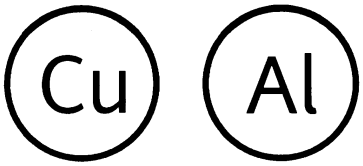
''For Control of Permanently Installed _____ Lamp Fixtures Only,'' or the equivalent. The blank identifies the type of lighting (luminaire) load, such as ''Incandescent,'' ''Fluorescent'' or ''Low Voltage.''

''Use _____ wire only,'' where the blank indicates ''copper'' or ''CU,'' ''aluminum'' or ''AL,'' or both. If symbols are used, they shall be as follows:

For a terminal rated for copper wire only:



For a terminal rated for use with both copper and aluminum wire:



On the dimmer, on a separate instruction sheet packaged with the dimmer, or on the smallest unit packaging provided with the dimmer, the word ''CAUTION'' followed by one of the statements or equivalent as indicated below based upon the intended load:

For dimmers controlling a ballast — ''To Reduce the Risk of Overheating and Possible Damage to Other Equipment, Do Not Install to Control a Receptacle, a Motor-operated Appliance, or a Transformer-supplied Appliance,'' or

For dimmers controlling a tungsten-filament load — ''To Reduce the Risk of Overheating and Possible Damage to Other Equipment, Do Not Install to Control a Receptacle, a Motor-operated Appliance, a

Dimmers, General-use Switch Certified for Canada (EOYX7)−*Continued*

Fluorescent Lighting Fixture, or a Transformer-supplied Appliance,'' or

For dimmers controlling a low-voltage transformer — ''To Reduce the Risk of Overheating and Possible Damage to Other Equipment, Do Not Install to Control a Receptacle, or a Motor-operated Appliance''

Additionally, one or more of the following markings may appear on the dimmer, on a separate instruction sheet packaged with the dimmer, or on the smallest unit packaging provided with the dimmer:

''For multiple ganged installations apply derating factor''

''For use with _____,'' where the blank identifies specific manufacturers and models of electronic ballast, electronic power supply or low-voltage supply.

''For use with magnetic ballast _____,'' where the blank identifies specific manufacturers and models. If no specific manufacturer or model is specified, the dimmer is rated for control of any magnetic ballast.

''For use with Class 2 supply only''

''For splicing _____ wires, sized _____ AWG, use the provided wire splicing connector. Strip conductors to _____ length'' (or equivalent description), where the blanks indicate the number of conductors, maximum size and length of prepared striped conductor, respectively.

''For supply connection, use wires rated minimum 75°C''

RELATED PRODUCTS

Dimmers used for special applications are covered under Dimmers for Commercial Use Certified for Canada (EOXT7), Dimmers for Theater Use Certified for Canada (EPAR7) and Controls for Theater Dimming Equipment Certified for Canada (EPCT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 184, ''Solid-State Lighting Controls.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Dimmer.''

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DIMMERS, THEATER CERTIFIED FOR CANADA (EPAR7)

USE

This category covers luminaire dimmers intended for use in motion picture and television studios as well as theater and similar locations. The dimmers may be intended for portable use, rack mounting, or be suitable for permanent installation. This category also covers theater dimming modules intended for mounting in theater switchboards.

RELATED PRODUCTS

Dimmers not intended for motion picture and television studio or theater stage use are covered under Dimmers, Commercial Certified for Canada (EOXT7).

For theater switchboards incorporating removable dimming modules, see Switchboards, Special Purpose Certified for Canada (WFJX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14 (1991), ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Theater Dimmer.''

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Dimmers, Theater Certified for Canada (EPAR7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Dimmers, Theater, Controls Certified for Canada (EPCT7)

GENERAL

This category covers control units intended to interface with stage, studio and theater lighting dimming equipment.

These units may be provided with various user controls. The units are provided with a number of control outputs to operate different types of dimming equipment and associated equipment, such as moving luminaires and special effects equipment. They may be provided with integral computer systems.

OUTPUT CONNECTORS/CIRCUITS

All low-voltage output circuits, including those associated with the Universal Serial Bus (USB), IEEE 1394 bus, PS/2 connectors, MIDI and DMX512, as well as those for local task lighting, comply with requirements for Class 2 circuits in accordance with Section 16 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and are marked ''Class 2.''

ADDITIONAL INFORMATION

For additional information, see Dimmers, Theater Certified for Canada (EPAR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60950, ''Safety of Information Technology Equipment,'' or CAN/CSA-C22.2 No. 60950-1, ''Information Technology Equipment – Safety – Part 1: General Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Theater Lighting Control Console,'' or other appropriate product name as shown in the individual Listings.

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DIRECT-PLUG-IN AND CORD-CONNECTED CLASS 2 POWER UNITS CERTIFIED FOR CANADA (EPBU7)

USE

This category covers indoor and outdoor use Class 2 power supplies and battery chargers intended for use on alternating-current branch circuits with a maximum potential of 150 V to ground. Products covered are (1) direct-plug-in units provided with 15 A blade configurations for use on nominal 120 V branch circuits, and (2) cord-and-plug-connected units for use on nominal 120 or 240 V branch circuits.

These units utilize an isolating transformer and may incorporate components to provide an alternating- or direct-current output. These products have been investigated only for general use (unless otherwise marked) in unclassified locations. Each output complies with Class 2 voltage, current and volt-ampere limits as specified in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Maximum output voltage does not exceed 42.4 V peak or direct current.

PRODUCT MARKINGS

If indicated for a specific end use in the individual certifications (such as for use with audio, radio, and television-type equipment), the products are so marked and have also been investigated to additional requirements found in the appropriate end-use product standard.

Class 2 power units intended for use with specific end-use product types that may involve mechanical hazards (such as gardening appliances or tools) are covered as part of the certified appliance or tool.

RELATED PRODUCTS

Class 2 power units intended for permanent electrical connection to the supply source are covered under Power Supplies, Specialty Certified for Canada (QQIJ7) or Transformers, Class 2 Certified for Canada (XOKV7).

Class 2 power units intended for use with medical and dental equipment are covered under Power Supplies for Use in Health Care Facilities Certified for Canada (KFCG7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 223, ''Power Supplies with Extra-Low-Voltage Class 2 Outputs.''

Products suitable for outdoor use are also investigated to CSA Technical Information Letter No. I-42, ''Interim Certification Requirements for Direct Plug-In and Cord-Connected Power Supplies with Extra-Low-Voltage Class 2 Output for Outdoor Use.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Class 2 Power Supply,'' ''Class 2 Transformer,'' ''Class 2 Power Unit,'' ''Class 2 Battery Charger,'' or other appropriate product name as shown in the individual Listings. The word ''Transformer'' may be abbreviated ''XFMR,'' ''XFRMR'' or ''XFORMER.''

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DISPENSING DEVICES CERTIFIED FOR CANADA (EPWR7)

This category covers dispensing devices intended for flammable and combustible liquids and LP-gas in the liquid stage. Flammable and combustible liquids include the common gasoline and diesel engine fuels and the lighter heating oils.

These devices are intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

DISPENSING-DEVICE ACCESSORIES CERTIFIED FOR CANADA (EQJZ7)

Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7)

USE AND INSTALLATION

This category covers equipment intended for use in service-station environments for the control and monitoring of flammable liquid and LP-gas dispensing devices and related delivery systems, and is intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Control and monitoring equipment includes products such as transmitters, receivers, pressure actuators, power-reset units and money-acceptance consoles used in the assembly of or in conjunction with dispensing devices to initiate, record, program, actuate or monitor the operation of the dispensing device or remotely-located accessories.

Monitoring equipment also includes products intended to monitor aboveground and underground fuel storage tanks for liquid level, and to monitor aboveground and underground fuel storage tanks, related piping and the surrounding environment for leaks. Unless indicated otherwise in the individual certifications, the leak-detection capability of the product has not been investigated.

This category also covers auxiliary equipment not intended to control or monitor dispensing devices used in unclassified locations over or adjacent to Class I, Group D, Division 2 hazardous (classified) locations.

These devices are intended for use in unclassified locations that may or may not be over a hazardous (classified) location, as indicated in the individual certifications.

This category does not cover safety or emergency controls that automatically or manually interrupt the operation of a dispensing device.

When the product is intended for use with specifically identified equipment, this is shown in the installation instructions or marking, and in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices Certified for Canada (EPWR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7)−*Continued*

The basic standards used to investigate products in this category are:

CSA-C22.2 No. 4, ''Enclosed and Dead-Front Switches''
CSA-C22.2 No. 14, ''Industrial Control Equipment''
CSA-C22.2 No. 22, ''Electrical Equipment for Flammable and Combustible Fuel Dispensers''
CAN/CSA-C22.2 No. 94, ''Special Purpose Enclosures''
CSA-C22.2 No. 142, ''Process Control Equipment''
CAN/CSA-C22.2 No. 157, ''Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations''
CSA-C22.2 No. 213, ''Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations''
CAN/CSA-C22.2 No. 60950-1, ''Information Technology Equipment – Safety – Part 1: General Requirements''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Control Console'' or ''Interconnection Box,'' or other appropriate product name as shown in the individual Listings.

When the product is intended for use with specifically identified equipment, this is shown in the installation instructions or marking, and in the individual Listings.

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Emergency Breakaway Couplings Certified for Canada (ERBY7)

USE AND INSTALLATION

This category covers emergency breakaway couplings intended for use in the assembly of dispensing systems to reduce the risk of damage to a dispensing device in the event of the fueled vehicle being driven away with the hose nozzle valve still in the fill-pipe opening. These devices are either single line or coaxial vapor recovery constructions and are for use with the type of liquids indicated in the individual certifications.

The design of the emergency breakaway coupling and the configuration of the dispensing device with which it is used may involve restrictions in the mounting location. These limitations are detailed in the installation instructions provided with each coupling.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S644, ''Emergency Breakaway Fittings for Flammable and Combustible Liquids.''

Emergency breakaway couplings provided with a swivel connector are additionally investigated to CAN/ULC-S634, ''Hose Swivel Connectors for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Emergency Breakaway Coupling for Flammable Liquids'' or ''Vapor Recovery Emergency Breakaway Coupling for Flammable Liquids,'' or other appropriate product name as shown in the individual Listings.

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Swivel Connectors Certified for Canada (ERLV7)

USE AND INSTALLATION

This category covers swivel connectors intended for use in the assembly of dispensing devices to facilitate handling the hose nozzle valve without

Swivel Connectors Certified for Canada (ERLV7)−*Continued*

subjecting the hose to twisting or torsional stress. These devices are either single-line or coaxial vapor-recovery construction and are for use with the types of liquids indicated in the individual certifications. Those for flammable liquids, which includes combustible liquids, are for use with gasoline, fuel oil, kerosene, and similar fuels where the working pressure does not exceed 345 kPa.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S634, ''Hose Swivel Connectors for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Swivel Connector for Flammable Liquids'' or ''Vapor Recovery Swivel Connector for Flammable Liquids,'' or other appropriate product name as shown in the individual Listings.

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Valves Certified for Canada (ERZT7)

Hose Nozzle Valves Certified for Canada (ESNR7)

Flammable Liquid Hose Nozzle Valves Certified for Canada (ETAZ7)

USE AND INSTALLATION

This category covers flammable liquid hose nozzle valves of the self-closing type intended for dispensing flammable liquids. Hose nozzle valves classified as ''interchangeable service-station type'' are intended for use with service-station-type dispensing devices. Valves so classified are suitable for use with any power-operated dispensing device for flammable liquids when the marking on the dispensing device includes the statement, ''For use only with Interchangeable Service-Station Type Hose Nozzle Valve Certified for Canada.''

Hose nozzle valves which are not so classified include types intended for use on farms and isolated construction projects, vapor-recovery-type hose nozzle valves, and those intended to be factory furnished with the dispenser by the dispenser manufacturer.

Hose nozzle valves are also designated as ''automatic closing type with latch-open device,'' ''automatic closing type without latch-open device'' or ''manual'' type. An automatic-closing type without a latch-open device and a manual type must be manually held open during the dispensing operation.

REBUILT PRODUCTS

This category also covers hose nozzle valves that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt hose nozzle valves are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt hose nozzle valves are subject to the same requirements as new hose nozzle valves.

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices Certified for Canada (EPWR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S620 (2007), ''Hose Nozzle Valves for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Interchangeable Service Station Type Hose Nozzle Valve for Flammable Liquids,'' ''Hose Nozzle Valve for Flammable Liquids'' or ''Vapor Recovery Type Hose Nozzle Valve for Flammable Liquids,'' or other appropriate product name as shown in the individual Listings.

Flammable Liquid Hose Nozzle Valves Certified for Canada (ETAZ7)−*Continued*

For rebuilt products, the word ''Rebuilt'' precedes the product name.

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Shutoff Valves, Emergency Certified for Canada (EUCV7)

USE

This category covers emergency shutoff valves intended for use with power-operated dispensing devices handling flammable liquids (other than LP-gas). They incorporate a thermal element and are designed to close automatically in the event of breakoff resulting from severe impact or fire exposure.

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices Certified for Canada (EPWR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S651 (2007), ''Emergency Valves for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Emergency Shut-Off Valve for Flammable Liquids.''

If the Listing Mark is cast or molded into the product, the product identity may be omitted. However, the complete Listing Mark, including the product identity, will also be provided on the smallest unit container in which the product is packaged.

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Dispensing-device Accessories, Miscellaneous Certified for Canada (EUQT7)

GENERAL

This category covers equipment intended to be installed as individual devices or in conjunction with other service-station equipment.

This equipment is intended for use with the following fuels:

a) Gasoline
b) Gasoline/ethanol blends designated as ''gasohol'' (E10 maximum)
c) Diesel fuel
d) Fuel oil
e) Kerosene

ADDITIONAL INFORMATION

For additional information, see Dispensing Devices Certified for Canada (EPWR7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following:

ULC/ORD-C842, ''Guide for the Investigation of Valves for Flammable and Combustible Liquids''
CAN/ULC-S634, ''Hose Swivel Connectors for Flammable and Combustible Liquids''
ULC-S651, ''Emergency Valves for Flammable and Combustible Liquids''
CSA B346, ''Power-Operated Dispensing Devices for Flammable Liquids''
CSA-C22.2 No. 30, ''Explosion-Proof Enclosures for Use in Class I Hazardous Locations''
CSA-C22.2 No. 142, ''Process Control Equipment''
CSA-C22.2 No. 145, ''Motors and Generators for Use in Hazardous Locations''
CAN/CSA-C22.2 No. 157, ''Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations''

UL MARK

Dispensing-device Accessories, Miscellaneous Certified for Canada (EUQT7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Dispensing Device Accessory.''

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POWER-OPERATED DISPENSING DEVICES CERTIFIED FOR CANADA (EWFX7)

This category covers power-operated dispensing devices intended primarily for dispensing motor fuels or other flammable liquids at service stations. They consist essentially of a power-operated pumping unit, strainer, metering device, valves, single or multiple dispensing outlets, etc., with control apparatus designed to stop the discharge of liquid automatically when the hand control is released by the operator. They may comprise complete self-contained units mounted in a suitable pedestal and housing or separate assemblies with controls and other apparatus mounted on a panel or in a pedestal installed remote from pumping unit.

These devices are designed to comply with requirements for installation either inside or outside of buildings.

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Flammable Liquid Dispensing Devices, Power Operated Certified for Canada (EWTV7)

USE

This category covers power-operated dispensing devices intended for use with the following fuels:

a) Gasoline
b) Gasoline/ethanol blends designated as ''gasohol'' (E10 maximum)
c) Diesel fuel
d) Fuel oil
e) Kerosene

A power-operated dispensing device establishes hazardous locations in and around the product as a result of its design and construction and is not intended to be used in hazardous locations resulting from external factors, such as installation near aboveground tanks, LP gas or CNG dispensers. The dispensing device has Class I, Zone 1 and 2 locations within it but may also contain areas that are nonhazardous because of the dispenser construction. Dispensers with nonhazardous areas within them are not suitable for use in a Zone 2 location that is based on external factors. Dispensers suitable for use in Zone 2 locations that are based on external factors are marked to identify this use.

These products are intended for installation and use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Power-operated Dispensing Devices Certified for Canada (EWFX7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

- CSA B346, ''Power-Operated Dispensing Devices for Flammable Liquids''
- CSA-C22.2 No. 22, ''Electrical Equipment for Flammable and Combustible Fuel Dispensers''
- CSA-C22.2 No. 25 (1966), ''Enclosures for Use in Class II Groups E, F and G Hazardous Locations''
- CSA-C22.2 No. 30, ''Explosion-Proof Enclosures for Use in Class I Hazardous Locations''
- CAN/CSA-C22.2 No. 157, ''Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power-operated Dispensing Device for Flammable Liquids'' or ''Power-operated Dispensing Device for Flammable Liquids for Use in Class I, Zone 2 Hazardous Locations.''

Flammable Liquid Dispensing Devices, Power Operated Certified for Canada (EWTV7)−*Continued*

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DISTRIBUTED GENERATION POWER SYSTEMS EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FCHD7)

PHOTOVOLTAIC CHARGE CONTROLLERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FCJC7)

USE AND INSTALLATION

This category covers permanently connected photovoltaic charge controllers that control the state of charge of storage batteries used in photovoltaic power systems.

Photovoltaic charge controllers are rated 600 V dc or less and are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code.''

These products include photovoltaic charge controller subassemblies for field installation in the terminal compartment of a photovoltaic module, in accordance with the instructions supplied with the subassembly. The markings identify the modules in which the subassemblies may be installed. The modules and subassemblies are products of the same manufacturer.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 107.1 (2001), ''General Use Power Supplies.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Photovoltaic Charge Controller for Use in Hazardous Locations'' or ''Photovoltaic Charge Controller Subassembly for Use in Hazardous Locations.''

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PHOTOVOLTAIC MODULES AND PANELS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FCJU7)

USE AND INSTALLATION

This category covers flat-plate photovoltaic modules and panels intended for mounting on buildings or on ground-supported frames.

Roof-mounted modules and panels are investigated for one of three mounting methods: (1) integral to the roof of a building, (2) directly on a building's roof, or (3) on a rack with a space above the roof surface.

Photovoltaic Modules and Panels for Use in Hazardous Locations Certified for Canada (FCJU7)−*Continued*

Photovoltaic modules and panels are intended to be connected to electrical loads, controllers, or to power conditioning units that convert the dc power the modules and panels generate to other types of power compatible with the intended loads. In addition to their voltage, current, and power ratings, modules and panels are marked to indicate terminal polarity, maximum series overcurrent device rating, and minimum acceptable diode bypassing (if needed). Installation of the modules and panels, including connection between the modules and the panels and the load, power conditioning unit or controller is intended to be in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Authorities Having Jurisdiction should be consulted as to conformance with applicable building codes.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is ULC/ORD-C1703, "Flat-Plate Photovoltaic Modules and Panels." In addition, CAN/ULC-S107, "Methods of Fire Tests of Roof Coverings," is used to determine the module's resistance to external fire exposure for modules marked Class A, B or C.

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Photovoltaic Module for Use in Hazardous Locations" or "Photovoltaic Panel for Use in Hazardous Locations."

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DOOR, DRAPERY, GATE, LOUVER AND WINDOW OPERATORS AND SYSTEMS CERTIFIED FOR CANADA (FDDR7)

USE AND INSTALLATION

This category covers electrical and pneumatic door and gate systems, and door, drapery, gate, louver, window and turnstile operators, together with controls and accessories for use with such operators and similar devices.

This category covers door operators that have been investigated from an electrical and casualty viewpoint only. For door operators that have been additionally investigated for use on fire doors, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7).

This category does not cover the glass portions of the partitions, panels, or sections, associated with the operators and/or controls, unless indicated in the individual certifications.

Door and gate systems include doors or gates, operators and controls tested as complete units. Components of a system are specifically designated in the installation instructions provided with the system.

Residential door operators are intended for intermittent use on counterbalanced doors, usually of the overhead type, in residential buildings of one to four single-family occupancies. When provided, external entrapment-protection devices, such as photoelectric sensors or door-edge sensors, should be installed in accordance with the installation instructions provided. In addition, all installation instructions, including the installation of warning labels adjacent to the wall-mounted actuating switch, should be followed.

Accessories for residential garage door operators, such as external entrapment-protection devices, should be installed and used only on door operators for which they are intended as marked on the installation instructions and/or packaging.

Commercial and industrial door operators are not intended to be installed in applications where the load exceeds the maximum power in foot-pounds per second or the maximum pull in pounds marked on the appliance. Light-duty, commercial vehicular door or door operators are not intended to be installed in locations where the number of operations per hour exceed that marked on the appliance.

Operators intended for use with other than counter-balanced types of doors, gates or windows are tested in conjunction with the doors, gates or windows for which they are designed.

Residential drapery operators are intended for intermittent use, controlling a maximum drapery weight of one pound per foot, unless otherwise marked.

Commercial drapery operators are intended for intermittent use, controlling drapery of the maximum weight marked on the assembly.

It has been determined that the casualty hazards inherent in the products covered under this category have been reduced to an acceptable degree; however, the ultimate safety is dependent upon proper installation. Authorities Having Jurisdiction should be consulted prior to installation. Installation should be performed by a qualified installer using the manufacturer's instructions. Special care should be exercised during installation of all operators to ensure that recommended safety devices, such as photoelectric sensors or reversing-edge switches, are properly installed. When so marked, industrial door operators should be mounted a minimum of 2.44 m (8 ft) above the floor.

This category does not cover the burglary- and theft-protection features of vault doors or burglary-resistant, electrically operated door mechanisms intended to control the opening and closing of cell doors in a prison or institution.

RELATED PRODUCTS

This category does not cover door operators incorporated as integral parts of walk-in panel units for use with refrigerator cooler installations; see Door Panel Assemblies Certified for Canada (FDIT7).

This category does not cover door or gate systems or other assemblies including break-out or hinged sections intended to facilitate safe egress of persons in case of emergency; see Panic Hardware Certified for Canada (FVSR7), Fire Door Closers, Holders and Operators Certified for Canada (GTBT7) and Fire Door Operators with Automatic Closers Certified for Canada (GUJY7).

This category does not cover industrial control panels used for motor-control functions; see Motor Controllers, Magnetic Certified for Canada (NLDX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 247 (1992), "Operators and Systems of Doors, Gates, Draperies and Louvres."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Door Operator," "Gate Operator," "Drapery Operator," "Window Operator," "Louver Operator," or other appropriate product name as shown in the individual Listings.

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DOOR HOLDERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FDGF7)

GENERAL

This category covers door holders intended for use with swinging, sliding or rolling fire doors as indicated in the individual certifications. They are designed to hold doors in the open position under normal usage and release the doors under fire conditions. They are intended to be used with a suitable door closer and automatic operating devices or systems.

Authorities Having Jurisdiction should be consulted to determine the acceptability of the door, door holders, door closer and automatic operating device or other combination of system units for any given location.

RELATED PRODUCTS

For information on door closers, see Fire Door Accessories Certified for Canada (GVUW7) and Fire Door Closers, Holders and Operators Certified for Canada (GTBT7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is ULC/ORD-C228 (1995), ''Door Closers and Holders.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Door Holder for Use in Hazardous Locations.''

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DOOR PANEL ASSEMBLIES CERTIFIED FOR CANADA (FDIT7)

GENERAL

This category covers ''walk-in'' and ''reach-in'' door panel assemblies and related auxiliary devices intended for use with environmental, freezer or cooler rooms and cabinets.

The equipment is intended for permanent connection to alternating-current circuits rated at not more than 750 V.

Panel assemblies and auxiliary devices are provided with an electrical system which serves to provide one or more of the following functions: illumination, prevention of ice formation, prevention of condensation, motor drives for opening and closing doors, etc.

Auxiliary devices consist of equipment other than door panel assemblies associated with the foregoing apparatus or functions, including insulated panels with electrical components.

Door panel assemblies identified with an enclosure type designation or as ''Rain tight'' or ''Rainproof'' are intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

RELATED PRODUCTS

Refrigerated cabinets and cases are covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Door Panel Assembly'' or ''Auxiliary Insulated Panel.''

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DRILLING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FDJJ7)

This category covers products specifically intended for installation on oil rigs and drilling platforms.

MARINE SHIPBOARD CABLE FITTINGS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FDJR7)

USE

This category covers combination termination and sealing fittings for threaded connection of marine shipboard cable to equipment. They are intended for use only with the sealing compound as specified by the manufacturer in instructions furnished with the fittings. No splices of conductors are intended to be made in the fitting. Restrictions on application, position, and/or location of the fitting are indicated in the manufacturer's instructions.

These fittings are intended for use on mobile offshore oil rigs and drilling platforms. Investigations of these fittings include an evaluation for conformity to the installation and use provisions of Section 26, Subsections 7(a) and 7(b) of TP127E, ''Ship Safety Electrical Standards,'' as applied by the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Marine Shipboard Cable Fitting for Use in Hazardous Locations'' or ''Marine Shipboard Cable Sealing Fitting for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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DRILLING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FDJZ7)

This category covers products specifically intended for installation on oil rigs and drilling platforms.

DRILLING INSTRUMENTATION FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FDKX7)

USE AND INSTALLATION

This category covers drilling equipment consisting of instruments, sensors and transducers intended to measure, record and monitor drilling variables and to control the drilling process.

Intrinsically safe circuits and equipment are intended to be installed and interconnected in accordance with the instructions provided.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Drilling Instrumentation for Hazardous Locations'' or ''Drilling Instrumentation (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

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Drilling Instrumentation for Use in Hazardous Locations Certified for Canada (FDKX7)−*Continued*

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MARINE SHIPBOARD CABLE SEALING FITTINGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FDLW7)

USE

This category covers combination termination and sealing fittings for threaded connection of marine shipboard cable to equipment in hazardous (classified) locations. They are for use only with sealing compound as specified by the manufacturer in instructions furnished with the fittings. No splices of conductors are permitted to be made in the fitting. Restrictions on application, position, and/or location of the sealing fitting are indicated in the manufacturer's instructions.

These fittings are intended for use on mobile offshore oil rigs and drilling platforms. The investigation of these fittings includes an evaluation for conformity to the installation and use provisions of the Ships Electrical Standards, TP 127 E, Section 26, ''Hazardous Locations,'' as applied by the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 174 (1984), ''Cables and Cable Glands for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Marine Shipboard Cable Sealing Fitting for Use in Hazardous Locations,'' or other appropriate product name as indicated in the individual Listings.

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DRINKING WATER SYSTEM COMPONENTS CERTIFIED FOR CANADA (FDNP7)

GENERAL

This category covers drinking water system products and materials including, but not limited to, barrier materials (coatings, liners, tanks, etc.), joining and sealing materials (gaskets, solvent cements, etc.), mechanical devices (valves, pumps, etc.), mechanical plumbing devices (faucets, aerators, etc.), pipes and related products (pipes, fittings, etc.), and process media (activated carbon, sand, etc.) that come into contact with drinking water or drinking water treatment chemicals in drinking water distribution systems. These components are intended to be installed and used in accordance with applicable plumbing codes.

The investigation of drinking water system components is conducted with respect to contaminants that can be introduced into the drinking water supply from their base metal alloy, plastic resin, or other nonmetallic parts such as gaskets, seals, coatings, adhesives, filter media, cement linings or the like. Unless otherwise indicated in the individual Classifications, mechanical plumbing devices have been evaluated for residential use only.

In the individual Classifications, a 23°C water-use temperature indicates that the product has been investigated at 23°C and its use is limited to cold-temperature applications where the product is exposed continuously to water whose temperature is not intentionally raised above ambient. Where individual Classifications indicate a water-use temperature higher than 23°C, the specified temperature is the maximum water-use temperature established for the product. Products certified for hot-water applications have been investigated using the intermittent hot protocol, unless otherwise indicated in the individual Classifications.

RELATED PRODUCTS

Water coolers, drinking water fountains and remote chillers may also be covered under Drinking Water Coolers Certified for Canada (SRJX7).

Faucets and related plumbing fixture fittings may also be covered under Plumbing Fixture Fittings Certified for Canada (QNSQ7).

Submersible well pumps may also be covered under Pumps, Electrically Operated, Liquid Certified for Canada (REUZ7).

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is NSF/ANSI 61 (2008), ''Drinking Water System Components – Health Effects.''

Products additionally investigated for a weighted average lead content ≤0.25% were investigated to Annex G of NSF/ANSI 61 (2008).

UL MARK

The Water Quality Classification Mark of UL on the product or on the smallest container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. For process media shipped in bulk quantities, the Classification Mark may appear on a Bill of Lading or a Bulk Shipment Certificate. The Water Quality Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol and the words ''WATER QUALITY'' below the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY+]
ANSI/NSF 61
Control No.

+ **DRINKING WATER SYSTEM COMPONENT**, **PIPE**, **PIPE FITTING**, **JOINING AND SEALING MATERIAL**, **BARRIER MATERIAL**, **PROCESS MEDIA**, **VALVE**, **FAUCET**, or other appropriate product name as shown in the individual Classifications

The Classification Mark may be abbreviated as follows:

UND. LAB. INC. CLASSIFIED
NSF 61
Control No.
or
UND. LAB. INC. CLFD
NSF 61
Control No.

For products Classified by UL in accordance with Annex G of NSF/ANSI 61 (2008), the words ''Annex G'' may be used with the Classification Mark.

For products that are also Listed or Classified by UL under another category, as an alternative to the complete Classification Mark described above, the words ''ALSO CLASSIFIED'' (or ''ALSO CLFD'') and the text ''NSF 61'' may be used adjacent to the applicable UL Mark.

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DRINKING WATER TREATMENT CHEMICALS CERTIFIED FOR CANADA (FDPH7)

GENERAL

This category covers drinking water treatment chemicals intended to be introduced into the drinking water supply at treatment plant facilities for disinfection, filtration, scale, corrosion or pH control, softening, coagulation and flocculation, or other treatment purposes. This category also covers chemical products that are introduced into the drinking water supply at wells, but not intended to be present in the finished water.

These chemicals are intended to be used in accordance with the Maximum Use Level and other use limitations specified in the individual Classifications.

Plant locations where UL Classified products are manufactured or distributed are indicated in the individual Classifications.

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is NSF/ANSI 60 (2009a),"Drinking Water Treatment Chemicals – Health Effects."

UL MARK

The Water Quality Classification Mark of UL on the smallest container in which the product is packaged, or for product that is bulk shipped, on a Bill of Lading, Bulk Shipment Certificate or Bulk Shipment Document, is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Water Quality Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol and the words "WATER QUALITY" below the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY]*
ANSI/NSF 60
Control No.

* **DRINKING WATER TREATMENT ADDITIVE** or **DRINKING WATER TREATMENT CHEMICAL**, or other appropriate product name as shown in the individual Classifications

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ELECTRIC VEHICLE SYSTEMS CERTIFIED FOR CANADA (FFQM7)

USE

This category covers products and systems intended for use with or installation on automotive-type vehicles for highway use, such as passenger automobiles, buses, trucks, vans, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery.

UNEVALUATED FACTORS

The physiological effects of chemical substances or gases associated with the recharging of storage batteries have not been investigated.

ELECTRIC VEHICLE CABLE CERTIFIED FOR CANADA (FFSO7)

GENERAL

This category covers flexible cord constructed and certified for use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Electric vehicle cable consists of two or more insulated conductors, with or without grounding conductors, with an overall jacket.

The cable is used to supply power, signal, and control to electric vehicles during the charging process. It is rated 60 to 105°C (140 to 221°F) dry; 60°C (140°F) wet; 60°C (140°F) where exposed to oil, and for use where exposed to the direct rays of the sun. For cable so marked, a gasoline-immersion rating is also assigned. The term "wet" indicates that the cable is acceptable for immersion in water. Electric vehicle cable employs flexible stranded copper conductors.

Type EV — Rated 600 V, contains two or more 18 AWG to 500 kcmil thermoset-insulated circuit conductors under a thermoset jacket, and may employ one or more insulated grounding conductors. The cable may contain hybrid data, signal, communications, and/or optical fiber cable in any AWG size.

Type EVT (TPE) — Rated 600 V, same as Type EV except that the cable employs thermoplastic-elastomer-insulated conductors and jacket.

Type EVT — Rated 600 V, same as Type EV except that the cable employs thermoplastic (PVC) insulated conductors and jacket.

Type EVJ — Rated 300 V, contains two to six 18–12 AWG thermoset-insulated circuit conductors under a thermoset jacket, and may employ one or more insulated grounding conductors. The cable may contain hybrid data, signal, communications, and/or optical fiber cable in any AWG size.

Type EVJT (TPE) — Rated 300 V, same as Type EVJ except that the cable employs thermoplastic-elastomer-insulated conductors and jacket.

Type EVJT — Rated 300 V, same as Type EVJ except that the cable employs thermoplastic (PVC) insulated conductors and jacket.

PRODUCT MARKINGS

Cord is marked with the organization responsible for the cord, type designation, temperature rating, voltage rating, number and size of conductors.

"VW-1" indicates that the finished cord and the individual conductors comply with a vertical flame test.

"FT1" indicates that only the finished cord complies with a vertical flame test.

"FT2" indicates that only the finished cord complies with a horizontal flame test.

Electric Vehicle Cable Certified for Canada (FFSO7)–*Continued*

ADDITIONAL INFORMATION

For additional information, see Electric Vehicle Systems Certified for Canada (FFQM7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 49, "Flexible Cords and Cables," or CSA Technical Information Letter No. J-39 (2011), "Interim Certification Requirements for Electric Vehicle Cables, Rated 600V Maximum."

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Electric Vehicle Cable."

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ELECTRIC VEHICLE CHARGING SYSTEM EQUIPMENT CERTIFIED FOR CANADA (FFTG7)

USE AND INSTALLATION

This category covers charging system equipment, either conductive or inductive, intended for use with electric vehicles. The equipment is located off board the vehicle, and is intended for indoor or outdoor use.

This equipment is rated 600 V or less. The equipment is intended to be connected to the vehicle by means of a flexible cord and an electric vehicle connector, and intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

RELATED PRODUCTS

See Battery Chargers, Automotive Type Certified for Canada (BBGQ7).

ADDITIONAL INFORMATION

For additional information, see Electric Vehicle Systems Certified for Canada (FFQM7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1, "General Use Power Supplies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Charging System Equipment," "Battery Charger," "Charge Port," "Charge Controller," or other appropriate product name as shown in the individual Listings, preceded by "Electric Vehicle" (or "EV").

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ELECTRIC VEHICLE SUPPLY EQUIPMENT CERTIFIED FOR CANADA (FFWA7)

USE

This category covers electric vehicle supply equipment rated 250 V ac or less, intended for indoor or outdoor use where power is required for the recharging of electric vehicle storage batteries. These products are intended to provide power to an on-board charger. These products include electric vehicle charging stations, electric vehicle power outlets and electric vehicle cord sets for use with electric vehicles in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Electric vehicle cord sets are rated a maximum of 125 V ac, 20 A, such that they can be cord-connected devices and used outdoors. All other cord-connected products covered under this category are intended for indoor use only. Permanently connected products may be used either indoors or outdoors as indicated. All products are provided with a marking indicating the enclosure type rating, which corresponds to the indoor or outdoor use of the product.

Electric Vehicle Supply Equipment Certified for Canada (FFWA7)–*Continued*

Products covered under this category are marked to indicate that they are for use with electric vehicles.

RELATED PRODUCTS

Electric vehicle charging equipment with a dc output voltage rated up to 600 V dc is covered under Electric Vehicle Charging System Equipment Certified for Canada (FFTG7).

ADDITIONAL INFORMATION

For additional information, see Electric Vehicle Systems Certified for Canada (FFQM7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1, ''General Use Power Supplies,'' CSA Technical Information Letter No. A-35 (2011), ''Interim Certification Requirements for Electric Vehicle Cord Sets and Power Supply Cords,'' or CSA Technical Information Letter No. I-44 (2011), ''Interim Certification Requirements for Supply Equipment for Electric Vehicles with Inputs and Outputs Rated 600 V or Less.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Vehicle Power Outlet'' (or ''EV Power Outlet''), ''Electric Vehicle Charging Station'' (or ''EV Charging Station'') or ''Electric Vehicle Cord Set'' (or ''EV Cord Set'').

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ELECTRICAL AND ELECTRONIC MEASURING AND TESTING EQUIPMENT CERTIFIED FOR CANADA (FHCW7)

GENERAL

This category covers equipment intended primarily for the metering and testing of electrical and electronic circuits, such as ammeters, voltmeters, power meters, frequency counters, chart recorders, oscilloscopes, etc. This category also covers equipment designed to provide electrical or electronic signals for test purposes, such as signal generators or injectors, frequency synthesizers, etc.

These products have been investigated with respect to risk of fire, electric shock, and personal injury.

FACTORS NOT INVESTIGATED

The accuracy of the equipment has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 231 Series (1989), ''Electrical and Electronic Measuring and Test Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electrical and Electronic Measuring and Testing Equipment,'' or the name of the specific type of product as shown in the individual Listings, or combinations of the preceding identities.

* *

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ELECTRICAL AND ELECTRONIC MEASURING AND TESTING EQUIPMENT ACCESSORIES CERTIFIED FOR CANADA (FHGQ7)

USE

This category covers products such as cabinets, carts and racks; patch cord, probe or test lead assemblies; termination adapters or attenuators designed to be used with certified electrical and electronic measuring and testing equipment.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 231 Series (1989), ''CSA Safety Requirements for Electrical and Electronic Measuring and Test Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Electrical and Electronic Measuring and Testing Equipment Accessory,'' ''Measuring Equipment Accessory,'' ''Test Equipment Accessory,'' ''Instrument Accessory,'' or the name of specific type of product as shown in the individual Listings, or combinations of the preceding identities.

* *

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ELECTRICAL METALLIC TUBING CERTIFIED FOR CANADA (FJMX7)

GENERAL

This category covers electrical metallic tubing (EMT), including lengths of straight tubing and elbows, with or without integral couplings or other integral fittings, manufactured in trade sizes 1/2 to 4 (metric designators 16 to 103) inclusive. EMT is intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' This tubing is intended for installation and use in accordance with the following information.

Galvanized steel EMT installed in concrete on grade level or above generally requires no supplementary corrosion protection. Galvanized steel EMT in concrete slab below grade level may require supplementary corrosion protection.

In general, galvanized steel EMT in contact with soil requires supplementary corrosion protection. Where galvanized steel EMT without supplementary corrosion protection extends directly from concrete encasement to soil burial, severe corrosive effects are likely to occur on the metal in contact with the soil.

Galvanized steel EMT that is provided with a metallic or nonmetallic coating, or a combination of both, has been investigated for resistance to atmospheric corrosion. Nonmetallic outer coatings that are part of the required resistance to corrosion have been additionally investigated for resistance to the effects of sunlight.

Nonmetallic outer coatings of greater than 0.254-mm (0.010-in.) thickness are investigated with respect to flame propagation detrimental effects to any underlying corrosion protection, the fit of fittings, and electrical continuity of the connection of tubing to fittings.

Galvanized steel EMT with or without a nonmetallic coating has not been investigated for severely corrosive conditions.

Aluminum EMT used in concrete or in contact with soil requires supplementary corrosion protection.

RELATED PRODUCTS

Fittings certified for use with EMT are covered under Electrical Metallic Tubing Fittings Certified for Canada (FKAV7) and Conduit Fittings Certified for Canada (DWTT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 83, ''Electrical Metallic Tubing,'' and CAN/CSA-C22.2 No. 83.1, ''Electrical Metallic Tubing – Steel.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electrical Metallic Tubing'' (or ''EMT'').

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ELECTRICAL METALLIC TUBING FITTINGS CERTIFIED FOR CANADA (FKAV7)

GENERAL

This category covers electrical metallic tubing fittings such as connectors, couplings and expansion fittings, made in sizes from 1/2 to 4 (metric designators 16 to 103) inclusive trade sizes, and are intended for installation and use in accordance with the following information and the limitations specified in Electrical Metallic Tubing Certified for Canada (FJMX7). These products are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

All male threaded fittings have only been investigated for use with locknuts.

Indentor Fittings — Indentor-type fittings are for use with metallic-coated electrical metallic tubing only and require a special tool supplied by the manufacturer for proper installation. Diametrically opposed indentor-type tools require two sets of indentations nominally 90° apart. Triple-indent tools require one set of indentations.

Reusability — Fittings have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

PRODUCT MARKINGS

Fittings suitable for use in poured concrete or where exposed to rain are so indicated on the device or carton. The term ''raintight,'' ''wet location'' or the equivalent on the carton indicates suitability for use where directly exposed to rain. The term ''concretetight'' or equivalent on the carton indicates suitability for use in poured concrete.

Fittings have been tested for use only with steel tubing unless marked on the device or carton to indicate suitability for use with aluminum or other material.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 18.3 (2004), ''Conduit, Tubing, and Cable Fittings.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Electrical Metallic Tubing Fitting'' (or ''EMT Fitting''), ''Connector'' or ''Coupling,'' or other appropriate product name as shown in the individual Listings.

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ELECTRICAL NONMETALLIC TUBING CERTIFIED FOR CANADA (FKHU7)

USE AND INSTALLATION

This category covers electrical nonmetallic tubing (ENT) in trade sizes 1/2 to 2 (metric designators 16 to 53) inclusive intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' This tubing is intended for installation and use in accordance with the following information.

Fittings — The outside diameters of ENT are such that standard connectors, couplings and outlet boxes for rigid PVC conduit can be employed for ENT that is also constructed of PVC. Installation instructions are provided with each bundle or coil of ENT outlining the procedure to be used when employing cemented-on PVC conduit fittings and outlet boxes.

These techniques include the specific cement to be used as well as its application method. Other fittings are covered under Electrical-nonmetallic-tubing Fittings (FKKY).

ENT with mechanical fittings identified for the purpose or with cemented-on fittings is suitable for use in poured concrete.

ENT with cemented-on PVC fittings is suitable for use in:

1. Indoor locations where walls are frequently washed, and
2. Concrete slabs in direct contact with the earth.

PRODUCT MARKINGS

The product is provided with marking on the package, in combination with the UL Mark (every 10 ft), specifying the wire temperature rating, minimum installation temperature of -20°C (-4°F), and maximum ambient temperature 50°C (122°F). The 3/4 and 1 trade sizes may be marked ''CDN'' on the product and carton, indicating that they have been crushed with a force of 3470 N (780 lbf) and 3380 N (760 lbf), respectively.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 227.1, ''Electrical Nonmetallic Tubing.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electrical Nonmetallic Tubing.''

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ELECTRICAL NONMETALLIC TUBING FITTINGS CERTIFIED FOR CANADA (FKKY7)

GENERAL

This category covers electrical-nonmetallic-tubing (ENT) fittings made in trade sizes 1/2 to 2 (metric designators 16 to 53). These fittings are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

CARTON MARKINGS

Unless otherwise marked on the carton, fittings are suitable for use with any certified ENT of the appropriate trade size. If a fitting is suitable for use with only specific manufacturer's ENT, the smallest unit carton of the fittings identifies the ENT manufacturer(s). Classified ENT (see FKMT7) is suitable for use with compatible certified ENT fittings, as identified on the ENT smallest unit carton. This compatibility marking appends any compatibility marking on the fitting carton.

Fittings suitable for use in concrete are identified by a marking on the carton. A fitting that is taped completely (from the raceway to the box or raceway-to-raceway) is concrete-tight, when the product carton is marked with ''CONCRETE-TIGHT WHEN TAPED.''

ADDITIONAL INFORMATION

For additional information, see Electrical Nonmetallic Tubing Certified for Canada (FKHU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 227.1 (2006), ''Electrical Nonmetallic Tubing.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Electrical Nonmetallic Tubing Fitting'' (or ''ENT Fitting'').

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ELECTRIC DISCHARGE LAMP CONTROL EQUIPMENT CERTIFIED FOR CANADA (FKOT7)

DRIVERS FOR LIGHT-EMITTING-DIODE ARRAYS, MODULES AND CONTROLLERS CERTIFIED FOR CANADA (FKSZ7)

GENERAL

This category covers light-emitting-diode (LED) drivers providing a regulated output for an LED array or LED module, with or without an LED controller (control module). The output has LEDs connected in parallel or connected in series.

LED drivers are intended for connection to be powered from alternating-current-supply branch circuits rated 600 V or less in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC); from low-voltage supplies; or from alternative sources, such as batteries, photovoltaic modules or fuel cells. A direct-plug-in, cord-and-plug, or field-wiring compartment is provided for connection to the branch circuit or other supplies.

LED drivers are not intended for recessed installation where direct contact with thermal insulation may occur.

PRODUCT MARKINGS

LED drivers are marked with:

a) Input voltage, either the supply (line) voltage or a low voltage (ac or dc)
b) Input current
c) Input wattage, power factor or both (optional)
d) Output maximum voltage
e) Output current (the maximum current that could be supplied by the driver)
f) Output volt-amperes or wattage
g) Output type (isolated, direct or Class 2)
h) Environmental location (dry, damp or wet)

The output type is used in determining the type of compatible LED array, a function of LED array construction. Output type "Isolated" refers to the output being electrically isolated from the supply circuit by insulation. Output type "Direct" refers to the output being electrically derived from the supply circuit without a separation by insulation.

LED drivers marked "Class 2" indicate that the output meets the construction, performance, and marking requirements specified in CAN/CSA-C22.2 No. 223, "Power Supplies with Extra-Low-Voltage Class 2 Outputs," and that Class 2 wiring methods may be used. A driver may have one or more outputs marked "Class 2."

LED drivers marked "Suitable for Class 2 Wiring" indicate that the output meets the voltage, current, and isolation criteria specified for Class 2 circuits in the CEC, and that Class 2 wiring methods may be used. A driver may have one or more outputs marked "Suitable for Class 2 Wiring."

LED drivers are marked for environmental locations as defined in the CEC and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7). The marking indicates the following uses:

Dry location — Suitable for indoor, dry locations.

Damp (outdoor) location — Suitable for use in (1) luminaires intended for wet or damp locations, (2) wet location signs if the driver is within an overall electrical enclosure, or, (3) other equipment or appliances. The interior of a luminaire or sign intended for wet locations is considered a damp location. The LED drivers are also suitable for indoor use.

Wet location — Suitable for use where water or other liquid can drip, splash, or flow on or against the device. The LED drivers are also suitable for indoor or damp location use.

LED drivers marked "High Power Factor" operate at 90% or higher power factor under the intended operating conditions or otherwise indicate those conditions that result in less than 90% power factor. Drivers marked "Power Factor Corrected" indicates the value of the power factor.

RELATED PRODUCTS

Power supplies that can be employed as LED drivers may also be covered under:

Direct-plug-in and Cord-connected Class 2 Power Units Certified for Canada (EPBU7)
Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7)
Power Supplies, General Purpose Certified for Canada (QQFU7) or Power Supplies, Specialty Certified for Canada (QQIJ7)
Sign Accessories Certified for Canada (UYMR8)

LED arrays, modules and controllers are covered under:

Light-emitting-diode Arrays, Modules and Controllers Certified for Canada (OOQA8)
Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7)

Drivers for Light-emitting-diode Arrays, Modules and Controllers Certified for Canada (FKSZ7)–*Continued*

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II"
CSA-C22.2 No. 107.1, "General Use Power Supplies"
CAN/CSA-C22.2 No. 207, "Portable and Stationary Electric Signs and Displays"
CAN/CSA-C22.2 No. 223, "Power Supplies with Extra-Low-Voltage Class 2 Outputs"
CSA-C22.2 No. 250.0, "Luminaires"
CSA-C22.2 No. 250.13 (2012), "Light Emitting Diode (LED) Equipment for Lighting Applications"
CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements"
CSA Technical Information Letter No. O-18, "Power Supplies Having Output Voltage Greater Than 30V ac or 42.4V Peak or DC (i.e., Not Class 2), or Output Power Greater Than 100VA or Leakage Current Greater Than 0.5mA"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "LED Driver."

* *

FLUORESCENT LAMP BALLASTS CERTIFIED FOR CANADA (FKVS7)

GENERAL

This category covers fluorescent lamp ballasts for both alternating and direct current. The ballasts are high-frequency electronic, resistor, choke (reactor) coil, or transformer of the isolating or auto type and are for controlling the starting and operating voltages and currents of a fluorescent lamp. These ballasts are intended for connection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," to branch circuits rated 600 V or less. The output voltages are 2500 V or less.

Ballasts provided with integral thermal protection prevent ballast overheating as required in applications such as luminaires and signs. The protection has been investigated to Part 1 of CAN/CSA-C22.2 No. 74, "Equipment for Use with Electric Discharge Lamps." These ballasts are generally provided with an enclosure but may be an open-type construction if the ballast is a simple-reactance type.

Some ballasts exhibit an inrush of current at the moment of initial operation, unless internal circuitry is provided to minimize the inrush. The inrush is similar to that exhibited in tungsten-filament incandescent lighting. Accordingly, it is recommended that lighting controls meet the tungsten-load requirement or be rated for use with the ballast in order to minimize incompatibility. (Refer to the particular lighting control category for more information on how the controls are marked regarding tungsten inrush.)

PRODUCT MARKINGS

Ballasts are marked with an output voltage when the output is over 300 V. The output voltage will be the maximum voltage existing between any two lead wires. Ballasts may additionally be marked with the maximum voltage to ground when it would aid in selecting lampholders. The voltage to ground will be the maximum voltage existing in any one lampholder and should be less than the rating of the lampholder.

Fluorescent lamp ballasts are restricted in use as indicated below:

Open Type — Open core-and-coil constructions (i.e., ballasts without complete metal enclosures) are intended for use within suitable enclosures.

Indoor Ballasts — Indoor ballasts are suitable for use in indoor, dry locations only.

Outdoor Ballasts — Outdoor ballasts are suitable for use in (1) outdoor equipment, (2) luminaires intended for wet or damp locations, or (3) outdoor signs if the ballasts are within an overall electrical enclosure. Ballasts of this type are marked "Outdoor."

Weatherproof Ballasts — Weatherproof ballasts are suitable for use where completely exposed to the weather without an additional enclosure and are marked "Weatherproof" or "WP."

Fluorescent Lamp Ballasts Certified for Canada (FKVS7)−*Continued*

RELATED PRODUCTS

Devices for controlling HID lamps are covered under High-intensity-discharge Lamp Ballasts Certified for Canada (FLCR7).

Suitable controls intended for use with ballasts for dimming fluorescent lamps are covered under Dimmers, General Use Switch Certified for Canada (EOYX7) and Dimmers, Commercial Certified for Canada (EOXT7).

Ballasts within an integral enclosure with a compact fluorescent lampholder and a bi-pin or screw base are covered under Lamps, Self-Ballasted and Lamp Adapters Certified for Canada (OOLR7).

Devices for controlling electric sign gas tubes are covered under Neon Transformers and Power Supplies Certified for Canada (PWIK7).

Products Verified for energy efficiency are covered under Fluorescent Lamp Ballasts Verified for Energy Efficiency (ZYMV).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II"

Part 1 of CAN/CSA-C22.2 No. 74, "Equipment for Use With Electric Discharge Lamps."

CSA Technical Information Letter No. B-68, "Interim Certification Requirements for Ballasts for Use with Fluorescent Lamps."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fluorescent Lamp Ballast," or other appropriate product name as shown in the individual Listings.

* *

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HIGH-INTENSITY-DISCHARGE LAMP BALLASTS CERTIFIED FOR CANADA (FLCR7)

GENERAL

This category covers high-intensity-discharge (HID) lamp ballasts. The ballasts are high-frequency electronic, choke (reactor) coil, or transformer of the isolating or auto type, and are for controlling the starting and operating voltages and currents for the following lamp types: mercury vapor, metal halide, high-pressure sodium and low-pressure sodium. These ballasts are intended for connection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," to branch circuits rated 600 V or less. The output voltages are 1000 V or less.

PRODUCT MARKINGS

Independent ballasts are ballasts that can be mounted separately outside a luminaire. Independent ballasts are marked "Suitable for Indoor Use" or "Suitable for Outdoor Use." An independent ballast enclosure suitable for special purposes is marked in accordance with CAN/CSA-C22.2 No. 74, "Equipment for Use with Electric Discharge Lamps."

Ballasts may be provided with thermal protection. If the ballasts are provided with thermal protection, they are marked "Thermally Protected" or the equivalent. The effectiveness of such protection has not been investigated.

HID lamp ballasts are restricted in use as indicated below:

Built-in Type — Open core-and-coil constructions (i.e., ballasts without complete metal enclosures) are intended for use within suitable enclosures.

Indoor Ballasts — Indoor ballasts are suitable for use in indoor, dry locations only.

Outdoor Ballasts — Outdoor ballasts are suitable for use in (1) outdoor equipment, (2) luminaires intended for wet or damp locations, or (3) an outdoor sign if the ballasts are within an overall electrical enclosure. Ballasts of this type are marked "Outdoor." These ballasts are also suitable for indoor use.

Weatherproof Ballasts — Weatherproof ballasts are suitable for use where completely exposed to the weather without an additional enclosure and are marked "Weatherproof" or "WP." These ballasts are suitable for indoor and outdoor use.

RELATED PRODUCTS

High-intensity-discharge Lamp Ballasts Certified for Canada (FLCR7)−*Continued*

Components associated with HID ballasts, such as lamp ignitors and other accessories, are covered under Electric Discharge Lamp Control Equipment, Specialty Certified for Canada (FNFT8).

Devices for controlling fluorescent lamps are covered under Fluorescent Lamp Ballasts Certified for Canada (FKVS7).

Devices for controlling electric sign gas tubes are covered under Neon Transformers and Power Supplies Certified for Canada (PWIK7).

Power capacitors provided with HID ballasts are covered under Capacitors Certified for Canada (CYWT8) or Capacitors, Construction Only Certified for Canada (CZDS8); or the capacitor has been investigated as a part of the ballast.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II," and Part 2 of CAN/CSA-C22.2 No. 74, "Equipment for Use with Electric Discharge Lamps."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Ballast" or "Mercury Lamp Ballast," or other appropriate product name as shown in the individual Listings.

* *

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HOLDERS FOR AUTOMATIC STARTERS CERTIFIED FOR CANADA (FLPZ7)

USE

This category covers separate holders for automatic starters that are intended for use with electric discharge (fluorescent) lamps. Unless otherwise noted, they are rated 660 W, 250 V.

RELATED PRODUCTS

Holders in combination with or designed to be assembled with lampholders are covered under Lampholders, Electric Discharge, 1000 V or Less Certified for Canada (OKCT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, "Lampholders."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Automatic Starter Holder."

* *

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STARTERS, AUTOMATIC CERTIFIED FOR CANADA (FMDX7)

USE

This category covers automatic starters intended for use with electric discharge (fluorescent) lamps.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 74, "Equipment for Use with Electric Discharge Lamps."

Starters, Automatic Certified for Canada (FMDX7)−*Continued*

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Automatic Starter'' or ''Fluorescent Lamp Starter,'' or other appropriate product name.

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ELECTRIC DISCHARGE LAMP CONTROL EQUIPMENT, SPECIALTY CERTIFIED FOR CANADA (FNFT7)

GENERAL

This category covers ballasts for special industrial lamps, controls for auxiliary tungsten lamps, electromagnetic interference filters, fluorescent ballast and lamp power reducers, fluorescent lamp life extenders, high-intensity-discharge (HID) lamp high-low dimmers, HID lamp ignitors, time-out circuits for HID lamp ballasts, and related devices. These devices are for factory or field installation, in accordance with their installation instructions, into certified luminaires employing discharge lamps.

Fluorescent power-reducer devices are limited to installation only in luminaires employing thermally-protected ballasts and are marked as such. The devices are designed for high-power-factor rapid-start ballasts, or high-power-factor instant-start ballasts, and marked as appropriate, unless marked for additional ballast types. These devices have not been investigated for use on emergency lighting equipment or with dimming ballasts, unless marked otherwise.

HID lamp high-low dimmers are limited to installation only in or with luminaires employing the lamp wattage and type, together with the ballast type and capacitor rating agreeing with the installation instructions provided with the dimmer.

RELATED PRODUCTS

Devices for controlling HID lamps are covered under High-intensity-discharge Lamp Ballasts Certified for Canada (FLCR7).

Devices for controlling fluorescent lamps are covered under Fluorescent Lamp Ballasts Certified for Canada (FKVS7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 74, ''Equipment for Use with Electric Discharge Lamps,'' and CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate product name as shown in the individual Listings.

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ELECTROMAGNETIC INTERFERENCE FILTERS CERTIFIED FOR CANADA (FOKY7)

GENERAL

This category covers electromagnetic interference (EMI) filters factory installed in equipment connected to 600 V or lower potential circuits, and installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Such filters are used to attenuate unwanted radio-frequency signals (such as noise or interference) generated from electromagnetic

sources. These filters consist of capacitors and inductors used alone or in combination with each other and may be provided with resistors.

Included in this category are cord-connected filters, direct-plug-in filters and facility filters.

This category does not cover transient-voltage surge suppressors (that is, devices for repeated limiting of voltage surges on power circuits such as thyrectors, metal oxide varistors, and spark-gaps), or EMI filters for outdoor use or filters having a rating of more than 125 A.

Filter Types

Filters are designated one of the following types:

Cord-connected filter — A filter provided with a supply cord having an attachment plug for connecting the filter to a branch circuit receptacle. It is also provided with a receptacle for distribution of the filtered voltage to an external (appliance or other equipment) load.

Direct-plug-in filter — A filter provided with blades at the filter body that plug directly into a 15 A, 120 V branch circuit receptacle. It is also provided with a receptacle for the distribution of the filtered voltage to an external (appliance or other equipment) load.

Facility filter — A filter installed as part of the service, feeders, or branch circuitry of a building wiring system.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 8, ''Electromagnetic Interference (EMI) Filters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name, as appropriate: ''Facility, Cord connected or Direct plug-in EMI Filter.''

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ELEVATOR EQUIPMENT CERTIFIED FOR CANADA (FQKR7)

Products Listed under this category include Elevator Controls and Accessories, Elevator Control Panels, Elevator Relays, Elevator Switches, Elevator Door Locking Devices and Contacts, Passenger Elevator Car Enclosures and Elevator Oil Buffers.

ELEVATOR CONTROLS AND ACCESSORIES CERTIFIED FOR CANADA (FQMW7)

GENERAL

This category covers elevator accessories such as push buttons, indicator lights and lighting fixtures, and elevator controls such as power supplies (motor and door operators) intended for use in elevator applications.

Some devices are open type (without enclosures), which means that such devices are for use as parts of certified equipment where the acceptability of the combination has been determined by UL or where open-type devices are acceptable.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14 (1991), ''Industrial Control Equipment.''

Seismic switches are additionally investigated to Clause 8.4.10.1.2 of ANSI/ASME A17.1/CSA B44 (2010), ''Safety Code for Elevators and Escalators.''

Where indicated in the individual Listings, elevator controls and accessories have additionally been investigated to CSA B44, ''Safety Code for Elevators and Escalators,'' and CSA B44.1, ''Elevator and Escalator Electrical Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Elevator Control'' or ''Elevator Accessory.''

Elevator Controls and Accessories Certified for Canada (FQMW7)−*Continued*

Products additionally investigated to CSA B44 and CSA B44.1 may also be marked, ''Also Evaluated in Accordance with CAN/CSA B44, and B44.1.''

*** ***

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ELEVATOR CONTROL PANELS CERTIFIED FOR CANADA (FQPB7)

USE

This category covers elevator control panels consisting of assemblies of equipment intended to control elevators, dumbwaiters, escalators, moving walks, inclined lifts and their associated equipment.

ADDITIONAL INFORMATION

For additional information, see Elevator Equipment Certified for Canada (FQKR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 14-M91, ''Industrial Control Equipment.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

*** ELEVATOR CONTROL PANEL**
+
No.

* **OPEN** or **ENCLOSED**

\+ One of the following statements, as applicable:

Statement No. 1: **AS TO ELECTRICAL SHOCK AND FIRE HAZARD ONLY. CLASSIFICATION DOES NOT INCLUDE EVALUATION WITH RESPECT TO CAN/CSA B44 OR B44.1.**

Statement No. 2: **AS TO ELECTRICAL SHOCK AND FIRE HAZARD, AND IN ACCORDANCE WITH CAN/CSA B44 AND B44.1.**

Equipment that has been investigated with respect to electrical shock and fire hazards only is marked with Statement No. 1.

Equipment that has been investigated in accordance with the requirements of CAN/CSA B44, ''Canadian National Standard Safety Code for Elevators, Escalators, Dumbwaiters, Moving Walks, and Freight Platform Lifts'' and CAN/CSA B44.1, ''Canadian National Standard Safety Code for Elevator and Escalator Electrical Equipment'' is marked with Statement No. 2.

*** ***

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ELEVATOR DOOR-LOCKING DEVICES AND CONTACTS CERTIFIED FOR CANADA (FQXZ7)

GENERAL

This category covers designed for installation and operation in accordance with CAN/CSA B44, ''Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks.''

Elevator hoistway door interlocks are intended to prevent the operation of the driving machine by the normal operating device unless the hoistway door is locked in the closed position, and to prevent the opening of the hoistway door from the landing side unless the car is within the landing zone and is either stopped or being stopped.

Retiring cams are not covered under this category and their acceptability must be determined at the point of installation by the Authority Having Jurisdiction.

Elevator hoistway door combination mechanical locks and electric contacts are intended to prevent operation of the driving machine by the normal operating device unless the hoistway door is in the closed position, and to lock the hoistway door in the closed position and prevent it from being opened from the landing side unless the car is within the landing zone.

Elevator Door-locking Devices and Contacts Certified for Canada (FQXZ7)−*Continued*

Elevator hoistway door, car door or gate electric contacts are intended to prevent operation of the driving machine by the normal operating device unless the door or gate is in the closed position.

These devices are investigated for misalignment conditions when properly installed as recommended by the manufacturer. Their acceptability is to be determined at the point of installation by the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA B44, ''Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Elevator Interlock,'' ''Elevator Interlock Retiring Cam Required,'' ''Elevator Combination Mechanical Lock and Electric Contact,'' ''Elevator Electric Contact,'' or other appropriate product name as shown in the individual Listings.

*** ***

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ELEVATOR OIL BUFFERS CERTIFIED FOR CANADA (FQZD7)

GENERAL

This category covers products intended for installation under elevator cars having a rated speed in excess of 50 ft/min in order to stop a descending car beyond its normal limit of travel.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is paragraph 201.4g of CAN/CSA B44, ''Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY]
IN ACCORDANCE WITH THE STANDARD
SAFETY CODE FOR ELEVATORS, DUMBWAITERS, ESCALATORS AND MOVING WALKS
CAN/CSA B44 (issue date), PARAGRAPH 201.4g
Control No.

*** ***

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ELEVATOR SWITCHES CERTIFIED FOR CANADA (FRAH7)

USE AND INSTALLATION

This category covers switches intended for use with elevator system cars or shafts. The switches are designed for installation and operation in accordance with CSA B44, ''Safety Code for Elevators and Escalators.''

These switches have been investigated for proper operation when installed as recommended by the manufacturer. Their acceptability is determined at the point of installation by the Authority Having Jurisdiction.

RELATED PRODUCTS

Elevator Switches Certified for Canada (FRAH7)−*Continued*

Elevator door-locking devices and contacts are covered under Elevator Door-locking Devices and Contacts Certified for Canada (FQXZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B44, ''Safety Code for Elevators and Escalators.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Elevator Limit Switch'' or ''Elevator Slack Cable Switch,'' or other appropriate product name as shown in the individual Listings.

* *

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ELEVATOR EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FRZV7)

This category covers hoistway door interlocks, hoistway limit switches, hoistway-door combination mechanical locks and electric contacts, hoistway-door or car door or gate electric contacts, and elevator control panels.

ELEVATOR DOOR-LOCKING DEVICES AND CONTACTS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FSNT7)

GENERAL

This category covers devices designed for use in elevators and intended for installation and operation in accordance with the requirements of CSA-B44 (1990), ''Safety Code for Elevators and Escalators.''

Elevator hoistway door interlocks are intended to prevent the operation of the driving machine by the normal operating device unless the hoistway door is locked in the closed position, and to prevent the opening of the hoistway door from the landing side unless the car is within the landing zone and is either stopped or being stopped.

Interlocks that do not require the use of a retiring cam bear the product name (A) under **PRODUCT IDENTITY**.

Interlocks that require the use of a retiring cam bear the product name (B) under **PRODUCT IDENTITY**.

This category does not cover retiring cams. Their acceptability must be determined at the point of installation by the Authority Having Jurisdiction.

Elevator hoistway door combination mechanical locks and electric contacts are intended to prevent operation of the driving machine by the normal operating device unless the hoistway door is in the closed position, and to lock the hoistway door in the closed position and prevent it from being opened from the landing side unless the car is within the landing zone. These locks and contacts bear the product name (C) under **PRODUCT IDENTITY**.

Elevator hoistway door, car door or gate electric contacts are intended to prevent operation of the driving machine by the normal operating device unless the door or gate is in the closed position. These contacts bear the product name (D) under **PRODUCT IDENTITY**.

These devices have been investigated for misalignment conditions when properly installed as recommended by the manufacturer. Their acceptability is to be determined at the point of installation by the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

Elevator Door-locking Devices and Contacts for Use in Hazardous Locations Certified for Canada (FSNT7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate:

(A) ''Elevator Interlock for Hazardous Locations''
(B) ''Elevator Interlock for Hazardous Locations – Retiring Cam Required''
(C) ''Elevator Combination Mechanical Lock and Electric Contact for Hazardous Locations''
(D) ''Elevator Electric Contact for Hazardous Locations''

* *

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ENERGY AND INDUSTRIAL SYSTEMS CERTIFIED FOR FUNCTIONAL SAFETY CERTIFIED FOR CANADA (FSPC7)

GENERAL

This category covers energy and industrial systems, such as photovoltaic systems, wind turbines, power conversion equipment, utility interactive devices, motor controllers, battery management systems, battery chargers, proximity switches, elevator control panels, etc., that have been certified for functional safety.

Functional safety relates to all functions, such as control, protection and monitoring, that are intended to reduce the risk of fire, electric shock or injury to persons.

Functional-safety investigations cover a product's programmable electronics (i.e., hardware and embedded software), but also products with hardware-implemented functions only.

Software may be the embedded instructions that reside in a programmable component and that perform some of the functions of the product under investigation. Software may be application-specific, i.e., the software is limited to a specific, dedicated, designated use. The software to be investigated may include operating systems, support tools, firmware and application systems.

In addition to electronic hardware and software, functional-safety investigations may include other technologies such as mechanical, hydraulic, pneumatic, and combinations thereof.

Functional-safety investigations may also be conducted for systems and / or subsystems of multiple products. These investigations often include the following elements:

- Review of the engineering documentation produced during the development, operation and maintenance of the product or system
- Risk analysis, including Hazard-based Safety Engineering (HBSE) Analysis
- Safety life-cycle management

The functional-safety investigation may result in attributing functional-safety ratings such as a safety integrity level (SIL) or performance level (PL) to the different safety-related functions. It is the responsibility of the customer to determine and specify these safety functions, the functional-safety standards to which the products are intended to be certified, and the desired functional-safety ratings.

The product manual and individual Listing should be consulted for detailed information and instructions about a particular product.

ABBREVIATIONS AND TERMS

The following abbreviations and terms are used in the individual Listings:

Abbreviation/Term	Definition
ASIL	**Automotive safety integrity level** — One of four levels (A through D) to specify an item's or element's necessary requirements of ISO / Draft International Standard 26262-1 through 26262-10, and safety measures for avoiding an unreasonable residual risk, with ''D'' representing the most stringent level and ''A'' the least stringent level.
Beta Factor	The measure for susceptibility of Common Cause Failure (see **CCF** below).

ENERGY AND INDUSTRIAL SYSTEMS CERTIFIED FOR FUNCTIONAL SAFETY CERTIFIED FOR CANADA (FSPC7)

Abbreviation/Term	Definition
Category	Classification of the safety-related parts of a control system with respect to their resistance to faults and their subsequent behavior in the fault condition, and which is achieved by the structural arrangement of the parts and/or their reliability. There are five categories (b, 1, 2, 3, 4) with "b" representing the lowest level of resistance and "4" representing the highest level of resistance.
CCF	**Common cause failure** — Failure as the result of one or more events, causing concurrent failures of two or more separate channels in a multiple-channel system, leading to system failure.
Class	CSA-C22.2 No. 0.8 defines Control Classes, but are often referred to only as "class." A designation of "B" or "C" is used to identify the specific safety level assigned to the control function of the equipment under test (EUT). **Class B**: A control function intended to prevent unsafe operation of the controlled equipment where the failure of the controlled equipment will not directly lead to a hazard. **Class C**: A control function intended to prevent unsafe operation of the controlled equipment where the failure of the controlled equipment could directly lead to a hazard.
Diagnostic Coverage	The measure of the effectiveness of diagnostics, which may be determined as the ratio between the failure rate of detected dangerous failures and the failure rate of total dangerous failures. Instead of a precise percentage value, EN ISO/ISO 13849-1 defines four percentage ranges for diagnostic coverage: None, Low, Medium and High.
HFT	**Hardware fault tolerance** — The ability of a system to continue nonstop when a hardware failure occurs. 0 = susceptible at a single fault 1 = susceptible at two faults 2 = susceptible at three faults
$MTTF_d$	**Mean time to failure (dangerous)** — A measure of reliability of a piece of equipment, given the average time before the first failure.
PFD_{avg}	**Average probability of a dangerous failure on demand of the safety function** — Safety unavailability of an electrical/electronic/programmable electronic (E/E/PE) safety-related system to perform the specified safety function when a demand occurs from the equipment under control (EUC) or EUC control system.
PFH_{avg}	**Average frequency of a dangerous failure of the safety function per hour** — The average frequency of a dangerous failure of an E/E/PE safety-related system to perform the specified safety function over a given period of time.
PL	**Performance level** — A discrete level used to specify the ability of safety-related parts of a control system to perform a safety function under foreseeable conditions. There are five levels (a through e), with "a" representing the lowest ability level and "e" the highest ability level.
SFF	**Safe failure fraction** — The property of a safety-related element defined by the ratio of the average failure rates of safe plus dangerous detected failures and safe plus dangerous failures.
SIL	**Safety integrity level** — A discrete level (one out of a possible four) corresponding to a range of safety integrity values, where safety integrity level 4 has the highest level of safety integrity and safety integrity level 1 has the lowest.
SIL Capability	Defined by EN/IEC 61800-5-2: The maximum SIL that can be claimed to have been achieved by the design of a power drive system suitable for use in safety-related applications in terms of the systematic safety integrity and the architectural constraints on hardware safety integrity. There are three levels, where SIL capability 3 has the highest level of safety integrity and SIL capability 1 has the lowest. Certification of a safety function to a certain SIL capability will, in addition to systematic safety integrity and architectural constraints, also include the PFH of the safety function.
SIL CL	**SIL Claim Limit** — Defined by EN/IEC 62061: The maximum SIL that can be claimed for a safety-related subsystem in relation to architectural constraints and systematic safety integrity. There are three levels, where SIL claim limit 3 has the highest level of safety integrity and SIL claim limit 1 has the lowest. Certification of a safety function to a certain SIL claim limit will, in addition to systematic safety integrity and architectural constraints, also include the PFH of the safety function.
Type	Defined by CAN/CSA E61496-1: A measure of performance (2, 3 or 4) of electro-sensitive protective equipment in the presence of faults and under influences from environmental conditions. Types 2, 3 and 4 are similarly defined as the Categories 2, 3 and 4 of EN ISO/ISO 13849-1, respectively.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7), Marine Products Certified for Canada (AAMP7) and Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The following standards are used to investigate products in this category for functional safety, as noted in the individual Listings:

ANSI/ASME A17.1/CSA B44 (2007), "Safety Code for Elevators and Escalators"
CSA-C22.2 No. 0.8 (2009), "Safety Functions Incorporating Electronic Technology"
CAN/CSA E61496-1 (2004), "Safety of Machinery – Electro-Sensitive Protective Equipment – Part 1: General Requirements and Tests"
EN 50271 (2010), "Electrical Apparatus for the Detection and Measurement of Combustible Gases, Toxic Gases or Oxygen – Requirements and Tests for Apparatus Using Software and/or Digital Technologies"
IEC 60335-1 (2010), "Household and Similar Electrical Appliances – Safety – Part 1: General Requirements"
IEC 60730-1 (2010), "Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements"
EN/IEC 61508-1 (2010), "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems – Part 1: General Requirements"
EN/IEC 61508-2 (2010), "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems – Part 2: Requirements for Electrical/Electronic/Programmable Electronic Safety-Related Systems"
EN/IEC 61508-3 (2010), "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems – Part 3: Software Requirements"
EN/IEC 61508-4 (2010), "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems – Part 4: Definitions and Abbreviations"
EN/IEC 61508-5 (2010), "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems – Part 5: Examples of Methods for the Determination of Safety Integrity Levels"
EN/IEC 61508-6 (2010), "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems – Part 6: Guidelines on the Application of IEC 61508-2 and IEC 61508-3"
EN/IEC 61508-7 (2010), "Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems – Part 7: Overview of Techniques and Measures"
EN/IEC 61511-1 (2003), "Functional Safety – Safety Instrumented Systems for the Process Industry Sector – Part 1: Framework, Definitions, System, Hardware and Software Requirements"
EN/IEC 61511-2 (2003), "Functional Safety – Safety Instrumented Systems for the Process Industry Sector – Part 2: Guidelines for the Application of IEC 61511-1"
EN/IEC 61511-3 (2003), "Functional Safety – Safety Instrumented Systems for the Process Industry Sector – Part 3: Guidance for the Determination of the Required Safety Integrity Levels"
EN/IEC 61800-5-2 (2007), "Adjustable Speed Electrical Power Drive Systems – Part 5-2: Safety Requirements – Functional"
EN/IEC 62061 (2005), "Safety of Machinery – Functional Safety of Safety-Related Electrical, Electronic, and Programmable Electronic Control Systems"
EN ISO/ISO 13849-1 (2006), "Safety of Machinery – Safety-Related Parts of Control Systems – Part 1: General Principles for Design"
ANSI/RIA/ISO 10218-1 (2007), "Robots for Industrial Environments – Safety Requirements – Part 1: Robot"
ISO/Draft International Standard 26262-1 (2009), "Road Vehicles – Functional Safety – Part 1: Vocabulary"

ISO/Draft International Standard 26262-2 (2009), "Road Vehicles – Functional Safety – Part 2: Management of Functional Safety"
ISO/Draft International Standard 26262-3 (2009), "Road Vehicles – Functional Safety – Part 3: Concept Phase"
ISO/Draft International Standard 26262-4 (2009), "Road Vehicles – Functional Safety – Part 4: Product Development: System Level"
ISO/Draft International Standard 26262-5 (2009), "Road Vehicles – Functional Safety – Part 5: Product Development: Hardware Level"
ISO/Draft International Standard 26262-6 (2009), "Road Vehicles – Functional Safety – Part 6: Product Development: Software Level"
ISO/Draft International Standard 26262-7 (2009), "Road Vehicles – Functional Safety – Part 7: Production and Operation"
ISO/Draft International Standard 26262-8 (2009), "Road Vehicles – Functional Safety – Part 8: Supporting Processes"
ISO/Draft International Standard 26262-9 (2009), "Road Vehicles – Functional Safety – Part 9: ASIL-Oriented and Safety-Oriented Analyses"
ISO/Draft International Standard 26262-10 (2009), "Road Vehicles – Functional Safety – Part 10: Guideline"

UL MARK

Products are eligible to bear the UL Functional Safety Mark when a product is investigated for both UL Listing and functional safety.

The Functional Safety Listing Mark of UL on the product, or the UL symbol on the product and the Functional Safety Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Functional Safety Listing Mark for these products includes the UL Mark for Canada symbol with the words "FUNCTIONAL SAFETY" above the UL symbol (as illustrated in the Introduction of this Directory), the word "LISTED," and the following additional information:

[PRODUCT IDENTITY*]
Control No.
ALSO INVESTIGATED TO
[STANDARD (YEAR+) ***]**
See installation manual for safety functions

* The appropriate product identity as shown in the Listing Mark for the product category

** Where a set of standards is referenced as individual parts (e.g., EN/IEC 61508-1, 61508-2, 61508-3), the standard set is shown in this format: EN/IEC 61508, Parts 1 – 3

+ Where individual parts of a set of standards have different edition dates, the latest date is used

*** Safety rating (e.g., SIL 3, PL e, Category 1); may include the words "UP TO" (e.g., UP TO SIL 3)

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ELEVATOR EQUIPMENT RELATING TO HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FSRA7)

ELEVATOR CONTROL PANELS RELATING TO HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FSSA7)

GENERAL

This category covers elevator control panels consisting of assemblies of equipment intended to control elevators, dumbwaiters, escalators, moving walks, inclined lifts, and their associated equipment.

Elevator control panels relating to hazardous locations are intended for installation in unclassified locations. They are provided with intrinsically safe (low energy) circuit(s) as indicated on the product, for extension into a hazardous (classified) location.

For intrinsically safe circuits, the energy level available in the hazardous location under normal and abnormal conditions is sufficiently low as not to cause ignition of the specified explosive atmospheres. To maintain the low energy levels, it is necessary that the intrinsically safe and associated equipment be installed and interconnected in accordance with the instructions provided. The intrinsically safe circuit wiring must be routed in a separate raceway or otherwise reliably segregated from all power and other circuit wiring to preclude excessive currents and voltages from being impressed on the intrinsically safe circuit, rendering it nonintrinsically safe.

Elevator Control Panels Relating to Hazardous Locations Certified for Canada (FSSA7)−*Continued*

The investigation of elevator control panels relating to hazardous locations does not include investigation of the function of the controlled equipment.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 14 (1991), "Industrial Control Equipment."

The basic hazardous (classified) locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 157 (1992), "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ELEVATOR CONTROL PANEL RELATING TO HAZARDOUS LOCATIONS
WITH INTRINSICALLY SAFE CIRCUIT EXTENSIONS
AS TO ELECTRICAL SHOCK, EXPLOSION AND FIRE HAZARD ONLY
Issue No.

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EMERGENCY LIGHTING AND POWER EQUIPMENT CERTIFIED FOR CANADA (FTBR7)

USE

This category covers electrical emergency lighting and power equipment for use in accordance with Section 46 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and the "National Building Code of Canada."

Emergency power equipment is intended to supply sufficient electrical energy for emergency luminaire operation, or to distribute and manage the electrical energy for emergency luminaires from a remote emergency supply source. Emergency power equipment with batteries has a test switch and visible or audible indicators to report the readiness of the emergency supply.

Emergency lighting equipment is intended to illuminate the means of egress, or means of egress signage, under both normal and emergency conditions.

Equipment may contain both emergency power and lighting capability, or may provide only one of the two functions.

PRODUCT TYPES

This category covers emergency luminaires, exit signs, unit equipment, inverters, central station battery systems, load control relays, and related accessories that directly facilitate or supplement the function of these devices.

This category also includes inverter/charger packs intended for factory or field installation in UL-certified luminaires. These inverter/charger packs have been evaluated by UL to determine that when installed in accordance with the manufacturer's instructions they do not adversely affect the operation of the installed luminaire. Electrical ratings, lamp compatibility, and wiring diagrams are marked on the packs and/or identified on the instructions provided. Inverter/charger packs are not suitable for installation in sealed or gasketed compartments unless investigated and marked for such applications.

RATINGS

All products have been investigated for use in dry locations only unless marked as suitable for damp or wet locations. Products marked as suitable for indoor damp or wet locations have not been investigated for UV exposure. All products have been investigated for use in ambient temperatures of 20 – 30°C (68 – 86°F) unless otherwise marked with an extended use temperature range.

Emergency power equipment with batteries provides 30 minutes (or more, if so marked) of rated power or light.

Exit signs have been investigated for visibility from 100 ft.

RELATED PRODUCTS

Exit signs intended for connection to a single source of power only are covered under Exit Fixtures Certified for Canada (FWBO7). Self-luminous and photoluminescent exit signs are covered under Exit Signs, Self-luminous and Photoluminescent Certified for Canada (FWBX7).

Kits intended to convert exit signs from one type of internal light source to another are covered under Exit Sign Conversion Kits Certified for Canada (FWCF7) or Exit Sign Retrofit Kits Certified for Canada (GGET7).

Equipment intended to transfer utilization equipment from the normal (utility) supply to an emergency supply, and back again, is covered under Automatic Transfer Switches for use in Emergency Systems Certified for Canada (WPWR7).

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 141 (2010), ''Emergency Lighting Equipment,'' or CSA-C22.2 No. 141 (2002), ''Unit Equipment for Emergency Lighting.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Emergency Lighting Equipment'' (or ''Emer. Light Eq.''), ''Emergency Power Equipment'' (or ''Emer. Power Eq.'') or ''Emergency Lighting and Power Equipment'' (or ''Emer. Light & Power Eq.'').

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ENGINE GENERATORS CERTIFIED FOR CANADA (FTCA7)

This category covers electrical generating equipment driven by gasoline, LP-gas, natural gas or diesel fueled internal combustion engines, including microturbines. The products are provided as integrated systems rated 600 V or less and may be intended for portable, permanent or mobile installations. The systems are arranged to facilitate installation and use in unclassified (ordinary) locations in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ENGINE GENERATORS FOR RECREATIONAL VEHICLES CERTIFIED FOR CANADA (FTCZ7)

GENERAL

This category covers electrical generating equipment driven by gasoline, LP-gas, natural gas or diesel-fueled internal-combustion engines. The systems are intended for installation in recreational vehicles.

RELATED PRODUCTS

Engine generators intended for stationary use are covered under Engine Generators Certified for Canada (FTSR7).

Generators, also referred to as generator heads or alternators, intended for use in an engine generator are covered under Generators Certified for Canada (JZGZ7).

ADDITIONAL INFORMATION

For additional information, see Engine Generators Certified for Canada (FTCA7), Building Materials Certified for Canada (AABM7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 100 (2004), ''Motors and Generators,'' in addition to CSA-C22.2 No. 14 (2005), ''Industrial Control Equipment,'' as it applies to the product.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Engine Generator for Recreational Vehicles.''

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for

Engine Generators for Recreational Vehicles Certified for Canada (FTCZ7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

EMERGENCY LIGHTING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTEV7)

GENERAL

This category covers automatic transfer switches designed for control of emergency lighting and power circuits in hazardous locations. The investigation of automatic transfer switches includes the determination of their suitability for transferring the load from a normal supply circuit to an immediately available emergency supply circuit.

This category also covers unit equipment, but not separate lamp heads or lighting fixtures (luminaires).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 141 (1985), ''Unit Equipment for Emergency Lighting.''

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 137 (1981), ''Electric Luminaires for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Emergency Lighting Equipment for Use in Hazardous Locations'' or ''Luminaires for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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EMERGENCY LIGHTING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTHR7)

GENERAL

This category covers automatic transfer switches designed for control of emergency lighting and power circuits. The investigation of automatic transfer switches includes the determination of their suitability for transferring the load from a normal supply circuit to an immediately available emergency supply circuit.

This category also covers unit equipment, but not separate lamp heads or lighting fixtures (luminaires).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 141, ''Unit Equipment for Emergency Lighting.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Emergency Lighting Equipment for Use in Hazardous Locations'' or ''Luminaire for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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ENCLOSURES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTQH7)

GENERAL

This category covers electrical enclosures employing the flameproof ''d'' protection technique in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' These enclosures are intended for use in one or more of the following hazardous locations, as indicated on the individual product: Class I, Zone 0, 1 and 2.

Unless otherwise noted in the individual certifications, enclosures are investigated for enclosing electrical equipment intended for connection to circuits having a maximum available fault current of 10,000 rms symmetrical amperes.

This category covers only the enclosures. Devices that may be contained within these enclosures are not covered under this category.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory) and the following additional information:

ENCLOSURE FOR USE IN HAZARDOUS LOCATIONS
AS TO EXPLOSION AND FIRE HAZARD ONLY
Control No.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

ENCLOSURES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTRV7)

GENERAL

This category covers enclosures intended for use in one or more of the following hazardous locations, as indicated on the individual product, in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'': Class I, Groups A, B, C and D; Class II, Groups E, F and G.

This category covers only the enclosures. Devices that may be contained within these enclosures are not covered under this category.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification

and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ENCLOSURE FOR USE IN HAZARDOUS LOCATIONS
AS TO EXPLOSION AND FIRE HAZARD ONLY
Control No.

* *

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ENCLOSURE ACCESSORIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTRX7)

GENERAL

This category covers enclosure bodies, flat, domed or window covers, window assemblies, threaded extensions, actuation mechanisms and similar subassemblies of enclosures. They are intended to be assembled at the factory or in the field to form a complete explosion-proof or dust-ignition-proof enclosure. Restrictions on the use and assembly of these devices are marked on each part.

RELATED PRODUCTS

See Enclosures for Use in Hazardous Locations Certified for Canada (FTRV7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ENCLOSURE ACCESSORY FOR USE IN HAZARDOUS LOCATIONS
AS TO EXPLOSION AND FIRE HAZARD ONLY
Control No.

* *

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ENCLOSURE ACCESSORIES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTRY7)

USE

This category covers enclosure bodies, flat, domed or window covers, threaded extensions, actuation mechanisms and similar subassemblies of enclosures. They are intended to be assembled at the factory or in the field to form a complete explosion-proof or dust-ignition-proof enclosure. Restrictions on the use and assembly of these devices are marked on each part.

RELATED PRODUCTS

See Enclosures for Use in Zone Classified Hazardous Locations Certified for Canada (FTQH7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

ENCLOSURE ACCESSORIES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTRY7)

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ENCLOSURE ACCESSORY FOR USE IN HAZARDOUS LOCATIONS AS TO EXPLOSION AND FIRE HAZARD ONLY
Control No.

* *

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ENERGY USAGE MONITORING SYSTEMS CERTIFIED FOR CANADA (FTRZ7)

USE

This category covers products intended for use in metering of utility and nonutility electric power. These devices monitor power consumption on a building main supply or separate branch circuits. These devices may communicate with other devices by means of power-line carrier, satellite/radio frequency, telephone, cable or other means. Devices suitable for outdoor use are so marked.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 1010.1 (1992), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements," and CAN3-C17, "Alternating-Current Electricity Metering" 2s referenced in the Canadian Watt-hour Meter ORD. All products in this category are investigated to the requirements of CAN/CSA-C22.2 No. 1010.1 (1992). Utility meters are additionally investigated to the safety requirements of CAN3-C17. Compliance with other requirements of CAN3-17 is as indicated in the individual certifications.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Watt-hour Meter," "Energy Usage Monitor" or "Sub-metering Equipment," or other appropriate product name as shown in the individual Listings.

* *

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ENGINE GENERATORS CERTIFIED FOR CANADA (FTSR7)

GENERAL

This category covers electrical generating equipment driven by gasoline, LP-gas, natural gas or diesel-fueled internal combustion engines.

This category does not cover engine generator assemblies mounted on trailers intended for temporary installation.

This category does not cover engine generator assemblies intended for marine use.

Certified stationary engine generator assemblies are rated 600 V or less and are intended for installation and use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and CAN/CSA-B149.1 (2000), "Natural Gas and Propane Installation Code."

This category does not cover electric machines for use in aircraft, marine service installations, drives for land transportation equipment, machines used in underground mining, hazardous environments or environments having abnormal temperatures.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 100, "Motors and Generators," and CSA-C22.2 No. 14, "Industrial Control Equipment," as it applies to the product.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Stationary Engine Generator Assembly," or other appropriate product name as shown in the individual Listings.

* *

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ENGRAVERS, ELECTRIC CERTIFIED FOR CANADA (FTSZ7)

USE

This category covers portable, electric motor-operated engravers, vibrating pencils and vibrating tools intended for marking or etching materials for household and commercial use.

RELATED PRODUCTS

Photoelectric engraving machines are covered under Graphic Arts Equipment Certified for Canada (KCQT7).

Stationary motor-operated engravers are covered under Tools, Stationary Certified for Canada (XKJU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Engraver" or "Vibrating Pencil," or other appropriate product name as shown in the individual Listings.

* *

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EQUIPMENT GROUND-FAULT PROTECTIVE DEVICES CERTIFIED FOR CANADA (FTTE7)

GENERAL

This category covers equipment ground-fault protective devices (EGFPD), whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds a predetermined value that is less than that required to operate the overcurrent protective device of the circuit. The ground-fault pick-up level is limited to the range above 6 mA to 50 mA. EGFPDs are intended for installation at nominal system voltages of 600 V or less, to automatically de-energize a part of an electrical circuit.

EGFPDs are intended to be used only in electrical circuits where one of the conductors is solidly grounded.

EGFPDs are not intended to provide protection from electric shock. They are not intended to be used in place of a Class A ground-fault circuit interrupter (GFCI) where a GFCI is required by CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

EGFPDs may be designed for permanent installation or may be portable types.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIRMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 144 (1991), ''Ground Fault Circuit Interrupters,'' in addition to one or more of the following as determined by the specific construction of the device:

CSA-C22.2 No. 42, ''General Use Receptacles, Attachment Plugs, and Similar Wiring Devices''
CSA-C22.2 No. 0.4, ''Bonding of Electrical Equipment''
CSA-C22.2 No. 14, ''Industrial Control Equipment''
CSA-C22.2 No. 29, ''Panelboards and Enclosed Panelboards''
CAN/CSA-C22.2 No. 94, ''Special Purpose Enclosures''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Equipment Ground-fault Protective Device'' (or ''EGFPD'').

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ENGINE CONTROL EQUIPMENT AND ENGINE GENERATORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTVV7)

ENGINE CONTROLS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTWD7)

USE AND INSTALLATION

This category covers engine controls intended for use with engine-powered electrical generators for use in hazardous (classified) locations. These devices are intended to monitor and control engine functions.

FACTORS NOT INVESTIGATED

This equipment has not been investigated for use with engines or turbines that provide critical functions, such as emergency power or fire protection.

RELATED EQUIPMENT

See Ignition Controls for Use in Hazardous Locations Certified for Canada (FTWL7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Engine Control for Use in Hazardous Locations.''

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IGNITION CONTROLS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FTWL7)

USE AND INSTALLATION

This category covers ignition controls for use with stationary internal-combustion engines and gas turbines in Class I, Division 2 hazardous

Ignition Controls for Use in Hazardous Locations Certified for Canada (FTWL7)−*Continued*

locations. These devices are power supplies that provide a controlled high-voltage output for igniters or other similar spark-producing devices. The igniters or other spark-producing devices are installed in the combustion chamber(s) of the engine or turbine.

The high-output-voltage levels can produce electrical shock. Care should be taken to follow the installation instructions provided with the equipment, including proper grounding of the equipment and proper output connections. Operating personnel should be carefully instructed regarding its correct operation and maintenance.

This equipment has not been investigated for use with engines or turbines that provide critical functions such as emergency power or fire protection.

ADDITIONAL INFORMATION

For additional information, see Engine Control Equipment for Use in Hazardous Locations Certified for Canada (FTVV7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 107.1 (2001), ''General Use Power Supplies.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Ignition Control for Use in Hazardous Locations.''

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EXIT SIGNS AND EXIT APPLIANCES CERTIFIED FOR CANADA (FUDQ7)

This category covers exit signs and exit appliances as identified by the following specific product categories.

The installation and use of these devices are specified in the National Fire Code of Canada.

These products have not been investigated with reference to fire resistance.

CONTROLLED EXIT SIGNS AND EXIT APPLIANCES CERTIFIED FOR CANADA (FULA7)

USE AND INSTALLATION

This category covers devices intended for mounting on outward-swinging exit doors to facilitate the egress of persons. When the system is activated, it is intended to monitor against unauthorized egress and allow exiting within 15 seconds (30 seconds may be accepted by the Authority Having Jurisdiction). These devices are intended to allow immediate exit in case of power failure or upon activation of an automatic fire-alarm system.

The installation and use of exit doors on which this hardware is to be mounted are specified in the ''National Fire Code of Canada.''

FACTORS NOT INVESTIGATED

These devices have not been investigated with reference to fire resistance.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S533 (1987), ''Egress Door Securing and Releasing Devices.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory)

Controlled Exit Signs and Exit Appliances Certified for Canada (FULA7)−*Continued*

together with the word "LISTED," a control number, and the product name "Controlled Exit Panic Device."

* *

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EXIT LOCKS CERTIFIED FOR CANADA (FUQV7)

USE

This category covers assemblies intended for mounting on outward swinging doors for the purpose of locking such exit doors against unauthorized egress.

RELATED PRODUCTS

For assemblies intended to facilitate safe egress of persons in case of emergency, see Panic Hardware Certified for Canada (FVSR7).

These assemblies have not been investigated for fire resistance; see Hardware Certified for Canada (GWGR7).

These assemblies have not been investigated for burglary protection.

ADDITIONAL INFORMATION

For additional information, see Exit Signs and Exit Appliances Certified for Canada (FUDQ7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S132 (1993), "Emergency Exit and Emergency Fire Exit Hardware."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Exit Lock."

* *

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PANIC HARDWARE CERTIFIED FOR CANADA (FVSR7)

USE AND INSTALLATION

This category covers devices intended for mounting on or integral with outward-swinging doors to facilitate the safe egress of persons in case of emergency.

The installation and use of doors on which this hardware is mounted is intended to be in accordance with the "National Fire Code of Canada."

RELATED PRODUCTS

Assemblies investigated with reference to fire resistance are covered under Fire-exit Hardware Certified for Canada (GXHX7).

Assemblies investigated with reference to access control system units are covered under Special Locking Arrangements Certified for Canada (FWAX7) or Controlled Exit Signs and Exit Appliances Certified for Canada (FULA7).

ADDITIONAL INFORMATION

For additional information, see Exit Signs and Exit Appliances Certified for Canada (FUDQ7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S132 (2007), "Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Panic Hardware."

If the complete Listing Mark is not applied to the center case so as to be visible after installation, then, in addition, the UL Mark for Canada symbol plus the letter "p" (for Panic) adjacent to it are both stamped on the device.

Panic Hardware Certified for Canada (FVSR7)−*Continued*

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SPECIAL LOCKING ARRANGEMENTS CERTIFIED FOR CANADA (FWAX7)

USE AND INSTALLATION

This category covers assemblies intended to be mounted on door frames of outward-swinging exit doors for the purpose of locking such doors against unauthorized egress. These devices are designed to release automatically in case of a power failure or upon activation of an automatic fire alarm system.

Installation and use of doors on which these devices are normally mounted are provided in the "National Fire Code of Canada."

Authorities Having Jurisdiction should be consulted for specific use and application requirements.

ADDITIONAL INFORMATION

For additional information, see Exit Signs and Exit Appliances Certified for Canada (FUDQ7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S533, "Egress Door Securing and Releasing Devices."

UL MARK

The Security Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Special Locking Arrangement."

* *

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EXIT FIXTURES CERTIFIED FOR CANADA (FWBO7)

GENERAL

This category covers internally illuminated exit signs intended to be connected to a single source of power.

RATINGS

Exit fixtures have been investigated for use in dry locations only unless marked as suitable for damp or wet locations. Products marked as suitable for indoor damp or wet locations have not been investigated for UV exposure. All products have been investigated for use in ambient temperatures of 20–30°C (68–86°F) unless otherwise marked with an extended use temperature range.

Exit fixtures have been investigated for visibility from 100 ft.

RELATED PRODUCTS

Exit signs intended for connection to more than one source of power, or with an integral backup power source, are covered under Emergency Lighting and Power Equipment Certified for Canada (FTBR7). Exit signs with no connection to a source of electrical power are covered under Exit Signs, Self-luminous and Photoluminescent Certified for Canada (FWBX7).

Kits intended to convert exit signs from one type of internal light source to another are covered under Exit Sign Conversion Kits Certified for Canada (FWCF7) or Exit Fixture Retrofit Kits Certified for Canada (GGET7).

Products Verified for energy efficiency are covered under Exit Signs Verified for Energy Efficiency (ZYLC).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 141 (2002), "Unit Equipment for Emergency Lighting."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Exit Fixture.''

* *

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EXIT SIGNS, SELF-LUMINOUS AND PHOTOLUMINESCENT CERTIFIED FOR CANADA (FWBX7)

USE AND INSTALLATION

This category covers self-luminous and photoluminescent exit signs intended for installation in accordance with the requirements of the Authority Having Jurisdiction, the ''National Building Code of Canada,'' and other codes governing the marking of the means of egress.

These exit signs have been investigated for use in dry or damp locations only where not exposed to direct sunlight, unless marked as suitable for wet locations.

Exit signs that have been investigated for mounting near the floor are marked, where visible after installation, ''Suitable for Floor Proximity Installation'' or equivalent wording.

These exit signs have been investigated for visibility from 100 ft unless marked, where visible after installation, with a maximum viewing distance of 50 or 75 ft.

Photoluminescent exit signs have been investigated for visibility for up to 120 minutes unless marked, where visible after installation, for a maximum operating time of 90, 60 or 30 minutes.

EXTERNAL ILLUMINATION

Exit signs whose visibility is dependent on external illumination (such as photoluminescent signs) are intended for installation only where such external illumination is deemed reliable and sufficient by the Authority Having Jurisdiction and where the lighting controls are accessible only to authorized personnel. Where compliance with the visibility requirements requires external illumination greater than 1 ft-c, these signs are marked, where visible after installation, for a minimum 5 ft-c illumination, measured on the face of the sign. If specific type(s) of lighting are needed to achieve the required visibility, the lighting type is also marked on the sign where visible after installation.

REPLACEMENT DATE

Exit signs whose visibility is expected to decline over time (such as those containing self-luminous gases) are marked, where visible after installation, with a replacement date.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C924, ''Photoluminescent and Self-Luminous Exit Signs,'' or CAN/ULC-S572, ''Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Self-luminous Exit Sign'' or ''Photoluminescent Exit Sign,'' or other appropriate product name as shown in the individual Listings.

* *

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EXIT SIGN CONVERSION KITS CERTIFIED FOR CANADA (FWCF7)

GENERAL

This category covers exit sign conversion kits, which are parts and/or subassemblies intended for field installation in specific certified exit signs (see Exit Fixtures Certified for Canada [FWBO7]) or exit lights (see Emergency Lighting and Power Equipment Certified for Canada [FTBR7]). They convert the light source from one type to another (e.g., incandescent to LED), primarily for energy-saving purposes. They have been investigated to determine that when used in accordance with the manufacturer's instructions, they do not adversely affect the operation of the complete exit sign. Their use is subject to the conditions indicated on the installation instructions provided with the kit.

Exit sign conversion kits are intended for use in indoor, dry locations unless marked ''Suitable for Wet Locations,'' ''Suitable for Indoor Wet Locations'' or ''Suitable for Damp Locations.''

Exit sign conversion kits containing fluorescent or electroluminescent lamps and marked as being suitable for damp or wet locations are for use in an ambient temperature not less than that marked on the product.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 141 (2002), ''Unit Equipment for Emergency Lighting.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

EXIT SIGN CONVERSION KIT
FOR USE ONLY WITH EXIT *
MODEL [No(s).] MANUFACTURED BY [Manufacturer's Name]
Control No.

* **FIXTURE** or **LIGHT**

* *

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EXIT SIGNS AND EXIT APPLIANCES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FWDD7)

EXIT SIGNS AND MARKERS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (FWDJ7)

GENERAL

This category covers exit signs, inverters, central station battery systems, and related accessories that directly facilitate or supplement the function of these devices intended for use in accordance with Section 46 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and the ''National Building Code of Canada.''

This category also covers inverter/charger packs intended for factory or field installation in UL-certified luminaires. These inverter/charger packs have been investigated to determine that, when installed in accordance with the manufacturer's instructions, they do not adversely affect the operation of the installed exit sign. Electrical ratings, lamp compatibility, and wiring diagrams are marked on the packs and/or identified on the instructions provided. Inverter/charger packs are not suitable for installation in sealed or gasketed compartments unless investigated and marked for such applications.

All products have been investigated for use in dry locations only unless marked as suitable for damp or wet locations. Products marked as suitable for indoor damp or wet locations have not been investigated for UV exposure. All products have been investigated for use in ambient temperatures of -20 to +40°C unless otherwise marked with an extended use temperature range.

Exit signs with batteries provides a minimum 30 minutes of rated power or light unless specifically marked for a longer period of time.

Exit signs have been investigated for visibility from 100 ft.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 141, ''Unit Equipment for Emergency Lighting.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Exit Sign for Use in Hazardous Locations'' or ''Exit Marker for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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EXTINGUISHERS AND EXTINGUISHING SYSTEM UNITS CERTIFIED FOR CANADA (FWFZ7)

The following information and listings relate to Extinguishers, Extinguishing Agents and Extinguishing System Units.

Portable extinguishers are rated according to their fire extinguishing potential which is indicated by NUMERAL and LETTER designations. The LETTER designates the general class of fire for which the extinguisher is suitable, and the NUMERAL indicates the approximate relative extinguishing potential of the device.

Class A fires are defined as fires in ordinary combustible materials such as wood, cloth, and paper where the ''quenching-cooling'' effect of quantities of water or solutions containing large percentages of water is most effective in reducing the temperature of the burning material below the ignition temperature and is, therefore, of first importance.

Class B fires are defined as fires in flammable petroleum products or other similar flammable liquids, greases, etc. where the ''blanketing-smothering'' effect of oxygen-excluding extinguishing agents is most effective.

Class C fires are defined as fires involving electrical equipment where the electrical nonconductivity of the extinguishing agent is of first importance.

Class D fires are defined as fires in combustible metals, such as magnesium, titanium, zirconium, sodium, potassium, etc.

The numerical potion of Class A ratings of hand extinguishers is developed on the basis of comparative Fire Tests using various sizes of wood crib, wood panel, and excelsior fires. For example, 1-A, 2-A, 3-A and 4-A extinguishers must be capable of consistently extinguishing vertical wood panel fires having areas of 2.4×2.45 m, 3.05×3.05m, 3.65×3.65m and 4.25×4.25m, respectively. The numerical portion of Class A ratings of wheeled extinguishers is developed on the basis of wood crib fires only. The size of crib is determined by logarithmic plots of enclosed volume and exposed surface area of the lumber used in the test fires versus the Class A rating.

The numerical portion of Class B ratings of extinguishers is developed on the basis of fire test using square steel pans in specific size increments and a fuel which is essentially equal to ordinary motor fuel (regular gasoline). Indoor test fires sizes are 0.23, 0.47, 1.16, 2.32 and 4.65 sq m and outdoor fire sizes are 9.3, 18.6, 27.9, 37.2, 55.7, 74.3, 112.0 and 149.0 sq m. The fire extinguishing classification is equivalent to 40% of the area of fire consistently extinguished by an expert operator. The NUMERAL thus derived is an approximate indication of the relative fire extinguishing potential of the extinguisher. The fire extinguishing classifications of these extinguishers are developed at normal ambient temperature (approximately 21 C) and may be reduced at lower temperatures. There are no numerical components for Class C ratings of extinguishers, as only the electrical nonconducting characteristics of the agent are significant, and no effort is made to indicate the amount of electrical fire for which an extinguisher is suitable.

Extinguishers and agents for use on Class D (combustible metals) fires are rated for the amount of agent needed to control a particular quantity and type of metal.

Extinguishers listed as ''Marine Type'' have been investigated in accordance with the applicable sections of the Code of Federal Regulations, Title 46 (shipping), Chapter 1, Subchapter Q, Sub-part 162.028, in addition to the usual test conducted by UL. Listed ''Marine Type'' extinguishers are identified by the wording ''Marine Type. U.S.C.G. Type (....), Size (....),'' on the individual listings and on the Listing Mark. Extinguishing Agents and Extinguishing System Units are investigated for the protection of specific classes or types of fires or for specific hazards as indicated in the individual Listings. Prospective users should first determine from the authority having jurisdiction which type of extinguishers, extinguishing agents or extinguishing system units are acceptable for protection of the hazards. Extinguisher and extinguishing system units are intended to be installed, inspected, maintained and tested in accordance with the appropriate Standard of the National Fire Protection Association.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

FOAM EXTINGUISHING SYSTEM UNITS CERTIFIED FOR CANADA (GEEZ7)

This category covers equipment and liquid concentrates used in systems employing foam as the fire-extinguishing medium. Foam equipment and liquid concentrates are Listed as units of a complete system. The individual Listings under Foam Liquid Concentrates Certified for Canada (GFGV7) should be consulted for the operating limitations and compatibility with specific combinations of liquid concentrates and equipment. A liquid concentrate may be Listed for use with several types of equipment at different concentrations, as indicated in the individual Listings.

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Foam Liquid Concentrates Certified for Canada (GFGV7)

GENERAL

This category covers foam liquid concentrates, which include protein, fluoroprotein, film-forming fluoroprotein (FFFP), aqueous-film-forming foam (AFFF), or other synthetic-based materials.

Foam is generally produced by the addition of a foam liquid concentrate to water and mechanically mixing air into the foam solution. Some foam solutions may be discharged through equipment that does not mix air into the solution as indicated in the individual certifications.

Foam is suitable for use on fires involving ordinary hydrocarbon petroleum products, but may not be suitable for use on fires involving polar solvent fuels. Concentrates investigated for use on polar solvent fuels are noted in the individual certifications.

Liquid concentrates may be stored in the original shipping containers or in pressure proportioning tanks. Liquid concentrates are not intended to be stored at temperatures lower than those for which they have been certified or above 49°C. They should be stored in locations free of excessive moisture to avoid external corrosion of containers and other equipment.

The quality of foam produced is affected by proportioning and discharge equipment. The individual certifications of liquid concentrates reference all the equipment with which it may be used and the corresponding operating limitations, including foam concentrations.

There are two types of foam-discharge outlets:

Type II — Discharge devices that do not deliver foam gently onto the liquid surface but are designed to minimize submergence of the foam or agitation of the surface. Examples include foam chambers, subsurface injection equipment, or applying the foam off a backboard or the wall of a tank.

Type III — Discharge devices that deliver foam directly onto the liquid surface at an angle above the horizontal. Examples include handheld nozzles or monitors.

Unless otherwise stated in the individual certifications, the type of discharge outlet certified with a foam is Type III.

Foam concentrates investigated with certified sprinklers and fixed spray-foam nozzles are intended to be installed in accordance with the applicable requirements of ANSI/NFPA 11, "Low-, Medium-, and High-Expansion Foam," or ANSI/NFPA 16, "Installation of Foam-Water Sprinkler and Foam-Water Spray Systems," but in no case is the protected area per sprinkler to exceed 12.1 sq. m..

Foam extinguishing systems are intended to be installed in accordance with the applicable requirements of ANSI/NFPA 11 and ANSI/NFPA 16.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Foam Extinguishing System Units Certified for Canada (GEEZ7), Extinguishers and Extinguishing System Units Certified for Canada (FWFZ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S564 (2006), "Standard for Categories 1 and 2 Foam Liquid Concentrates."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Foam Liquid Concentrate."

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WETTING AGENTS CERTIFIED FOR CANADA (GOHR7)

USE

This category covers wetting agents intended for use in accordance with ANSI/NFPA 18, "Wetting Agents." Wetting agents are liquid concentrates which, when added to water in the concentrations specified in the individual certifications, reduce the surface tension and increase the wetting-agent solution's ability to penetrate and spread. Wetting-agent solutions extend the efficiency of water in protection against fire exposure and the extinguishment of Class A and Class B fires in ordinary combustibles and flammable or combustible liquids that are not soluble in water and ordinarily stored at atmospheric temperatures and pressures. Wetting agents are not intended to be stored at temperatures below 0°C (32°F) or above 49°C (120°F).

In accordance with ANSI/NFPA 18, wetting-agent concentrates have been investigated for pour point, miscibility, separation, impact of low

Wetting Agents Certified for Canada (GOHR7)−*Continued*

temperature on surface tension, pH, and viscosity test. Wetting-agent solutions have been investigated for separation on standing, Class A fire extinguishment, and Class B fire-extinguishment tests.

Wetting-agent concentrates are intended to be packaged and distributed in containers that have been investigated for accelerated storage in combination with the specific wetting-agent concentrate and are covered under UL's Follow-Up Service.

Authorities Having Jurisdiction should be consulted regarding use of these products.

FACTORS NOT INVESTIGATED

Wetting agents have not been investigated in combination with specific devices, including wetting-agent-concentrate-proportioning equipment and wetting-agent-solution distribution and discharge equipment.

Wetting-agent concentrates have not been investigated for corrosion, toxicity or biodegradability; wetting-agent solutions have not been investigated for corrosion or toxicity as described in ANSI/NFPA 18.

ADDITIONAL INFORMATION

For additional information, see Extinguishers and Extinguishing System Units Certified for Canada (FWFZ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 18, "Wetting Agents."

UL MARK

The Classification Mark of UL on the agent concentrate container specified for use with the specific concentrate is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

WETTING AGENT
IN ACCORDANCE WITH ANSI/NFPA 18
FOR PHYSICAL PROPERTIES AND FIRE EXTINGUISHMENT ONLY
Control No.

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EXIT FIXTURE RETROFIT KITS CERTIFIED FOR CANADA (GGET7)

USE AND INSTALLATION

This category covers exit fixture retrofit kits intended for field installation in certified Exit Fixtures Certified for Canada (FWBO7) to convert the light source from one type to another (e.g., incandescent to LED) when installed in accordance with the manufacturer's instructions. These kits have been investigated only for use in stencil or panel type exit fixtures of minimum interior dimensions 15.9 (h) x 24.1 (w) x 2.2 (d) cm.

Retrofit kits are one of the following type designations:

Type EFG (Exit Fixture General) — Intended for use only in single- or double-faced stencil exit fixtures. The kit includes a light source and diffuser(s).

Type EFI (Exit Fixture Independent) — Intended for use only in single- or double-faced panel exit fixtures. The kit includes a light source, light reflecting media, enclosure, diffuser(s), legend, and (optionally) two directional indicators. It is independent of the original exit fixture except for mechanical support and electrical supply.

Type ELG (Exit Light General) — Same as Type EFG except intended for use only in UL-certified exit lights, which are energized by an ac power source in the normal mode and by an internal or external dc power source in the emergency mode.

Type ELI (Exit Light Independent) — Same as Type EFI except intended for use certified exit lights energized by an ac power source in the normal mode and by an internal or external dc power source in the emergency mode.

Exit fixture retrofit kits are intended for use in indoor, dry locations unless marked suitable for wet or damp locations. Exit fixture retrofit kits containing fluorescent or electroluminescent lamps and marked as being suitable for damp or wet locations are for use in an ambient temperature not less than that marked on the product.

These retrofit kits have been investigated to determine that when used in accordance with the manufacturer's instructions, they do not adversely affect the operation of a certified exit fixture.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 141 (2010), ''Emergency Lighting Equipment.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

EXIT SIGN RETROFIT KIT
TYPE +
FOR USE ONLY WITH EXIT ++ MODEL *
MANUFACTURED BY ____
Control No.

\+ **EFG**, **EFI**, **ELG** or **ELI**

++ **FIXTURE** (for Types EFG and EFI) or **LIGHT** (for Types ELG and ELI)

* Additional model/manufacturer combinations may be noted

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FABRICS CERTIFIED FOR CANADA (GPIX7)

GENERAL

This category covers flame-resistant fabrics for tentage, awnings, special-purpose covers, draperies, decorations, and other uses under ordinary conditions.

Flame-resistant Fabrics, Impregnated — These are chemically treated fabrics, in various colors, which are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds.

The treatment may be expected to remain effective under ordinary conditions or exposure for the useful life of the fabric. Laundering or other cleaning methods will reduce the effectiveness of the treatment when so indicated in the individual Classifications.

The fabrics are processed either with or without striping as indicated.

Flame-resistant Fabrics, Plastic Coated — These fabrics are composed of plastic-coated fibers, in various colors, which are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds. Laundering or other cleaning methods will not affect the flammability of the fabrics unless indicated.

Flame-resistant Fabrics, Synthetic — These fabrics are composed of woven synthetic fibers, in various colors, which are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds. Smoldering combustion may follow flaming and may spread in folds. Laundering or other cleaning methods will not affect the flammability of the fabrics unless indicated.

Flame-resistant Fabrics, Plastic Faced — These are composed of fabrics to which a plastic film, in various colors, is laminated to one or both sides. They are comparatively difficult to ignite and do not propagate flame beyond the area exposed to the source of ignition when used in single sheets or in folds. Laundering or other cleaning methods will not affect the flammability of the fabrics unless indicated.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S109, ''Flame Tests of Flame-Resistant Fabrics and Films.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FABRICS
AS TO FLAME-RESISTANCE ONLY
Control No.

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FACTORY AUTOMATION EQUIPMENT CERTIFIED FOR CANADA (GPNY7)

USE AND INSTALLATION

This category covers production equipment for attended and unattended assembly of products and subassemblies. This equipment is designed to be programmed for a specific manufacturing application, such as assembly of components, packaging, sorting, or counting or parts, or hole punching or cutting. The equipment may also incorporate manufacturing processes involving heating or cooling, drying, or gluing of parts.

This equipment is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

SPECIAL CONSIDERATIONS

This equipment is not intended for the handling of hazardous materials in unattended applications, or intended for fire protection service.

RELATED PRODUCTS

Robotics and associated control equipment are covered under Robots and Robotic Equipment Certified for Canada (TETZ7).

Industrial control panels are covered under Industrial Control Panels Certified for Canada (NITW7).

Equipment intended primarily for measurement of physical or chemical properties of materials, measurement of the functional performance of a piece of equipment, qualitative or quantitative constituent analysis of substances, or preparation of materials for further analysis or measurements is covered under Laboratory Use Electrical Equipment Certified for Canada (OGTK7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14 (1995), ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Factory Automation Equipment.''

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FAN PARTS CERTIFIED FOR CANADA (GPPF7)

USE

This category covers fans and blowers for use in commercial and industrial applications intended to move air for the purposes of air circulation or ventilation. These products are investigated as complete assemblies but are certified as fan heads and fan stands/mounting assemblies with unique model designations. This category covers commercial/industrial fan head assemblies, pedestals, wall-mounting brackets and ceiling-mounting brackets.

This category does not cover fans intended for household or residential use, motors, blade assemblies, fan guards or grills.

PRODUCT MARKINGS

Fan parts covered under this category are marked ''For Commercial or Industrial Use Only.''

Fan heads covered under this category are marked ''CAUTION: To Reduce the Risk of Personal Injury, Use Only With Stand/Mounting Assembly Models ____, Manufactured by ____.''

Fan stands/mounting assemblies covered under this category are marked ''CAUTION: To Reduce the Risk of Personal Injury, Use Only With Fan Head Assembly Model ____, Manufactured by ____.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113, "Fans and Ventilators."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fan Part," or other appropriate product name as shown in the individual Listings

* *

FANS, CEILING SUSPENDED CERTIFIED FOR CANADA (GPRT7)

GENERAL

This category covers:

- Ceiling-suspended fans intended to be mounted to a ceiling outlet box or ceiling building structure, and whose blades rotate below the ceiling to move air for the purpose of air circulation.
- Light kits intended for use with ceiling-suspended fans.

Ceiling-suspended fans and accessories intended for permanent installation are provided with means for connection to permanent wiring systems.

This category does not cover ceiling-suspended fans intended to be used in hazardous (classified) locations as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I," or intended to be installed over solvents or chemically flammable liquids or vapors or located in a chemically corrosive environment.

PRODUCT MARKINGS

Ceiling-suspended fans intended for mounting beneath a ceiling structure, such as provided on porches, patios and the like, are marked as being acceptable for use in damp locations. Ceiling-suspended fans intended for outdoor use are marked as being acceptable for such use.

Fans investigated for use with solid-state fan-speed controls may be marked as being acceptable for such use.

Ceiling-suspended-fan light kits are provided with a marking on the light kit, on the packaging carton, and in the instructions to indicate the fan models with which they are suitable.

The following markings are permanent, legible, and readily visible after installation: the manufacturer's identification, model designation, electrical ratings and date code. Other markings may be required as specified above.

RELATED PRODUCTS

Fan-speed controllers for use with fans are covered under Fan-speed Controllers Certified for Canada (GQHG7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113, "Fans and Ventilators."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Ceiling Fan," "Ceiling Suspended Fan" or "Fan Accessory," or other appropriate product name as shown in the individual Listings.

The Listing Mark for this category requires the use of a holographic label.

* *

FANS, ELECTRIC CERTIFIED FOR CANADA (GPWV7)

GENERAL

This category covers:

- Fans and blowers intended for air circulating and ventilating
- Dryer-type fans used for drying carpets or floors

This category does not cover:

- Permanently installed fans and blowers intended to move air for the purpose of air circulation, ventilation, exhaust, blending or recirculation
- Residential rangehoods for permanent connection to the power supply or for cord connection to the power supply, remote blowers intended for residential cooking-area exhaust, and self-contained downdraft ventilators
- Fans intended to be used in hazardous (classified) locations as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I," or intended to be installed over solvents or chemically flammable liquids or vapors or located in a chemically corrosive environment
- Air heaters incorporating fans, heating-ventilating units, or blower comprised of such equipment as furnaces, mechanical-refrigeration equipment or air conditioners

Fans intended for use where they will be exposed to weather, such as window fans, have been investigated to determine the effect of rain on electrical components.

PRODUCT MARKINGS

Fans intended for outdoor use are marked as being acceptable for such use.

Fans investigated for use with solid-state fan-speed controls may be marked as being acceptable for such use. Fans not investigated for use with solid-state fan-speed controls are provided with instructions indicating that the fan is not to be used with these products.

When an appliance consists of two or more subassemblies, each subassembly is marked to indicate those other subassemblies that may be used to complete an assembly.

The following markings are permanent, legible, and readily visible after installation: the manufacturer's identification, model designation, electrical ratings and date code. Other markings may be required as specified above.

RELATED PRODUCTS

Permanently installed fans are covered under Fans, Electric, Permanently Installed Type Certified for Canada (GPWX7).

Fans and blowers intended to move heated or conditioned air are covered under Ventilators, Power Certified for Canada (ZACT7).

Fans that include filters or means to control humidity or cool air are covered under Air Filtering Appliances Certified for Canada (AEDX7), Humidifiers Certified for Canada (AHIV7) or Evaporative Coolers Certified for Canada (AGNY7).

Hand dryers incorporating heaters are covered under Heaters, Specialty Certified for Canada (KSOT7).

Compressor-type inflators are covered under Compressors, Vacuum Pumps and Paint Sprayers Certified for Canada (QDGS7).

Fan-type deodorizers and fan-type air fresheners are covered under Deodorizers and Air Fresheners Certified for Canada (EOGX7).

Ionizers and fans employing ionizers are covered under Ion Generators Certified for Canada (OETX7).

Fans employing electrostatic air cleaners are covered under Electrostatic Air Cleaners Certified for Canada (AGGZ7).

"Paddle" fans whose blades rotate below the ceiling are covered under Fans, Ceiling Suspended Certified for Canada (GPRT7).

Light kits intended for use with ceiling-suspended fans are covered under Fans, Ceiling Suspended Certified for Canada (GPRT7).

Fan-speed controls intended for use with fans are covered under Fan-speed Controls Certified for Canada (GQHG7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113, "Fans and Ventilators."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fan," "Electric Fan" or "Fan Accessory," or other appropriate name as shown in the individual Listings.

The Listing Mark for this category requires the use of a holographic label.

* *

FANS, ELECTRIC, PERMANENTLY INSTALLED TYPE CERTIFIED FOR CANADA (GPWX7)

GENERAL

This category covers:

Permanently installed fans and blowers intended to move air for the purpose of air circulation, ventilation, exhaust, blending or recirculation

Residential rangehoods for permanent connection to the power supply or for cord connection to the power supply, remote blowers intended for residential cooking-area exhaust, and self-contained downdraft ventilators

This category does not cover:

Fans intended to be used in hazardous (classified) locations as defined by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' or intended to be installed over solvents or chemically flammable liquids or vapors or located in a chemically corrosive environment

Air heaters incorporating fans, heating-ventilating units, or blowers comprised of such equipment as furnaces, mechanical-refrigeration equipment or air conditioners

Portable, cord-connected fans

Fans and accessories intended for permanent installation are provided with means for connection to permanent wiring systems.

Fans or fan/light combinations intended to be mounted over tubs or showers have been investigated for such purposes and are marked to indicate acceptability for such installations.

Fans intended for use where they will be exposed to weather have been investigated to determine the effect of rain on electrical components.

Attic fans are normally installed with shutters and are not subjected to a rain test; similarly, wall-insert fans are not subject to a rain test, and are marked not for use in windows. Fans intended for mounting in interior walls or ceilings are marked to indicate the intended use, unless the design is such as to make the intended method of installation obvious.

Fans and accessories intended for use over cooking equipment have been investigated to determine the effect of grease on electrical parts and are marked where suitable for use in household cooking areas. These units are intended for use over electric ranges or ovens only and include hood fans intended for use over (but not mounted directly on) ranges, separate hoods provided with lights or other wiring and intended for use over ranges in conjunction with wall- or ceiling-insert fans, and oven ventilators for use over wall-insert ovens.

None of the fans covered under this category have been investigated for use over cooking appliances that use solid or liquid fuel. Fans other than the recirculating type installed in an area in close proximity to a stove, range or oven, where away from the cooking area, should be installed in such a manner as to discharge the air to the exterior of the building and not into concealed walls or ceiling spaces or into the attic.

PRODUCT MARKINGS

Fans intended for outdoor use are marked as being acceptable for such use.

Fans investigated for use with solid-state fan-speed controls may be marked as being acceptable for such use. Fans not investigated for use with solid-state fan-speed controls are provided with instructions indicating that the fan is not to be used with these products.

When an appliance consists of two or more subassemblies, each subassembly is marked to indicate those other subassemblies that may be used to complete an assembly.

The following markings are permanent, legible, and readily visible after installation: the manufacturer's identification, model designation, electrical ratings and date code. Other markings may be required as specified above.

RELATED PRODUCTS

Portable, cord-connected fans are covered under Fans, Electric (GPWV).

Fans and blowers intended to move heated or conditioned air are covered under Ventilators, Power Certified for Canada (ZACT7).

Fans that include filters or means to control humidity or cool air are covered under Air Filtering Appliances Certified for Canada (AEDX7), Humidifiers Certified for Canada (AHIV7) or Evaporative Coolers Certified for Canada (AGNY7).

Hand dryers incorporating heaters are covered under Heaters, Specialty Certified for Canada (KSOT7).

Microwaves employing cooking-area ventilation are covered under Microwave Cooking Appliances Certified for Canada (KQSQ7).

Compressor-type inflators are covered under Compressors, Vacuum Pumps and Paint Sprayers Certified for Canada (QDGS7).

Fan-type deodorizers and fan-type air fresheners are covered under Deodorizers and Air Fresheners Certified for Canada (EOGX7).

Ionizers and fans employing ionizers are covered under Ion Generators Certified for Canada (OETX7).

Fans employing electrostatic air cleaners are covered under Electrostatic Air Cleaners Certified for Canada (AGGZ7).

''Paddle'' fans whose blades rotate below the ceiling are covered under Fans, Ceiling Suspended Certified for Canada (GPRT7).

Light kits intended for use with ceiling-suspended fans are covered under Fans, Ceiling Suspended Certified for Canada (GPRT7).

Fan-speed controls intended for use with fans are covered under Fan-speed Controls Certified for Canada (GQHG7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113 (2012), ''Fans and Ventilators.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fan,'' ''Electric Fan'' or ''Fan Accessory,'' or other appropriate product name as shown in the individual Listings.

The Listing Mark for this category requires the use of a holographic label.

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RANGEHOOD CORD-CONNECTION KITS CERTIFIED FOR CANADA (GQFM7)

USE AND INSTALLATION

This category covers rangehood cord-connection kits intended to adapt specific rangehoods for cord connection to the power supply. These rangehood cord-connection kits are limited to installation with specific makes and models of rangehoods as indicated on the rangehood cord-connection-kit packaging and in the installation instructions.

ADDITIONAL INFORMATION

See Fans, Electric, Permanently Installed Type Certified for Canada (GPWX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113 (2010), ''Fans and Ventilators.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RANGEHOOD CORD-CONNECTION KIT
FOR USE WITH LISTED RANGEHOOD SPECIFIED IN MARKINGS ON THE PACKAGING
Control No.

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FAN-SPEED CONTROLS CERTIFIED FOR CANADA (GQHG7)

GENERAL

This category covers semiconductor, single-phase motor speed controls rated up to 300V, 20 A or less, designed to be used in circuits for the control of shaded pole, permanent split capacitor, or universal motors, and other motors suitable for use with this type of control.

These products may be outlet box mounted, cord-and-plug connected, or intended for mounting in the fan canopy. Cord-and-plug-connected controls are intended for control of cord-and-plug-connected fans only.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 156 (1987), ''Solid-State Speed Controls.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fan Speed Control'' or ''Solid-State Fan Speed Control.''

* *

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FANS, ELECTRIC FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (GQJA7)

GENERAL

This category covers stationary and portable electric fans. Fans are provided with motors certified for the location in which the fan will be used.

Portable fans are sealed from terminal compartments, which have provision for connection of three-conductor, flexible, extra-hard-usage cord having a grounding conductor. Connection of portable fans to supply lines require the use of receptacles with plugs or receptacles with plugs interlocked with snap switches, or their equivalent, certified for the specified hazardous locations. The flexible cord connected to the units should be frequently examined and replaced when necessary. Terminal connections should be properly made and maintained.

Authorities Having Jurisdiction should be consulted with regard to conditions under which portable equipment is permitted for use. It is recognized that portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 145 (1986), ''Motors and Generators for Use in Hazardous Locations,'' and/or CSA Electrical Certification Notice No. 672, ''Motors Used in Division 2 Locations'' (January 23, 1990).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Fan for Use in Hazardous Locations'' or ''Portable Electric Fan for Use in Hazardous Locations.''

* *

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FANS, PORTABLE PNEUMATIC FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (GQJX7)

GENERAL

This category covers portable pneumatic fans for use in hazardous locations. This equipment has been investigated for connection to air-supply lines that are made of electrically conductive material in accordance with applicable codes. Ground terminal connections should be properly made and maintained.

Authorities Having Jurisdiction should be consulted with regard to conditions under which this portable equipment will be permitted for use. Portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 145 (1986), ''Motors and Generators for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Portable Pneumatic Fan for Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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FC CABLE CERTIFIED FOR CANADA (GQKT7)

USE AND INSTALLATION

This category covers flat cable for use in flat cable systems intended for field installation on branch circuits of not more than 600 V between conductors, in accordance with the CAN/CSA C22.1, ''Canadian Electrical Code, Part I.''

The cable is marked with the cable type designation ''Flat Cable,'' manufacturer's identification, voltage and current ratings, conductor size, and temperature rating.

Flat cable is not intended to be installed outdoors or in wet or damp locations.

A marking accompanying the cable on a tag or reel indicates the special metal raceways and specific flat cable fittings with which the cable is intended to be used. Installation instructions are supplied by the manufacturer for use by the general contractor, erector, electrical contractor, inspector, and others concerned with the installation.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in Technical Information Letter No. J-25A, ''Interim Certification Requirements for Flat Cable Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Flat Cable.''

* *

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FC CABLE FITTINGS CERTIFIED FOR CANADA (GQRS7)

USE AND INSTALLATION

This category covers power tap and cable termination fittings intended for use with FC cable installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

A fitting is suitable for use only with cable identified for use with that fitting.

Installation instructions are provided by the manufacturer.

ADDITIONAL INFORMATION

For additional information, see FC Cable Certified for Canada (GQKT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 65 (2003), ''Wire Connectors,'' and CSA-C22.2 No. 42 (1999), ''General Use Receptacles, Attachment Plugs and Similar Wiring Devices.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with

FC Cable Fittings Certified for Canada (GQRS7)−*Continued*

the word ''LISTED,'' a control number, and the product name ''FC Cable Fitting,'' ''Power Tap'' or ''Cable Feed,'' or other appropriate product name as shown in the individual Listings.

* *

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FENCE CONTROLLERS, ELECTRIC CERTIFIED FOR CANADA (GQYR7)

GENERAL

This category covers electric-fence controllers intended for use with conductive fences installed in rural locations, insulated from ground, for the containment of livestock. The fire and electric shock hazards incident to the use of these fences have been reduced to a reasonable degree, provided installation and operation are in accordance with the nameplate information.

Requirements for the operation of electric-fence controllers provide for intermittent energizing of the fence when currents of sufficient magnitude to prevent voluntary breaking of contact are involved. An ''off'' period between impulses is provided in which voluntary muscular control can be regained and contact with the fence broken. It should be recognized that failure to break contact with the fence, due to other than electrical causes, may dangerously increase the hazard related to the use of these devices.

Electric-fence controllers are classified according to the source of supply of the unit and the intended installation.

This category does not covers electric-fence controllers intended for security purposes.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 103 (1992), ''Electric Fence Controllers.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Electric Fence Controller.''

* *

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FIRE DOORS CERTIFIED FOR CANADA (GSNV7)

Fire doors are classified in the following categories: Dumbwaiter, Freight Elevator, Passenger Elevator, Sliding, Special Purpose and Swinging Type Doors.

Fire doors are designed for the protection of openings in walls and partitions against fire when installed in accordance with the instructions in the National Fire Protection Association Standard for Fire Doors and Windows, NFPA 80, and the appropriate requirements contained in the National Building Code of Canada.

For the protection of openings in walls and partitions which are evaluated only to international requirements, see '' Doors Evaluated in Accordance with ISO Publications'' in the Products Evaluated in Accordance with International and Regional Standards Directory.

The rating of 3 —, 1-1/2 —, 1 —, 3/4 — hours, or 20 minutes indicates the duration of exposure to fire. A temperature rise rating of 250 C or 450 F on the Classification Marking applies to the temperature rise developed on the unexposed surface of the door after the first 30 or 60 minutes of fire exposure, as noted on the Classification Marking. Classification Markings which do not indicate a temperature rise are for doors which develop a temperature rise in excess of 250 C or 450 F on the unexposed surface of the door within the first 30 minutes of fire exposure. All doors with glass lights in excess of 0.065 sq m (100 sq in.) are not eligible for a temperature rise rating. Doors with glass light panels of 0.065 sq m (100 sq in.) or less carry the same rating as similar doors without glass vision panels.

Glazing materials covered under this category are Classified as to fire resistance only. The glazing materials are intended to be installed in the fire doors in accordance with NFPA 80 and the installation instructions provided by the manufacturer of the door, glass light frame or glazing material. See Fire-protection-rated Glazing Materials Certified for Canada (KCMZ7).

A door prepared at the factory for a glass light includes the glazing members (frame) but normally does not include the glazing itself. Glazing materials are usually provided by other than the door manufacturer and installed at the time of the door installation.

The protection of an opening depends not only upon the use of fire doors, but also upon the use of Listed door frames and other Listed accessories as specified under each door type. Prospective users should first ascertain from Authorities Having Jurisdiction which door type, mounting, Listed hardware, Listed door frame, and Listed closing mechanism are acceptable for a specific location.

While doors of the freight elevator type, rolling steel type, special purpose type and sliding type or swinging hollow-metal type exceeding the sizes recorded in the tabulations under their respective types have not been subjected to fire tests, a Certificate for Oversized Fire Door can be provided for door assemblies in compliance (except for size), with all requirements for design, materials and construction. The Oversize Certificate will be a label certificate affixed to the door assembly.

Some oversize doors bearing the Oversize Certificate may exceed the size and requirements noted in the National Building Code of Canada. Prospective users of oversize doors should first ascertain from Authorities Having Jurisdiction the acceptability of a particular size and type of door for a specific location.

Similarly, an attached Certificate for Passenger Elevator Fire Door Frame Assemblies incorporating a transom panel can be provided when such frame/transom panel assemblies, designed for use with specific Classified Passenger Elevator Fire Doors and Listed Passenger Elevator Fire Door Hardware, exceed the maximum heights which have been subjected to Standard Fire Tests. As with the oversize doors described above, prospective users should first ascertain from the Authority Having Jurisdiction whether the oversize frame assembly is acceptable for any given location.

The Classification Marking of UL (shown under the specific door type) on the product is the only method provided by UL to identify Fire Doors which have been produced under its Classification and Follow-Up Service.

A Classification Marking on a door indicates only that it has been considered from the fire protection viewpoint without reference to the electrical or accident hazard features which may be involved. The electrical and accident hazard features, if considered, are covered by separate listings. The Classification Marking reading ''(type of door) Fire Door'' pertains only to the door to which it is applied and does not pertain to the frame, hardware or other accessories with which it is installed. The Classification Marking reading ''(type of door) Frame and Fire Door Assembly'' pertains to the door, frame or guide and necessary hardware, and is applicable to those types of doors in which the mounting and operating parts are specially designed for the door and are not interchangeable. In a Frame and Fire Door Assembly the door, frame and hardware are shipped together from the door manufacturer's factory.

The Classification Marking consists of the UL Mark for Canada symbol together with the word ''CLASSIFIED'' (as illustrated in the Introduction of this Directory), a control number and one of the following statements:

CLASSIFIED
"DOOR TYPE" FIRE DOOR No._____
Rating: 3 Hr. Temp Rise — 30 Min. 250 C. Max.

''Door Type'' such as Freight Elevator or Passenger Elevator.

''Fire Door'' Classification Markings, similar to the one illustrated, are also provided with the following ratings: 3 HR, 1-1/2, or 1 HR with Temp. Rise — 30 Min — 250 C (450 F) Max; 3 HR, 1-1/2 HR or 1 HR, with Temp. Rise — 6 Min — 250 C (450 F) Max; 3 HR, 1-1/2 HR, 3/4 HR or 20 Min with no reference to temperature rise.

CLASSIFIED
"DOOR TYPE" FRAME AND FIRE DOOR ASSEMBLY
No._____
Rating: 1-1/2 Hr. Temp. Rise — 30 Min. 250 C. Max.

''Door Type'' such as Dumbwaiter.

''Frame and Fire Door Assembly'' Classification Marking, similar to the one illustrated, are also provided with the following ratings: 1-1/2 HR Temp Rise — 30 Min. — 250 C (450 F) Max., 1-1/2 HR Temp Rise — 6 Min. — 250 C (450 F) Max; or 1-1/2 HR with no reference to temperature rise.

* *

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ACCESS-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSOT7)

USE AND INSTALLATION

This category covers access-type fire doors, which are assemblies consisting of single-swinging steel doors with frames, self-latching devices and closing mechanisms.

Access-type fire door assemblies are intended to be installed vertically in concrete and masonry walls unless otherwise noted in the individual certifications. Access-type fire door assemblies intended to be installed in non-masonry walls or in nonvertical altitude should be installed in accordance with the installation instructions provided with each assembly to provide the protection indicated.

Access-type fire door assemblies are intended to be installed in accordance with ANSI/NFPA 80, "Fire Doors and Other Opening Protectives," and the "National Building Code of Canada."

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark covers the design and construction of the door, frame and hardware. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ACCESS FRAME AND FIRE DOOR ASSEMBLY
FIRE RESISTANCE CLASSIFICATION
*** RATING**
SEE UL FIRE RESISTANCE DIRECTORY
No.

* Includes an hourly duration, such as "1 HR," and may include a temperature rise performance statement, such as "TEMP RISE: 250°C – 30 MIN" or "TEMP RISE: 250°C – 60 MIN"

* *

CHUTE-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSPR7)

This category covers chute type fire doors.

Chute doors of the intake and discharge types are of formed steel, of the flush design, with frames, latching, and closing mechanisms.

Each door bears a Chute Frame and Fire Door Assembly Classification Marking with one of the following ratings: 1-1/2 HR Temp Rise -30 Min-250C (450 F Max); 1-1/2 HR Temp Rise-60 Min -250 C (450 F) Max; or 1-1/2 HR, 1 HR, or 3/4 HR with no reference to temperature rise. The Classification Marking on all doors of these types covers the design and construction of the door, frame, and hardware; and for service counter doors, the Classification Marking also includes the sill.

Chute doors of the intake type are Classified for openings not exceeding 914 mm (36 in.) in width and 914 mm (36 in.) in height, or 610 mm (24 in.) in diam; and discharge doors not exceeding 914 mm (36 in.) in width and 1219 mm (48 in.) in height. The requirements for chute doors intended for rubbish handling are described in the National Fire Protection Association Standard, Incinerators and Rubbish Handling NFPA 82.

Chute doors are intended to be installed in concrete and masonry walls unless otherwise noted in the individual Classifications.

Chute doors intended to be installed in non-masonry walls must be installed in accordance with the installation instructions provided with each assembly to provide the protection indicated.

For additional information and Classification Marking see Fire Doors, Guide GSNV7.

The basic standard used to investigate products in this category is CAN4-S104-80M, "Standard Method For Fire Tests Of Door Assemblies".

* *

DUMBWAITER-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSRV7)

This category covers dumbwaiter type frame and fire door assemblies.

Dumbwaiter doors are of counterbalanced and swinging types of the flush design, of formed steel and included wall guides, frame, latching, and counterbalancing mechanisms.

Each door assembly bears a "Dumbwaiter Frame and Fire Door Assembly" Classification Marking with one of the following ratings: 1-1/2 HR Temp Rise — 30 Min — 250 C (450 F) Max; 1-1/2 HR Temp Rise — 6 Min — 250 C (450 F) Max; or 1-1/2 HR or 3/4 HR with no reference to temperature rise. The Classification Marking on all these doors covers the design and construction of the door, frame, and hardware.

INSTALLATION:

For standards on the installation of hoist way doors see NFPA 80.

Sizes

Dumbwaiter doors are Classified for openings not exceeding 1245 mm (49 in.) in width and 2286 mm (90 in.) in height.

Dumbwaiter doors are intended to be installed in concrete and masonry wall unless otherwise noted in the individual Classifications.

Dumbwaiter doors intended to be installed in non-masonry walls must be installed in accordance with the installation instructions provided with each assembly to provide the protection indicated.

Glass Panels.

Dumbwaiter doors may be provided with Classified 6 mm (1/4 in.) Classified thick wired-glass vision lights not exceeding 76 mm (3 in.) in diameter per opening.

For additional information and Classification Marking see Fire Doors, Guide GSNV7.

The basic standard used to investigate products in this category is CAN4-S104-80M, "Standard Method For Fire Tests of Door Assemblies".

* *

FREIGHT-ELEVATOR-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSST7)

This category covers freight elevator fire doors of the single-swing or counterbalanced type. The doors consist of either formed steel-sheets, hollow-metal, or metal covered wood units. The counterbalanced door assembly includes the door panels, frame (optional), guides, latching device, and counterbalance mechanism.

Each door or door assembly bears a "Freight Elevator Fire Door" Classification Marking with one of the following ratings: 1-1/2 HR, Temp Rise — 30 Min — 250 C (450 F) Max or 1-1/2 HR, Temp Rise — 60 Min 250 C (450 F) Max or 1-1/2 HR with no reference to temperature rise. The Classification Marking covers the design and construction of the door or door assembly.

INSTALLATION:

Freight elevator doors are intended to be installed in concrete and masonry walls, unless otherwise noted in the individual Classifications.

For standards on the installation of hoist way doors see NFPA 80.

Sizes:

Counter-balanced steel, hollow-metal, and metal clad, freight elevator type doors are Classified for openings not exceeding 4115 mm (13 ft 6 in.) in width and 3658 mm (12 ft) in height in masonry or 3353 mm (10 ft 10 in.) in width and 3200 mm (10 ft 6 in.) in height in non-masonry walls.

Single-swing freight elevator doors are Classified for openings not exceeding 1219 mm (4 ft) wide and 2438 mm (8 ft) high in masonry or non-masonry walls.

Door Frames:

Swinging type freight elevator doors are to be installed in Listed door frames to provide the protection indicated.

Counterbalanced type freight elevator doors may be installed in concrete and masonry walls without a frame. Counter-balanced type freight elevator doors shall be installed in non-masonry walls and may be installed in concrete or masonry walls with the frame supplied with the door assembly or in a Listed frame as indicated in the individual frame listings. When a frame is used with counterbalanced doors, it is to be installed in accordance with the installation instructions provided with each door assembly to provide the protection indicated.

See "Door and Window Frames" (GVTV7).

Glass Panels:

These doors may be provided with Classified 6 mm (1/4-in.) thick Classified wired-glass vision panels. The sum of the exposed area or areas per opening does not exceed 0.065 m^2 (100 sq in.) with neither dimension exceeding 305 mm (12 in.)

For additional information and Classification Marking see Fire Doors (GSNV7).

Freight-elevator-type Fire Doors Certified for Canada (GSST7)−*Continued*

The basic standard used to investigate products in this category is CAN4-S104-80M, "Standard Method For Fire Tests of Door Assemblies".

* *

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PASSENGER-ELEVATOR-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSUX7)

This category covers passenger elevator fire doors of the single-swing or sliding hollow-metal type. The sliding door panels may be used in single slide assemblies of the one, two, or three speed type, or they may be used in center parting assemblies of the one or two speed type.

Each door panel bears a "Passenger Elevator Fire Door" Classification Marking with the following rating: 1-1/2 HR with Temp Rise -60 min - 250 C (450 F); 1-1/2 HR with Temp Rise - 30 min - 250 C (450 F) max; 1-1/2 HR, 1 HR or 3/4 HR with no reference to temperature rise. The Classification Marking covers the design and construction of the door or door panels only.

INSTALLATION:

For standards on the installation of hoist way doors for elevators see NFPA 80.

Elevator Door Hardware:

The sliding door panels shall be installed with Listed Hardware consisting of hangers, track, header, sill, closer, and retaining clips (as indicated in the individual hardware listing). See "Passenger Elevator Door Hardware, (GZKZ7)" .

The swinging door panels shall be installed with sill, hinges, Listed frame, Listed latching device and Listed closing device. For Listed frames and latching devices see "Door Frames (GVST7)", "Single-Point Locks or Latches (GYJT7)" . Doors must be provided with hinges or pivots in accordance with the instructions in NFPA 80.

Sizes:

Sliding passenger elevator Fire doors are Classified for openings not exceeding 2438mm (8 ft) wide and 3048mm (10 ft) high.

Single-swing passenger elevator Fire doors are Classified for openings not exceeding 1219mm (4 ft) wide and 2438mm (8 ft) high.

Glass Panels:

Sliding doors may be provided with glass panels.

Single-swing doors shall be provided with glass panels.

The glass panel shall be of Classified 6mm (1/4 in.) thick wired glass. The area of a single glass panel shall be not less than 0.016m^2 (25 sq in.) and the total area of one or more glass panels shall not be more than 0.052m^2 (80 sq in.) Each glass panel shall reject a ball 152mm (6 in.) in diameter.

Door Frames

Passenger elevator fire doors used in dry wall shaft construction must be installed in Listed door frames to provide the protection indicated. When acceptable to the authority having jurisdiction Classified Passenger Elevator Fire Doors may be installed, along with Listed Passenger Elevator Door Hardware, in an oversize Passenger Elevator Fire Door Frame assembly furnished with a Certificate of Inspection. See "Door Frames" (GVST7).

INTERLOCKS

Elevator door assemblies that may be provided with an interlock and associated wiring which is operational for a minimum of 1 h when the assembly is subjected to the fire exposure described in CAN4-S104-80M, Standard Method For Fire Test of Door Assemblies, are identified in the individual door listings and on the door Classification Mark.

For additional information and Classification Marking see "Fire Doors (GSNV7)" .

The basic standard used to investigate products in this category is CAN4-S104-M80, "Standard Method For Fire Tests of Door Assemblies".

* *

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ROLLING STEEL FIRE DOORS CERTIFIED FOR CANADA (GSVV7)

USE AND INSTALLATION

This category covers rolling steel fire doors, which consist of interlocking galvanized or stainless steel slats, bottom bar, wall guides, barrel assembly, automatic release device, governor, and counterbalance mechanism. The doors may be provided with a motor drive assembly that does not interfere with the manual or automatic (fusible link, other fixed temperature release, or a rate of rise temperature release) closing of the door.

Rolling steel fire doors are intended to be installed in accordance with ANSI/NFPA 80, "Fire Doors and Other Opening Protectives," and the "National Building Code of Canada." Authorities Having Jurisdiction should be consulted before installation.

Rolling steel fire doors are intended to be installed in concrete and masonry walls, unless otherwise noted in the individual Classifications. The doors are intended to be installed in accordance with the installation instructions provided with each assembly.

Rolling steel fire doors intended to be installed as service-counter doors may be installed with either a masonry sill or a factory-built countertop as described in Miscellaneous Fire Door Accessories Certified for Canada (GVUX7). For service-counter doors of the rolling type, see Service Counter-type Fire Doors Certified for Canada (GSWT7).

Rolling Steel Fire Doors Certified for Canada (GSVV7)−*Continued*

SIZES

Two types of Classification Marks are available for rolling steel fire doors based upon the size of the door. The maximum size of a rolling steel fire door that has been subjected to a fire test is intended for an opening not exceeding 14.1 sq m (152 sq ft) in area, with no dimension exceeding 4115 mm (13 ft 6 in.). Rolling steel fire doors intended for openings not exceeding 14.1 sq m (152 sq ft) in area and with no dimension exceeding 4115 mm (13 ft 6 in.) bear the "Rolling Steel Fire Door" Classification Mark.

Rolling steel fire doors exceeding these maximum dimensions and manufactured in compliance (except for size) with UL's requirements for design, materials and construction bear the "Oversized Rolling Steel Fire Door" Classification Mark. Oversized doors are not Classified as to temperature transmission. Prospective users should ascertain from the Authority Having Jurisdiction whether the assembly is acceptable for a specific location.

GLAZING

Rolling steel fire doors may be provided with glass lights, as indicated in the individual Classifications. For additional information and Classification Mark, see Fire-protection-rated Glazing Materials Certified for Canada (KCMZ7).

BOTTOM BAR REPLACEMENT

The bottom bar of rolling steel fire doors is subject to damage from everyday use and occasionally the damage warrants replacement of the bottom bar. When the Classification Mark is attached to the bottom bar, the following method is authorized for replacement of the bottom bar. When acceptable to the Authority Having Jurisdiction, the Classification Mark may be removed from the bottom bar and returned to the door manufacturer along with a request for a new bottom bar. The door manufacturer is authorized to provide a replacement bottom bar for field installation with a Classification Mark that reads "Replacement Part for Rolling Fire Door" or "Replacement Part for Oversized Rolling Fire Door." The Classification Mark also includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), a serial number, and a fire rating equal to that of the original Classification Mark that was returned to the manufacturer.

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104 (1980), "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark covers the design and construction of the door, including the governor and automatic releasing mechanism. The Classification Mark for regular-sized rolling steel fire doors includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ROLLING STEEL FIRE DOOR
FIRE RESISTANCE CLASSIFICATION
RATING: + HR
TEMP RISE: ++
No.

The Classification Mark for oversized rolling steel fire doors includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

Rolling Steel Fire Doors Certified for Canada (GSVV7)−*Continued*

OVERSIZED ROLLING STEEL FIRE DOOR
AS TO + HR FIRE RATING ONLY
SEE UL FIRE RESISTANCE DIRECTORY
No.

+ **4**, **3**, **1-1/2** or **3/4**

++ **30 MIN – 250°F MAX**, **30 MIN – 450°F MAX**, **30 MIN – 650°F MAX**, or no reference to temperature rise when the temperature rise exceeds 650°F at 30 min.

The UL Mark is generally attached to the bottom bar of the rolling steel fire door.

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SERVICE-COUNTER-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSWT7)

This category covers service counter fire doors.

Service counter doors are of the single and two-speed counterbalanced types of flush design, or of the rolling type, of formed steel, and include wall guides, frame, sill latching, and counterbalancing mechanisms.

Each door bears a "Service Counter Frame and Fire Door Assembly" . Classification Marking with one of the following ratings: 1-1/2 HR Temp Rise-30 Min-250 C (450 F) Max 1-1/2 HR Temp Rise-60 Min-450 C (650 F) Max; or 1-1/2 HR, 1 HR, 3/4 HR with no reference to temperature rise. The Classification Marking on all doors of these types covers the design and construction of the door, frame, hardware, and sill.

Sizes.

Service counter doors are Classified for openings not exceeding 3048 mm (10 ft) in width and 1829 mm (6 ft) in height.

Service counter doors are intended to be installed in concrete and masonry walls unless otherwise noted in the individual Classifications.

Service counter doors intended to be installed in non-masonry walls must be installed in accordance with the installation instructions provided with each assembly to provide the protection indicated.

Service counter doors of the panel type may be provided with Classified 6.35 mm (1/4 in.) thick Fire-protection-rated Glazing Material Certified for Canada (KCMZ7) vision panels not exceeding 0.065 sq m in.(100 sq in.) in an area with neither dimension exceeding 254 mm (10 in.)

For additional information and Classification Marking see Fire Doors Certified for Canada Guide GSNV7.

The basic standard used to investigate products in this category is CAN4-S104-1980, "Standard Method For Fire Tests of Door Assemblies".

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SLIDING-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSXV7)

Sliding type fire doors consist of the following constructions: Hollow-Metal.

CLASSIFICATION MARKINGS:

Each door bears the UL Mark for Canada symbol with the word "CLASSIFIED" (as illustrated in the Introduction of this directory) and "Sliding Type Fire Door," a control number and the statement:

CLASSIFIED
SLIDING TYPE FIRE DOOR No. _____
Rating: _____ +_____ Temp. Rise: _____ ++_____

3HR, 1-1/2 HR, 1HR, 3/4 HR, or 20 Min.

++30 Min — 250 C (450 F) Max, 60 Min — 250 C (450 F) Max, or no reference to temperature rise when the temperature rise exceeds 250 C at 30 min.

INSTALLATION:

Sliding type doors are intended for installation in concrete or masonry walls unless otherwise noted in the individual Classifications.

ASTRAGALS:

Center parting doors must be provided with an astragal in accordance with NFPA 80 to provide the protection indicated.

GLAZING:

Doors bearing 3 HR Classification Markings are not to be provided with glass lights.

Sliding-type Fire Doors Certified for Canada (GSXV7)−*Continued*

Doors bearing the 1-1/2 or 1 HR Classification Marking may be provided with Classified Glazing Materials for the glass lights. The sum of the exposed glass area shall not exceed 0.065m^2 (100 sq in.) per door, and the width and height shall not exceed 305 and 832mm (12 and 33 in.), respectively.

Doors bearing the 3/4 HR or 20 Min Classification Markings may be provided with one or more Classified Glazing Materials for the glass lights. The exposed area of each glass light shall not exceed 0.84m^2 (1296 sq in.) with no dimension exceeding 1372mm (54 in.)

Classified 6mm (1/4 in.) thick wired glass as well as other types of Classified glazing material are covered under Fire-protection-rated Glazing Materials Certified for Canada (KCMZ7). The glazing material is to be installed in accordance with the manufacturer's instructions to provide the protection indicated.

A door prepared at the factory for a glass light includes the glazing members (frame), but normally does not include the glass itself. The glazing material (glass) is usually provided by other than the door manufacturer and is installed in the field at the time of the door installation.

PASS DOOR:

Sliding doors may be provided with pass doors by some manufacturers as indicated by the individual Classifications.

The pass door, complete with all necessary hardware, is provided with the sliding door panel.

HARDWARE:

Sliding doors bearing the 3 HR, 1-1/2 HR, 1 HR, 3/4 HR or 20 Min must be provided with Listed fire door hardware to provide the protection indicated.

DOOR CLOSERS:

Doors must be provided with door closing devices in accordance with the instructions in NFPA 80.

DOOR TYPES AND SIZES:

The following tabulation of door sizes is provided as a reference guide and includes the maximum sizes currently Classified. The maximum door sizes will vary for each individual classification.

COMPOSITE TYPE

Composite doors include steel covered type fire doors. They consist of a manufactured core material with steel edges, and face sheets of steel. Steel covered composite doors are rated up to 3 HR.

		Max Size of Opening	
Type of Door	**Area Sq Ft**	**Width**	**Height**
Horizontal sliding, single slide or center parting	7.74m^2 (120 sq ft)	3658mm (12 ft 0 in.)	3658mm (12ft 0 in.)

HOLLOW-METAL TYPE

Hollow-metal doors consist of formed steel of the flush and paneled designs. Hollow metal doors are rated up to 3 HR.

		Max Size of Opening	
Type of Door	**Area Sq Ft**	**Width**	**Height**
Horizontal sliding, single slide or center parting	7.74m^2 (120 sq ft)	3658mm (12 ft 0 in.)	3658mm (12 ft 0 in.)

SHEET METAL TYPE

Sheet metal doors consist of formed steel of the corrugated, flush, and paneled designs. Sheet metal doors are rated up to 3 HR.

		Max Size of Opening	
Type of Door	**Area Sq Ft**	**Width**	**Height**
Horizontal sliding, single slide or center parting	7.74m^2 (120 sq ft)	3658mm (12 ft 0 in.)	3658mm (12 ft 0 in.)

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SPECIAL-PURPOSE FIRE DOORS CERTIFIED FOR CANADA (GSXZ7)

USE AND INSTALLATION

This category covers special-purpose fire door and frame assemblies. They consist of doors, frames, latches, hinges and closers of special construction or for special use as indicated in the individual Classifications. Special-purpose doors are intended to be installed in concrete, masonry or

Special-purpose Fire Doors Certified for Canada (GSXZ7)−*Continued*

nonmasonry walls in accordance with the installation instructions provided with each assembly to provide the protection indicated.

Authorities Having Jurisdiction should be consulted before installation.

SIZES

Two types of Classification Marks are available for special-purpose fire door assemblies based upon the size of the door. The maximum size of a special-purpose fire door that has been subjected to a fire test is intended for an opening not exceeding 14.1 sq m (152 sq ft) in area, with no dimension exceeding 4115 mm (13 ft 6 in.). Special-purpose fire doors intended for openings not exceeding 14.1 sq m (152 sq ft) in area and with no dimension exceeding 4115 mm (13 ft 6 in.) bear the ''Special Purpose Fire Door and Frame Assembly'' or individual ''Special Purpose Fire Door Assembly'' and ''Special Purpose Frame Assembly'' Classification Mark.

Special purpose fire doors exceeding these maximum dimensions and manufactured in compliance (except for size) with UL's requirements for design, materials and construction may bear a Classification Mark that includes the statement ''Oversized Special Purpose Fire Door.'' Oversized doors are not Classified as to temperature transmission. Prospective users should ascertain from the Authority Having Jurisdiction whether the assembly is acceptable for a specific location.

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104-1980, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark covers the design and construction of the door, the frame, and the hardware assembly to be installed in accordance with the installation instructions provided with each assembly. The Classification Mark for regular-sized special-purpose fire doors includes the UL Mark for Canada symbol, the word ″CLASSIFIED″ above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME*]
FIRE RESISTANCE CLASSIFICATION
**** RATING**
SEE UL FIRE RESISTANCE DIRECTORY
No.

* **SPECIAL PURPOSE FIRE DOOR AND FRAME ASSEMBLY**, **SPECIAL PURPOSE FIRE DOOR ASSEMBLY** or **SPECIAL PURPOSE FRAME ASSEMBLY**

** The rating includes an hourly duration, such as ''1Hr,'' and may include a temperature rise performance, such as ''Temperature rise – 250°F at 30 minutes.''

The Classification Mark for oversized special-purpose fire doors includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME*]
FIRE RESISTANCE CLASSIFICATION
**** RATING**
SEE UL FIRE RESISTANCE DIRECTORY
No.

* **SPECIAL PURPOSE OVERSIZED FIRE DOOR AND FRAME ASSEMBLY**, **SPECIAL PURPOSE OVERSIZED FIRE DOOR ASSEMBLY** or **SPECIAL PURPOSE OVERSIZED FRAME ASSEMBLY**

** The rating includes an hourly duration, such as ''1 Hr.''

****

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SWINGING-TYPE FIRE DOORS CERTIFIED FOR CANADA (GSYX7)

GENERAL

This category covers swinging-type fire doors consisting of the following constructions: hollow-metal and steel-covered composite.

INSTALLATION

Swinging-type doors are intended for installation in concrete, masonry and nonmasonry walls.

ASTRAGALS

Doors swinging in pairs in the same direction and double-egress doors swinging in opposite directions bearing the 3 h, 1-1/2 h, 1 h, 3/4 h, or 20 min Classification Mark may be provided with or without an astragal by some manufacturers as indicated in the individual Classifications.

Swinging-type Fire Doors Certified for Canada (GSYX7)−*Continued*

GLAZING

Glazing materials referenced in this category are Classified as to fire resistance only. The glazing materials are intended to be installed in fire doors in accordance with ANSI/NFPA 80, ''Fire Doors and Fire Windows,'' and the installation instructions provided by the manufacturer of the door, glass light frame or glazing materials. See Fire Door Glass Light Frames Certified for Canada (GVVX7) and Fire-protection-rated Glazing Materials Certified for Canada (KCMZ7).

Doors bearing 3 h Classification Marks are not intended to be provided with glass lights.

Doors bearing the 1-1/2 or 1 h Classification Marks may be provided with Classified glazing materials for the glass lights. The sum of the exposed glass area should not exceed 0.065m^2 (100 sq in.) per door and the width and height should not exceed 305 and 832 mm (12 and 33 in.), respectively.

Doors bearing 3/4 h or 20 min Classification Marks may be provided with one or more Classified glazing materials for the glass lights. The exposed area of each glass light should not exceed 0.84 m^2 (1296 sq in.) with no dimension exceeding 1372 mm (54 in.).

Classified 6 mm (1/4 in.) thick wired glass, as well as other types of Classified glazing material, are covered under Fire-protection-rated Glazing Materials Certified for Canada (KCMZ7). The glazing material is intended to be installed in accordance with the manufacturer's instructions to provide the protection indicated.

A door prepared at the factory for a glass light includes the glazing members (frame), but generally does not include the glass itself. The glazing material (glass) is usually provided by other than the door manufacturer and is installed in the field at the time of the door installation.

LOUVERS

Doors bearing the 1-1/2 h, 1 h, 3/4 h or 20 min Classification Mark may be provided with a Listed fire door louvers (see GVZS7) by some manufacturers as indicated in the individual Classifications.

Authorities Having Jurisdiction should be consulted before installation.

DUTCH DOOR

Single-swing, hollow-metal, dutch-type doors bearing the 3 h, 1-1/2 h, 1 h, 3/4 h or 20 min Classification Mark may be provided by some manufacturers as indicated in the individual Classifications.

A horizontal astragal should be provided between the top and bottom door leaves.

HARDWARE

Single-swing doors bearing the 3 h, 1-1/2 h, 1 h, 3/4 h or 20 min Classification Mark should be provided with Listed single-point locks or latches with a min 18.7 mm (1/2 in.) throw (except as indicated in the individual manufacturer's Classification Mark) to provide the protection indicated. Listed mortise- or rim-type fire-exit hardware devices may also be used.

Doors swinging in pairs (same direction) bearing the 3 h, 1-1/2 h, 1 h, 3/4 h or 20 min Classification Mark should be provided with Listed single-point locks or latches with a min 19 mm (3/4 in.) throw (except as indicated in the individual manufacturer's Classification Mark) and Listed top and bottom flush bolts or surface bolts to provide the protection indicated. Listed fire-exit hardware devices may also be used.

Double-egress doors (doors swinging in pairs – opposite direction) bearing the 3 h, 1-1/2 h, 1 h, 3/4 h or 20 min Classification Mark should be provided with the Listed vertical-rod fire-exit hardware devices to provide the protection indicated.

HINGES

Doors should be provided with hinges, pivots or olive knuckles in accordance with the specifications in ANSI/NFPA 80.

DOOR FRAMES

Doors should be installed in Listed door frames to provide the protection indicated. See Fire Door and Window Frames Certified for Canada (GVTV7).

DOOR CLOSERS

Doors should be provided with door closers in accordance with the instructions in ANSI/NFPA 80.

For Listings of closing devices, refer to the following categories:

- Combination Fire Door Closers and Holders Certified for Canada (GTIS7)
- Fire Door Operators Certified for Canada (GUCZ7)
- Fire Door Operators with Automatic Closers Certified for Canada (GUJY7)
- Swinging Fire Door Closers Certified for Canada (GVEV7)

DOOR TYPES AND SIZES

The following tabulation of doors is provided as a reference guide and includes the maximum sizes currently Classified. The maximum door sizes will vary for each individual Classification.

Composite Type

Swinging-type Fire Doors Certified for Canada (GSYX7)−*Continued*

Composite doors include steel-covered fire doors. They consist of a manufactured core material with steel edges, and face sheets of steel. Steel-covered composite doors are rated up to 3 h.

Sizes:

Type of Door	Maximum Size of Opening	
	Width	Height
Swinging, single (steel-covered)	1219 mm (4 ft, 0 in.)	3048 mm (10 ft, 0 in.)
Swinging in pairs (steel-covered)	2438 mm (8 ft, 0 in.)	3048 mm (10 ft, 0 in.)

Hollow-metal Type

Hollow-metal doors consist of formed steel of the flush and paneled designs. Hollow-metal doors are rated up to 3 h.

Sizes:

Type of Door	Maximum Size of Opening	
	Width	Height
Swinging, single	1219 mm (4 ft, 0 in.)	3048 mm (10 ft, 0 in.)
Swinging in pairs	2438 mm (8 ft, 0 in.)	3048 mm (10 ft, 0 in.)

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104-1980, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SWINGING TYPE FIRE DOOR NO. ____
MINIMUM LATCH THROW: + IN.
RATING: ++ TEMP RISE: +++
No.

\+ **1/2**, **5/8** or **3/4**

++ **3 HR**, **1-1/2 HR**, **1 HR**, **3/4 HR** or **20 MIN**

+++ **30 MIN – 250 C (450 F) MAX**, **60 MIN – 250 C (450 F) MAX**, or no reference to temperature rise when the temperature rise exceeds 250°C at 30 min.

In addition, some manufacturers can furnish doors bearing the notation ''FIRE DOOR TO BE EQUIPPED WITH FIRE EXIT HARDWARE'' in lieu of the notation ''MINIMUM LATCH THROW: + IN.,'' as indicated in the individual Classifications.

The Classification Mark is applied on the hinge edge of the door or on the head (top edge) of the door when the door is intended for use with a continuous hinge.

****

Finishers of Fire Doors Certified for Canada (GSZC7)

GENERAL

This category covers finishers of fire doors. Finishers are identified as distributors in the steel door industry and machiners in the wood door industry.

Finishers receive fire doors from the primary manufacturer. These fire doors have a unique marking signifying the door was manufactured in compliance with UL's Follow-Up Service requirements. The finisher may modify the fire door to satisfy site-specific requirements for items such as vision panels and hardware.

RELATED PRODUCTS

See Swinging-type Fire Doors Certified for Canada (GSYX7) for Listings of primary manufacturers.

ADDITIONAL INFORMATION

For additional information, see Swinging-type Fire Doors Certified for Canada (GSYX7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification

Finishers of Fire Doors Certified for Canada (GSZC7)−*Continued*

and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SWINGING TYPE FIRE DOOR
CAN/ULC-S104
MINIMUM LATCH THROW: + IN.
RATING: ++
TEMP RISE: +++

\+ 1/2 in., 5/8 in. or 3/4 in.

++ 4 h, 3 h, 1-1/2 h, 1 h, 3/4 h, 30 min or 20 min

+++ 30 min – 250°F max, 30 min – 450°F max, 30 min – 650°F max, or 30 min > 650°F

In addition, some manufacturers can furnish doors bearing the notation ''FIRE DOOR TO BE EQUIPPED WITH FIRE EXIT HARDWARE'' in lieu of the notation ''MINIMUM LATCH THROW: + IN.,'' as indicated in the individual Classifications.

FIRE DOOR CLOSERS, HOLDERS AND OPERATORS CERTIFIED FOR CANADA (GTBT7)

USE

This category covers fire door closers, holders and operators intended for installation in accordance with ANSI/NFPA 80, ''Fire Doors and Other Opening Protectives.''

Fire doors must be in the fully closed position to perform their intended function. The protection of an opening depends not only upon the use of a labeled door of the proper type, but also upon the use of a labeled frame, Listed hardware, Listed door closer, and coordinators, if required, as well as the correct installation of such equipment.

Authorities Having Jurisdiction should be consulted as to which type of mounting and Listed holding and closing mechanisms are acceptable for any given location.

RELATED PRODUCTS

See Swinging Fire Door Closers Certified for Canada (GVEV7).

****

Combination Fire Door Closers and Holders Certified for Canada (GTIS7)

USE AND INSTALLATION

This category covers combination fire door closers and holders intended for use with swinging fire doors. They are designed to hold the door in the open position under normal usage and release and automatically close the door under fire conditions. They incorporate an integral electromagnetic holder mechanism designed for use with certified automatic fire detectors, provided with normally closed switching contacts.

Combination fire door closers and holders with integral latches are suitable for use with single-swinging fire doors having a 20 min fire rating. Doors incorporating such devices are not required to have any other means of latching.

These devices have been investigated from an electrical as well as fire protection standpoint.

Authorities Having Jurisdiction should be consulted to ensure that the door, combination closer and holder, and automatic fire detector or other combination of system units are acceptable for any given location.

ADDITIONAL INFORMATION

For additional information, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN4-S104 (1980), ''Standard Method for Fire Tests of Door Assemblies,'' CAN/ULC-S133 (1990), ''Door Closers Intended for Use with Swinging Doors,'' and, where applicable for releasing-service detectors, CAN/ULC-S529 (2002), ''Smoke Detectors for Fire Alarm Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product

Combination Fire Door Closers and Holders Certified for Canada (GTIS7)−*Continued*

name "Combination Door Closer and Holder" or "Combination Door Closer and Holder with Integral Latch for Use with Doors of 20 Min Fire Rating."

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Fire Door Holders Certified for Canada (GTPR7)

GENERAL

This category covers door holders intended for use with swinging, sliding, or rolling fire doors. They are designed to hold doors in the open position under normal usage and release the doors under fire conditions. They are intended for use with a suitable door closer and automatic operating devices or systems.

The door holders intended for use with automatic operating devices or system units have been investigated from an electrical as well as fire protection standpoint.

Authorities Having Jurisdiction should be consulted that the door, door holders, door closer, and automatic operating device or other combination of system units are acceptable for any given location.

RELATED PRODUCTS

Automatic operating devices or systems consist of releasing devices, thermostats for releasing-device service, or smoke-automatic fire detectors, for use with releasing-device equipment.

For information on door closers, see Fire Door Accessories Certified for Canada (GVUW7) and Fire Door Closers, Holders and Operators Certified for Canada (GTBT7).

ADDITIONAL INFORMATION

For additional information, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C228 (1994), "Door Closers and Holders."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Door Holder."

* *

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Fire Door Operators Certified for Canada (GUCZ7)

USE AND INSTALLATION

This category covers fire door operators investigated for fire and electrical protection.

Fire door operators are intended for single-slide and center parting level and inclined track fire doors. These devices consist of an electric-powered operator that opens and closes the door during normal usage, and a mechanical release which, under fire conditions, disconnects the door from the powered operator and permits it to close by either a certified sliding-door closer or a system of suspended weights, as described in ANSI/NFPA 80, "Fire Doors and Other Opening Protectives."

Fire door operators are intended for installation in accordance with the instructions provided with the product.

ADDITIONAL INFORMATION

For additional information, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN4-S104, "Standard Method for Fire Tests of Door Assemblies," and CAN/CSA-C22.2 No. 247 (1992), "Operators and Systems of Doors, Gates, Draperies and Louvres."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Fire Door Operators Certified for Canada (GUCZ7)−*Continued*

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door Operator."

* *

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Fire Door Operators with Automatic Closers Certified for Canada (GUJY7)

USE AND INSTALLATION

This category covers fire door operators with automatic closers investigated for fire and electrical protection.

Sliding fire door operators with automatic closers are intended for single-slide and center parting level track hollow-metal and steel-covered composite type doors. These devices consist of a pneumatic, hydraulic or electric-powered operator that opens and closes the door during normal usage, and a heat-actuated releasing device which, under fire conditions, releases the pneumatic power and permits the suspended weights on level arms to close the door.

Swinging fire door operators are intended for use on a pair of certified hollow-metal fire doors swinging in the same or opposite (double egress) direction. The doors incorporate certified fire exit hardware consisting of a concealed vertical rod device. These devices consist of a pneumatic-powered operator that opens and closes the doors during normal operation, electric solenoids with actuators mounted in the head of the frame that allows the top and bottom bolts of the vertical rod device to engage the strikes and latch the doors in the event of a fire, and a certified heat or smoke detector which, under fire conditions, allows the integral closer to bring the doors to the closed position and the actuator to latch the top and bottom bolts.

Single-swing fire door operators are intended for use on single-swing hollow-metal fire doors. The door incorporates a certified single-point latch. These devices consist of a powered operator that opens and closes the doors during normal operation, a certified electric strike in the jamb that engages the single-point latch in the event of a fire, and a certified heat or smoke detector which, under fire conditions, allows the integral closer to bring the door to the closed position and the electric strike to engage the latch.

Fire door operators with automatic closers are intended for installation in accordance with the instructions provided with the product.

ADDITIONAL INFORMATION

For additional information, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN4-S104, "Standard Method for Fire Tests of Door Assemblies," and CAN/CSA-C22.2 No. 247 (1992), "Operators and Systems of Doors, Gates, Draperies and Louvres."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door Operator with Automatic Closer."

* *

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Retrofit Rolling Steel Fire Door Operators Certified for Canada (GUNL7)

USE

This category covers retrofit rolling steel fire door operators intended to replace door operator and governor systems used on exiting certified rolling steel fire doors as identified in the individual certifications. Retrofit door operators/governors have been investigated to determine that when installed in accordance with the manufacturer's installation instructions, the door operators/governors do not adversely affect the operation or fire resistance of certified rolling steel fire doors.

ADDITIONAL INFORMATION

Retrofit Rolling Steel Fire Door Operators Certified for Canada (GUNL7)−*Continued*

For additional information, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN4-S104, ''Standard Method for Fire Tests of Door Assemblies,'' and CAN/CSA-C22.2 No. 247 (1992), ''Operators and Systems of Doors, Gates, Draperies and Louvres.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RETROFIT ROLLING STEEL DOOR OPERATOR FOR INSTALLATION ON FACE-MOUNTED ROLLING STEEL TYPE FIRE DOORS

Control No.

****

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Sliding Fire Door Closers Certified for Canada (GUQX7)

USE AND INSTALLATION

This category covers door closers for single-slide and center-parting level and inclined track fire doors. These devices consist either of a fixed weight suspended from an operating mechanism or a spring-operated pusher assembly.

Upon manual release or automatic release performed by an integral system within the device or by a separate releasing device, the door is pulled or pushed to a closed position.

The sliding door closer is intended to be installed in accordance with the directions furnished with the device.

ADDITIONAL INFORMATION

For additional information, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN4-S104, ''Standard Method for Fire Tests of Door Assemblies,'' and ULC/ORD-C228, ''Door Closers and Holders.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Sliding Door Closer.''

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Swinging Fire Door Closers Certified for Canada (GVEV7)

USE AND INSTALLATION

This category covers door-closing mechanisms of the self-closing and automatic types for swinging doors.

Self-closing door closers of either the surface mounted, floor mounted, concealed, semi-concealed, or spring-hinge type return the door to the closed position when opened.

Automatic door closers of either the surface mounted, concealed, or semi-concealed type employ a hold-open arm with a fusible link, which permits the door to close when a fire occurs. Fusible links on door closers are somewhat slower in action than links located at the top of the opening and at the ceiling.

The swinging-door closer is intended to be installed in accordance with the installation instructions packaged with the device. The use of sex bolts or through bolts to mount the closer to the door is required for wood or

Swinging Fire Door Closers Certified for Canada (GVEV7)−*Continued*

plastic-faced composite-type fire doors unless an alternate method is identified in the individual door manufacturer's certifications (and installation instructions). The use of sex bolts to mount the closers to the door is required for steel-covered composite type, sheet-metal type or hollow-metal-type fire doors provided without closer reinforcements. The use of steel machine screws to mount the closer to the door is required for steel-covered composite type, sheet-metal type or hollow-metal-type fire doors incorporating steel closer reinforcements. The use of wood screws, sheet-metal screws, sex bolts or through bolts to mount the closer to the door are required for metal-clad (Kalamein) type or wood-core-type fire doors. Some special closers are intended for use only in doors or door frames other than fire doors or fire door frames. The manufacturer of the product should be consulted to determine suitability of mounting the closer in the fire door or fire door frame.

ADDITIONAL INFORMATION

For additional information, see Fire Door Closers, Holders and Operators Certified for Canada (GTBT7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S133, ''Door Closers Intended for Use with Swinging Doors.'' Door closers of the spring-hinge type are investigated using the endurance test in CAN/ULC-S133.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Door Closer Body,'' ''Door Closer Arm,'' ''Door Closer Hold-Open Arm'' or ''Door Closer Body Accessory – For Use With Model XXX Door Closer Body.''

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FIRE DOOR AND WINDOW FRAMES CERTIFIED FOR CANADA (GVTV7)

USE AND INSTALLATION

This category covers fire door and window frames intended for the protection of openings in walls when installed in accordance with ANSI/NFPA 80, ''Standard for Fire Doors and Other Opening Protectives,'' and as specified in the installation instructions provided with the fire door or window frame.

Glazing Materials

Glazing materials referenced in this category are Classified as to fire-protection rating only. The glazing materials are intended to be installed in the fire doors in accordance with ANSI/NFPA 80 and the installation instructions provided by the manufacturer of the door, glass light frame or glazing material. See Fire-protection-rated Glazing Materials Certified for Canada (KCMZ7).

DOOR FRAMES

Door frames bearing a UL Mark are intended (when provided with the required wall anchors) for installation in designated fire-rated walls.

Elevator door frames, frames of the slip-on type and other special-use frames as identified in the individual Listings are intended for installation only in the walls of the types shown in the installation instructions accompanying the door frame.

Door frames bearing a UL Mark with a specific rating that are used with labeled fire doors or hardware having a lesser or greater rating will provide the degree of fire protection afforded by the lesser rating of either frame, door or hardware.

Standard door frames are of the single-unit or two-section type and consist essentially of steel head and jamb members, including hardware reinforcements, wall anchors, door stops, and provisions for anchoring to the floor.

Door frames may be provided with mullions, transom panels, or transom lights. In addition to the steel head and jamb members, these frames are equipped with a steel mullion, transom bar, steel-covered composite transom panel, and glazing beads. Most transom panel frames are for use with doors rated up to and including 1-1/2 h. Transom light frames glazed with labeled glazing material are intended for use with doors rated a maximum of 3/4 h.

Some manufacturers can provide labeled transom panel frames for use with doors rated up to and including 3 h as indicated in the individual Listings. Some manufacturers can provide labeled transom frames with

Fire Door and Window Frames Certified for Canada (GVTV7)−*Continued*

hollow-metal transom panels with or without a transom bar. Transoms of solid construction are for use with doors rated up to and including 1-1/2 h, (unless otherwise noted for 3 h in the individual Listings). Some manufacturers can provide labeled door frames with side panels or sidelights. Frames with side panels are for use with doors rated up to and including 1-1/2 h. Frames with sidelights glazed with labeled glazing material are intended for use with doors rated a maximum of 3/4 h.

Special frames are constructed of materials other than steel and are intended for use with doors rated less than 3 h. The hourly ratings for special frames are shown in the individual Listings.

Some special frames are intended for use with Classified fire doors and Listed transom panels of a specific design. These frames and the labeled components are identified in the individual Listings.

Double-egress frames are intended for use with double-egress door designs as identified in the individual Listings.

Elevator door frames are intended for use with sliding freight or passenger elevator fire door designs for use in drywall or masonry shaft construction, as identified in the individual Listings for door frames.

WINDOW FRAMES

Fire window frames consist of sash and mullions of various designs. Fire window frames are Listed for a 3/4 h or a 20-minute fire rating except as noted in the individual Listings and on the Listing Marks (labels). The exposed area of individual glazing lights is limited to 0.84 sq m (1296 sq in.) with no dimension to exceed 1374 mm (54 in.) unless otherwise stated in individual Listings.

Fire window frames are intended to be installed in masonry-type walls unless otherwise identified in the individual Listings.

Fire window frames intended to be installed in drywall construction and supported directly by a noncombustible floor bear the supplemental marking "Fire Window Frame for Installation on Noncombustible Floor with Base Anchor Provided on Frame."

Fire window frames intended to be installed above the floor in drywall construction should be installed as specified by the installation instructions provided with the window frame.

The window frame prepared at the factory for the glazing material does not normally include the glazing material. Classified glazing material is usually provided by other than the window frame manufacturer and installed after installation of the window frame in the building.

The protection of an opening depends not only upon the use of doors or glazing of the proper type, but also upon the use of Listed door or window frames, Listed hardware, and other Classified or Listed accessories, as needed. Authorities Having Jurisdiction should be consulted as to which door type, door frame, window frame, glazing, hardware and other Classified or Listed accessories are acceptable for any given location.

CERTIFICATES

Freight elevator, passenger elevator and swing-type fire door frames incorporating transom panels exceeding the heights eligible for Listing and which have not been subjected to Standard fire tests can be provided with a Certificate for Oversized Frame Assemblies that are otherwise found to be in compliance (except for size) with all requirements for design, materials and construction. These oversized frame assemblies are intended for use with specific Classified freight elevator fire doors, passenger elevator fire doors, or swing fire doors. Authorities Having Jurisdiction should be consulted as to whether the assembly is acceptable for a specific location. The Oversize Certificate is a label certificate affixed to the assembly.

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate door frames in this category is CAN4-S104-1980, "Standard Method for Fire Tests of Door Assemblies."

The basic standard used to investigate window frames in this category is CAN4-S106-1980, "Standard Method for Fire Tests of Window and Glass Block Assemblies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the rating, and one of the following product names: "Fire Door Frame," "Fire Door Frame for Lights," "Fire Door Frame with Panels," "Transom Panel" or "Fire Window Frame."

When the Listing Mark of UL is stamped into the frame, one of the following abbreviated product identities may be used:

- "FDF" and the rating in lieu of "Fire Door Frame"
- "FDF-L" in lieu of "Fire Door Frame for Lights Rated 3/4 H"
- "FDF-P" in lieu of "Fire Door Frame with Panels Rated 1-1/2 H"

Fire Door and Window Frames Certified for Canada (GVTV7)−*Continued*

- "FDF-20" in lieu of "Fire Door Frame Fire Rating 20 Minutes"

All knocked-down fire door frame parts bear the supplementary statement "Knocked-Down Frame Part for Listed Fire Door Frame." Also, the jamb bears the supplementary statement "Listed Fire Door Frame." The supplementary statement on each part identifies the Listed frame parts.

* *

Finishers of Fire Door Frames and Fire Window Frames Certified for Canada (GVUP7)

GENERAL

This category covers finishers of fire door frames and fire window frames.

Finishers receive frame parts from the primary manufacturer. These frame parts have a unique marking signifying they were manufactured in compliance with UL's Follow-Up Service requirements. The finisher assembles the parts to satisfy site-specific requirements, such as size and location of vision panels.

Finishers are identified as distributors in the steel door industry and machiners in the wood door industry.

RELATED PRODUCTS

See Fire Door and Window Frames Certified for Canada (GVTV7) for Listings of primary manufacturers.

ADDITIONAL INFORMATION

For additional information, see Fire Door and Window Frames Certified for Canada (GVTV7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate door frames in this category is CAN4-S104-1980, "Standard Method for Fire Tests of Door Assemblies."

The basic standard used to investigate window frames in this category is CAN4-S106-1980, "Standard Method for Fire Tests of Window and Glass Block Assemblies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate:

- "Fire Door Frame"
- "Fire Door Frame for Lights"
- "Fire Door Frame for Transom Light"
- "Fire Door Frame with Panels"
- "Fire Door Frame with Transom Panel"
- "Fire Door Frame for Sidelight"
- "Fire Door Frame with Side Panel"
- "Fire Door Frame for Side and Transom Lights"
- "Fire Door Frame with Side and Transom Panels"
- "Transom Panel"
- "Fire Door Frame, Fire Rating: 20 Minutes"
- "Fire Door Frame, Wood Type Fire Rating: 20 Minutes, for Use with UL Classified Wood or Plastic Covered Composite or Wood Core Doors"
- "Fire Door Frame, Wood Type, Fire Rating: 20 Minutes, for Use with UL Classified Fire Doors Marked Suitable for Use with UL Listed Wood Type Fire Door Frames"
- "Fire Window Frame (3/4 Hr or 1 Hr) Fire Rating"
- "Sheet-Metal Mullion for Nonbearing Fire Window Frames"

When the Listing Mark of UL is stamped into the frame, one of the following abbreviated product identities may be used:

- "FDF" in lieu of "Fire Door Frame"
- "FDF-L" in lieu of "Fire Door Frame for Lights"
- "FDF-P" in lieu of "Fire Door Frame with Panels"
- "FDF-20" in lieu of "Fire Door Frame Fire Rating 20 Minutes"

All knocked-down fire door frame parts bear the supplementary statement "Knocked-Down Frame Part for Listed Fire Door Frame." Also, the

Finishers of Fire Door Frames and Fire Window Frames Certified for Canada (GVUP7)−*Continued*

jamb bears the supplementary statement "Listed Fire Door Frame." The supplementary statement on each part identifies the Listed frame parts.

All knocked-down twenty minute type door or window frame parts bear the supplementary statement "Knocked-Down Frame Part for Listed Twenty Minute Door or Window Frame."

* *

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FIRE DOOR ACCESSORIES CERTIFIED FOR CANADA (GVUW7)

USE AND INSTALLATION

This category covers fire door accessories intended for installation with Classified fire doors and/or Listed fire door frames as identified in the individual Classifications. The accessories have been investigated to determine that when installed in accordance with the manufacturer's instructions, the accessories do not adversely affect the fire-resistance performance of the Classified fire door and/or Listed fire door frame.

Miscellaneous Fire Door Accessories Certified for Canada (GVUX7)

USE AND INSTALLATION

This category covers miscellaneous fire door accessories intended for installation with certified fire doors and/or certified fire door frames as identified in the individual certifications. The accessories have been investigated to determine that when installed in accordance with the manufacturer's instructions, the accessories do not adversely affect the fire rating of the fire door and/or fire door frame.

ADDITIONAL INFORMATION

For additional information, see Fire Door Accessories Certified for Canada (GVUW7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MISCELLANEOUS FIRE DOOR ACCESSORY
Control No.

* *

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Cladding Materials for Fire Doors and Frames Certified for Canada (GVUZ7)

GENERAL

This category covers cladding materials intended for installation on certified fire doors and fire door frames as specified in the individual certifications. The cladding material is intended to be installed in accordance with the installation instructions packaged with the material.

The cladding material may be installed at the fire door or frame manufacturer's plant or in the field. The cladding material is applied in such a manner that the Certification Mark on the door or on the frame is visible after the material is installed.

Cladding materials have been investigated only with respect to the determination that the materials do not adversely affect the fire rating of the fire doors and door frames when installed.

RELATED PRODUCTS

See Miscellaneous Fire Door Accessories Certified for Canada (GVUX7).

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

Cladding Materials for Fire Doors and Frames Certified for Canada (GVUZ7)−*Continued*

The basic standard used to investigate products in this category is CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Classification Mark of UL on the carton or package is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, and the following additional information:

CLADDING MATERIALS FOR DOORS AND FRAMES INTENDED FOR APPLICATION ON LISTED FIRE DOOR FRAMES USED WITH ____ TYPE FIRE DOORS
RATED UP TO ____ HRS
Control No.

or

CLADDING MATERIALS FOR DOORS AND FRAMES INTENDED FOR APPLICATION ON CLASSIFIED ____ TYPE FIRE DOORS
RATED UP TO ____ HRS
Control No.

* *

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Fire Door Coordinators Certified for Canada (GVVR7)

USE AND INSTALLATION

This category covers coordinators used to control the sequence of closing and latching of pairs of fire doors. These coordinators are intended for installation on certified fire door frames in accordance with the installation instructions packaged with the device. The coordinator is used with a pair of swinging fire doors with an astragal to allow the inactive door to close and latch before the active door closes and latches.

The installation of fire door coordinators does not require a modification of the fire door frames, since they are designed as a bolt-on-type attachment.

ADDITIONAL INFORMATION

For additional information, see Fire Door Accessories Certified for Canada (GVUW7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Fire Door Coordinator."

* *

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Fire Door Glass Light Frames Certified for Canada (GVVX7)

USE AND INSTALLATION

This category covers glass light frames intended for installation in certified swinging fire doors rated up to and including 1-1/2 hrs as provided by door manufacturers indicated in the individual certifications.

Glass light frames consist essentially of steel or wood framing members and their mounting fasteners. The maximum size of the glass light frames should not exceed:

Framing Member Material	Max Width mm (in.)	Max Height mm (in.)	Max Area m^2 ($in.^2$)	Max Door Rating
Wood+	762 (30)	1016 (40)	0.78 (1200)	20 min
Steel	1372 (54)	1372 (54)	0.84 (1296)	3/4 hr
Steel	254 (10)	838 (33)	0.065 (100)	1-1/2 hr

Values in parentheses are explanatory or approximate information.

Fire Door Glass Light Frames Certified for Canada (GVVX7)−*Continued*

Framing Member Material	Max Width mm (in.)	Max Height mm (in.)	Max Area m^2 ($in.^2$)	Max Door Rating

+ Glass light frames consisting of wood framing members and their mounting fasteners are only intended for use in 20 min. wood-core doors.

The glass light frames are intended to be installed in accordance with the installation instructions packaged with the device. The use of steel sex-bolts or steel sheet-metal screws to install the glass light frame in the door is required, depending on the type of door and the design of light frame. The fasteners are furnished as part of the light frame.

The glass light frames may be installed in certified swinging fire doors by some manufacturers at the door manufacturer's plant or in the field. When the light frame is intended to be installed in the field, the cutout in the door is made at the door manufacturer's plant and the door bears a marking indicating the manufacturer and model designation of the certified glass light frame to be installed in the door.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Door Accessories Certified for Canada (GVUW7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door Glass Light Frame" or "Fire Door Glass Light Frame for Use Only on 20 Min Wood Core Doors."

Gasketing Materials for Fire Doors Certified for Canada (GVWZ7)

GENERAL

This category covers gasketing materials intended for installation on certified fire doors and/or certified fire door frames or in their thresholds, as specified in the individual certifications. The gasketing material is intended to be installed in accordance with the installation instructions packaged with the material.

Gasketing materials consist of a metal frame or a flexible material, either mechanically secured within a metal frame or housing or applied by means of a pressure-sensitive adhesive to the perimeter of the certified fire door and/or certified fire door frame or installed within their thresholds, as specified in the individual certifications.

The gasketing material may be installed on the certified fire doors at the fire door and/or frame manufacturer's plant or at the job site.

Gasketing materials for fire doors have been investigated only with respect to determination that the materials do not adversely affect the fire rating of fire doors in which they are installed.

ADDITIONAL INFORMATON

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXUV7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CLASSIFIED GASKETING MATERIALS FOR FIRE DOORS INTENDED FOR APPLICATION TO ___ TYPE FIRE DOORS RATED UP TO ___ HRS
Control No.
*** ***

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FIRE DOOR LOUVERS CERTIFIED FOR CANADA (GVZS7)

USE AND INSTALLATION

This category covers fire door louvers intended for installation in certified swinging fire doors rated up to and including 1-1/2 h as provided by door manufacturers indicated by the individual certifications in the Fire Door categories.

Fire door louvers consist essentially of steel framing members, adjustable steel blades, operating lever, a fusible link and a system for automatically closing the blades when the link is activated. The maximum size of the automatic closing louver assembly should not exceed 0.3759 m (576 sq in.) with no dimension exceeding 610 mm (24 in.).

The fire door louver is intended to be installed in accordance with the installation instructions packaged with the device. The use of steel sex-bolts or steel sheet metal screws to install the louver in the door is required, dependent upon the type of door and design of the louver. The fasteners are furnished as part of the louver.

The fire door louver may be installed in the certified swinging fire doors by some manufacturers at the door manufacturer's plant or in the field. When the louver is intended to be installed in the field, the cutout in the door shall be made at the door manufacturer's plant and the door will bear a marking indicating the manufacturer and model designation of certified fire door louver to be installed in the door.

Authorities Having Jurisdiction should be consulted before installation of louvers in fire doors.

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Door Louver."

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HARDWARE CERTIFIED FOR CANADA (GWGR7)

Builders hardware, fire door hardware and elevator door hardware for different types of fire doors is intended to be installed in accordance with the Standard of the National Fire Protection Association for Fire Doors and Windows, NFPA 80. The protection of an opening depends not only upon the use of a labeled door of the proper type but also upon the use of labeled frames, listed hardware, and the installation. Prospective users should first ascertain from authorities having jurisdiction which type, mounting, and listed closing mechanisms are acceptable for any given location.

*** ***

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Builders' Hardware Certified for Canada (GWTZ7)

Builders hardware for swinging fire doors of the composite, hollow-metal, metal clad, sheet metal and wood-core types are listed in the following categories: Auxiliary locks, Electric strikes, Fire Exit Hardware, Automatic type flush or surface bolts, Manual type flush or surface bolts, Self-Latching type flush or surface bolts, Single-Point locks or latches, Electrically controlled single point locks or latches and Two or Three-Point locks or latches.

Accessories for Single-point Locks and Latches and Fire-exit Hardware Certified for Canada (GWVW7)

USE AND INSTALLATION

This category covers accessories for use with single-point locks and latches and fire-exit hardware consisting of trim parts and rated locks or latches, as identified in the individual Classifications, intended for field retrofitting.

These products may also be provided with the Listing Mark for Fire-exit Hardware Certified for Canada (GXHX7) or Single-point Locks and Latches Certified for Canada (GYJT7). Trim parts and rated locks and latches are intended for installation on fire-exit hardware or single-point locks and latches having a rating up to and including 3 h, as indicated in the individual Listings and Classifications.

Trim parts and rated locks and latches are intended to be installed only as shown in the installation instructions.

The installation of the trim parts does not require a modification of the hardware, since they are designed as a bolt-on-type attachment. The installation of the rated lock or latch does not require a modification to the lock assembly since it is designed to be retrofitted to the specific lock assembly model referenced in the individual Listings or installation instructions.

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY+]
FOR INSTALLATION ON
[TYPE OF RETROFITTED HARDWARE+]
Control No.

+ as noted in the individual Classifications

For those products which are also Listed, the marking includes the Listing Mark in addition to the Classification Mark when the product is intended for use in retrofit applications.

In addition, the UL symbol, the letter ''F'' and any qualifications as to the part's hourly rating are cast or stamped on the exposed surface of each trim part and/or rated lock or latch assembly if the entire Classification Mark is not visible after installation of the product.

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Auxiliary Locks Certified for Canada (GWXT7)

USE AND INSTALLATION

This category covers auxiliary locks intended for use on swinging fire doors having a rating up to and including 3 h, unless a reduced rating is otherwise indicated in the individual Listings.

Auxiliary locks are intended for installation on Listed fire door frames and/or Classified swinging fire doors in accordance with the installation instructions packaged with the device. These locks are intended to be used on fire doors and/or frames in addition to the primary latching device required for use on fire doors and/or frames.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104-1980, ''Standard Method for Fire Tests of Door Assemblies.''

Where applicable, products may additionally be investigated to CAN/ULC-S533-2002, ''Egress Door Securing and Releasing Devices.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name

Auxiliary Locks Certified for Canada (GWXT7)−*Continued*

''Auxiliary Lock'' or ''Auxiliary Lock Subassembly,'' and any qualifications to the product hourly rating. In addition, the UL Mark for Canada symbol, the letter ''F,'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

Door Hinges Certified for Canada (GWZQ7)

USE

This category covers door hinges intended for use on swinging-type fire doors of the type specified in the individual Listings.

These hinge designs have been investigated with respect to their fire protection and cycling characteristics. They have been investigated for use on fire doors installed in accordance with ANSI/NFPA 80, ''Fire Doors and Windows,'' and the manufacturer's installation instructions.

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104-1980, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Door Hinge'' or ''Door Pivot,'' and any qualifications to the product hourly rating. In addition, the UL Mark for Canada symbol, the letter ''F'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

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Electric Strikes Certified for Canada (GXAY7)

USE

This category covers electric strikes intended to replace the strike plate used in fire door frames of the single section or two section type.

Electric strikes have been investigated under fire exposure for use with fire door frames and fire doors having a rating up to and including 3 h. Electric strikes have also been investigated for electric features for devices to be used in Class 1 or Class 2 CEC circuits. Only momentary contact switching (energized only when push button is held depressed) should be used with electric strikes for use with fire door frames and fire doors.

Electric strikes are for use with cylindrical or mortise type latches when such latches are mounted in single swing doors.

ADDITIONAL INFORMATION

For additional information, see Builders Hardware Certified for Canada (GWTZ7), Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104-80M, ''Standard Method for Fire Tests of Door Assemblies''.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Electric Strike for Fire Door,'' and any qualifications to the product hourly rating. In addition, the UL symbol and the letter ''F'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

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Fire-exit Hardware Certified for Canada (GXHX7)

GENERAL

This category covers exit hardware devices for swinging fire doors, which are intended to facilitate the safe egress of persons in the case of emergency, as well as provide fire protection for door assemblies. They have been investigated from the standpoint of fire and panic protection.

Fire-exit hardware of the single-point-latch type (mortise or rim devices) with 19 mm (3/4 in.) latch bolts and the vertical rod type (surface mounted or concealed devices) and mullion assemblies are for use on fire doors having a rating up to and including 3 hrs (unless otherwise noted in the individual certifications). In general, fire-exit hardware devices are for use on hollow-metal, composite (steel, wood, or plastic-covered), sheet-metal, wood core and metal-clad (Kalamein), type fire doors. Fire-exit hardware of the single-point-latch type (mortise or rim devices) are intended for use on swinging doors not exceeding 1220 mm (4 ft) in width and 2440 mm (8 ft) in height. Mortise-type fire-exit hardware devices can be used on the active door of doors swinging in pairs in openings not exceeding 2440 (8 ft) in width and 2440 (8 ft) in height (unless otherwise noted in the individual certifications).

Vertical-rod-type exit devices are intended for use on swinging fire doors mounted in pairs, wherein one door of the pair is equipped with a mortise-latch-type exit device. Both doors of a pair may incorporate vertical rod devices as indicated in the individual fire door certifications. See the individual fire door certifications for manufacturers eligible to provide doors swinging in pairs (same direction) equipped with vertical rod devices and without an astragal and double egress doors.

Fire-exit hardware devices are intended to be installed in accordance with the installation instructions packaged with the device. The use of sex bolts or through bolts to mount the devices to the door is required for composite (wood or plastic-covered) and wood-core-type fire doors unless an alternate mounting method is identified in the individual door manufacturer's certifications (and installation instructions). The use of sex bolts to mount the devices to the door is required for steel-covered composite type, sheet-metal type or hollow-metal-type fire doors provided without reinforcements. The use of steel machine screws to mount the devices to the door is required for steel-covered composite type, sheet-metal type or hollow-metal-type fire doors incorporating steel reinforcements.

Doors prepared at the factory for this hardware bear the marking, ''Fire Door to be Equipped with Fire Exit Hardware.''

RELATED PRODUCTS

Certifications for panic hardware applications only are covered under Panic Hardware Certified for Canada (FVSR7).

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/ULC-S132 (2007), ''Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware,'' and CAN/ULC-S104, ''Standard Method for Fire Tests of Door Assemblies.''

Where indicated in the individual certifications, products have additionally been investigated to ANSI/BHMA A156.3, ''Exit Devices.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fire Exit Hardware.''

* *

Flush and Surface Bolts, Automatic Certified for Canada (GXOW7)

GENERAL

This category covers automatic flush and surface bolt assemblies intended to secure the inactive door of swinging fire doors mounted in pairs, with the active door provided with a certified single-point latch.

The bolt assemblies have been investigated for fire protection for a period of 3 h on doors mounted in pairs not exceeding 2438 mm (8 ft) in either dimension, unless identified in the individual manufacturer's certification. For certifications of self-latching flush and surface bolts, see Flush and Surface Bolts Self-Latching Type Certified for Canada (GXVV7) and for certifications of manual flush and surface bolts, see Flush and Surface Bolts, Manual Type Certified for Canada (GXSR7).

These assemblies consist of individual self-latching top and bottom flush bolt units actuated by a trigger mechanism. In addition to the self-latching feature, these bolts also incorporate an auxiliary automatic unlatching feature whereby when the active door is opened, the inactive door opens by pushing on that door. The assemblies also include the necessary strikes, mounting screws, and installation instructions. A coordinator may be provided.

Authorities Having Jurisdiction should be consulted before installation.

Flush and Surface Bolts, Automatic Certified for Canada (GXOW7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104 (1980), ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Hardware — Automatic Flush or Surface Bolt,'' and any qualifications to the product hourly rating. In addition, the UL Mark for Canada symbol, the letter ''F,'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

* *

Flush and Surface Bolts, Manual Type Certified for Canada (GXSR7)

GENERAL

This category covers manual flush and surface bolt assemblies with 3/4-in. minimum throw intended to secure the inactive door of swinging fire doors mounted in pairs, with the active door provided with a certified single-point latch.

These assemblies have been investigated only for fire protection for a period of 3 h on the inactive leaf of doors mounted in pairs not exceeding 2438 mm (8 ft) in width or 3048 mm (10 ft) in height (unless otherwise noted in the individual certifications).

These assemblies consist of individual top and bottom flush bolt or surface bolt units, manually actuated strikes, the necessary mounting screws and installation instructions.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Flush and surface bolt assemblies investigated for both fire protection and panic features are covered under Fire-exit Hardware Certified for Canada (GXHX7).

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104 (1980), ''Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Manual Flush Bolt'' or ''Manual Surface Bolt,'' and any qualifications to the product hourly rating. In addition, the UL Mark for Canada symbol, the letter ''F,'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

Flush and Surface Bolts, Self-latching Type Certified for Canada (GXVV7)

USE AND INSTALLATION

This category covers self-latching flush and surface bolt assemblies intended to secure the inactive door of swinging fire doors mounted in pairs with the active door provided with a certified single-point latch.

They have been investigated only for fire protection for a period of 3 h on doors mounted in pairs not exceeding 2438 mm (8 ft) in either dimension (unless otherwise noted in the individual certifications).

Flush and Surface Bolts, Self-latching Type Certified for Canada (GXVV7)−*Continued*

These assemblies consist of either individual self-latching top and bottom flush bolt units actuated by a trigger mechanism or concealed and surface-mounted vertical rod mechanisms with top and bottom bolts, a release lever, operating handle, or thumb turn, strikes, the necessary mounting screws, and installation instructions. A coordinator may also be provided.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

See Flush and Surface Bolts, Automatic Certified for Canada (GXOW7) and Flush and Surface Bolts, Manual Type Certified for Canada (GXSR7).

ADDITIONAL INFORMATION

For additional information, see Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104 (1980), ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Self-latching Flush or Surface Bolt.'' In addition, the UL Mark for Canada symbol, the letter ''F,'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

Single-point Locks and Latches Certified for Canada (GYJT7)

GENERAL

This category covers single-point locks and latches of either the bored (cylindrical and tubular) mortise or preassembled (unit and mono) type for use on swinging fire doors having a rating up to and including 3 h, unless otherwise noted in the individual certifications.

Locks and latches are intended to be provided as complete units including housing/bodies, latch bolts, strikes and trim.

They have been investigated with respect to their fire-protection characteristics only.

In general, single-point locks and latches of the bored (cylindrical and tubular), mortise, or preassembled (unit and mono) types are for use on hollow-metal or composite (steel) type swinging fire doors (unless otherwise noted in the individual certifications). They are installed in single-swing doors not exceeding 1219 mm (4 ft) in width and 2438 mm (8 ft) in height, and the active door of doors mounted in pairs not exceeding 2438 mm (8 ft) in either dimension (unless otherwise noted in the individual certifications).

In general, single-point locks and latches with 12.7 mm (1/2-in.) minimum latch throw are intended for single-swing doors, and latches with 19 mm (3/4-in.) minimum latch throw are intended for the active door of doors mounted in pairs with the inactive door provided with top and bottom flush or surface bolts of the manual, automatic, or self-latching type.

Single-point locks and latches should not be provided with lever handles or paddles (unless otherwise noted in the individual certifications).

Some manufacturers can provide fire doors mounted in pairs with a minimum latch throw of less than 19 mm (3/4 in.) The door Classification Mark specifies the minimum latch throw required for the individual door.

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104 (1980), ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Single Point Lock or Latch,'' and any qualifications to the product hourly rating. In addition, the UL Mark for Canada symbol, the letter ''F,'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

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Single-point Locks and Latches Certified for Canada (GYJT7)−*Continued*

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Electrically Controlled Single-point Locks and Latches Certified for Canada (GYQS7)

GENERAL

This category covers electrically controlled single-point locks and latches of either the cylindrical (bored), mortise unit (pre-assembled) or frame-jamb-mounted types. They have been investigated under fire exposure for use on fire doors having a fire rating up to and including 3 h.

The locks and latches are intended to be provided as complete units, including housings/bodies, latch bolts, strikes and trim.

The locks and latches have also been investigated for electrical features for devices to be used in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

For frame-jamb-mounted lock sets, only momentary contact switching (energized only when the push button is depressed) is intended to be used. The frame-jamb-mounted lock sets are provided with solenoids for remote unlocking of the latch.

Electrically controlled single-point locks and latches are provided with solenoids for remote locking or unlocking of the operating knob or handle on one side of the latch case.

In general, electrically controlled single-point locks and latches are intended for installation in swinging fire doors of the hollow metal, composite (steel, wood or plastic-covered), sheet-metal, and wood-core types (unless otherwise noted in the individual certifications), prepared at the factory for such installation of the lock and associated wiring.

The locks and latches are intended for use on single-swing doors up to and including 1219 mm (4 ft) in width and 2438 mm (8 ft) in height, and the active door of doors mounted in pairs not exceeding 2438 mm (8 ft) in either width or height (unless otherwise noted in the individual certifications).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104 (1980), ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Electrically Controlled Single-point Lock or Latch,'' and any qualifications to the product hourly rating. In addition, the UL symbol, the letter ''F,'' and any qualifications to the product hourly rating are cast or stamped on the exposed surface if the whole Listing Mark is not visible after installation of the product.

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Two- and Three-point Locks and Latches Certified for Canada (GYXR7)

GENERAL

This category covers two- and three-point locks and latches for hollow-metal doors of the mortise type consisting of operating, retaining, and releasing mechanisms mounted on a common bearing plate. They have been investigated only from a fire-protection viewpoint, not as panic hardware.

Three-point latches are designed for single-swing doors and the active door of doors swinging in pairs, and the two-point latches for the inactive door of doors swinging in pairs. A coordinator may be provided.

RELATED PRODUCTS

See Panic Hardware Certified for Canada (FVSR7).

Assemblies investigated for both fire and panic protection are covered under Fire-exit Hardware Certified for Canada (GXHX7).

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

Two- and Three-point Locks and Latches Certified for Canada (GYXR7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fire Door Hardware – Two- or Three-Point Lock or Latch.''

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Elevator Fire Door Hardware, Passenger Certified for Canada (GZKZ7)

GENERAL

This category covers passenger elevator door hardware designed for use with sliding passenger elevator fire doors of the single-, two-, and three-speed, and single- and two-speed center opening types. The hardware consists of a header, track, hangers, pendent bolts, aluminum sill, sill support plates, sill brackets, retaining angles, and closer assemblies.

Hanger assemblies may be provided in lieu of hanger components. They consist of a header, hangers, pendant bolts, track, and attachments mounted together so that the assembly may be handled as a complete unit.

Some passenger elevator doors may be provided with an integral hanger, in which case the hanger assembly consists of a header and track. For integral hangers, the doors Certification Mark covers the details of the hanger and attachments.

Closer assemblies are of the hand operated, overhead pneumatic, side arm pneumatic, and electric types. They consist of a closer for each door assembly, each comprising a cylinder, links, and attachments. The closer mechanism is operated manually by a handle, or by pneumatic or electric operators.

Certification Marks are applied to each header, track, hanger, aluminum sill, sill support plate, sill bracket, retaining angle, and closer assembly.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S104, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Passenger Elevator Door Hardware'' or ''Passenger Elevator Door Hardware Closer Assembly.''

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Fire Door Hardware Certified for Canada (GZYX7)

GENERAL

This category covers fire door hardware intended for use with composite (steel-covered only) hollow-metal, sheet-metal, and tin-clad fire doors. These doors are usually prepared for a specific set of hardware on the job site.

To provide the degree of fire protection to a wall opening as indicated by the fire door label, this hardware must be applied and the resulting door-hardware assembly installed in accordance with the recommendations contained in ANSI/NFPA 80, ''Fire Doors and Other Opening Protectives.''

This hardware is of two types: hardware intended for use with sliding doors, and hardware intended for use with swinging doors.

Fire Door Hardware Certified for Canada (GZYX7)−*Continued*

Sliding Type

Hardware for horizontally sliding composite (steel-covered) and hollow-metal doors, and horizontally and vertically sliding sheet-metal doors, is essentially the same as for tin-clad doors, with minor differences to conform to the constructions of various manufacturers.

Hardware for horizontally sliding tin-clad, sheet-metal, and hollow-metal doors, mounted singly or center parting, and single-sliding composite (steel-covered) doors is designed for openings not exceeding 11.1 sq mm (120 sq ft) with no dimension exceeding 3660 mm (12 ft).

Each complete set of certified hardware for horizontally single-slide tin-clad doors contains: (1) One track, length equal to twice the width of the opening plus 533 mm (21 in.), punched for wall bolts. (2) Two hangers for openings 1829 mm (6 ft) and less in width; three hangers for openings wider than 1829 mm (6 ft); and bolts for attaching hanger to door. (3) Two front binders for openings 2489 mm (8 ft) and less in height; three front binders for openings higher than 2489 mm (8 ft); one rear binder and binder pocket for openings 3048 mm (10 ft) and less in height; two rear binders and binder pockets for openings higher than 3048 mm (10 ft.) (4) One stay roll with attachment bolts suitable for the form of sill used. (5) One bracket for each track bolt. (6) Two half-oval chafing strips for back of door; two flat strips for front of door opposite half-oval strips; bolts for fastening above strips together through door; length of strips to be 102 mm (4 in.) less than width of door. Doors exceeding 2489 mm (8 ft) in height require three chafing strip assemblies. (7) One strip 127 mm (5 in.) less than width of door to take wear of stay roll; and wood screws for attachment. (8) One wedge with screws for attachment. (9) Handles with bolts and screws for attachment. (10) One front bumper and one back bumper. (11) Four bumper shoes and screws for attachment; each bumper shoe may be made in two pieces. (12) Washers for all wall bolts. (13) Instructions for installation.

Hardware for vertically sliding tin-clad and sheet-metal doors is designed for openings not exceeding 7.4 sq mm (80 sq ft) in area, with no dimension exceeding 3660 mm (12 ft.)

Each complete set of certified hardware for vertically sliding tin-clad and sheet-metal door contains: (1) Two 89 by 9.5 mm (3-1/2 by 3/8 in.) tracks, length equal to twice the height of the opening plus 229 mm (9 in.) punched for wall bolts. (2) One cast-iron bracket for each track bolt. (3) Two malleable-iron track guides for each track for openings 1524 mm (5 ft) or less in height and an additional guide for each track for each 762 mm (2-1/2 ft) or fraction thereof in excess of 1524 mm (5 ft.) (4) One bumper bolted to top of each track with wall bolt. (5) Four bumper shoes and screws for attachment. (6) Two wrought-iron or steel cables, not less than 7.9 mm (5/16-in.) diameter. (7) Two cable brackets. (8) Four cable fasteners and thimbles. (9) Two cable pulleys, with malleable-iron frames and sheaves. (10) Counterweights. (11) Two 19 by 6.4 mm (3/4 by 1/4 in.) half-oval chafing strips for back of door; length 51 mm (2 in.) less than height of door; strips held by 6.4 mm (1/4 in.) bolts or machine screws with countersunk heads, passing through door and bearing against washers. (12) Handles with bolts and screws for attachment. (13) Necessary washers, rivets, bolts, and screws to properly fasten the hardware to the door and wall. (14) Instructions for installation.

Certification Marks are applied to each hanger, binder, bumper, flush pull, stay roll, and to each section of track in a set of certified single-slide hardware, and for center-parting doors, Certification Marks are applied to each track section, center floor binder, center track binder, and center latch assembly.

Swinging Type

Swinging hardware is designed for single-swing sheet-metal and three-ply tin-clad doors not exceeding 1829 mm (6 ft) in width and 3660 mm (12 ft) in height and doors swinging in pairs not exceeding 3048 mm (10 ft) in width and 3660 mm (12 ft) in height and two-ply tin-clad doors swinging single not exceeding 1829 mm (6 ft) in width and 3048 mm (10 ft) in height and doors swinging in pairs not exceeding 3048 mm (10 ft) in width and 3048 mm (10 ft) in height.

Each complete set of certified hardware for single-swing door includes wall strips (except for openings supplied with standard steel frames), hinge brackets, hinges, catches, latches, latch keepers, connecting bar, operating handle mechanism, latch spring, and necessary washers, rivets, and bolts to mount hardware on door and wall. For doors mounted in pairs — above members, top and bottom bolts and top and bottom bolt keepers for standing doors.

Hardware for sheet metal doors is essentially the same as tin-clad doors with minor differences to conform to the door construction of various manufacturers.

Certification Marks are applied to each hinge strap, hinge bracket, connecting bar, and catch for single doors, and for doors in pairs, also to each latch, each top and bottom bolt and keeper for the standing door, and to each hinge wall strap.

ADDITIONAL INFORMATION

See Fire Doors Certified for Canada (GSNV7) and Fire-resistance Ratings Certified for Canada (BXRH7).

Fire Door Hardware Certified for Canada (GZYX7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, ''Standard Method For Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Hardware.''

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Fire Door Viewers Certified for Canada (HAAU7)

GENERAL

This category covers fire door viewers intended for use with certified fire doors rated up to and including 1 h unless otherwise specified in the individual certifications.

They have been investigated with respect to their fire-protection characteristics only.

They require a hole be drilled through the fire door of a diameter to provide a tight fit. Certified fire doors can be provided from the factory with appropriately sized holes for field installation of one or two of the fire door viewers. See the installation instructions accompanying the fire door viewer.

ADDITIONAL INFORMATION

For additional information, see Hardware Certified for Canada (GWGR7), Fire Doors Certified for Canada (GSNV7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S104, ''Standard Method for Fire Tests of Door Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fire Door Viewer.''

* *

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FIRE MAIN EQUIPMENT CERTIFIED FOR CANADA (HAMV7)

This category covers devices and equipment intended for use in fire protection service in accordance with National Fire Protection Association Standards.

These products have not been investigated for use in potable water systems.

INDICATOR POSTS, GATE VALVE CERTIFIED FOR CANADA (HCBZ7)

USE AND INSTALLATION

This category covers indicator posts, including wall and underground types, intended for use in operating gate valves of the inside-screw pattern and for indicating the position of the gates in the valves.

Gate valve indicator posts are intended for use with gate valves controlling water supplies to sprinkler, deluge, water spray, foam, and standpipe systems used in fire service.

Unless otherwise noted, these gate valve indicator posts are of the telescopic-barrel type intended for use with gate valves 101 to 355 mm in size. Indicator posts intended for use with valves larger than 355 mm, and those intended for use with valves in pits, are indicated in the individual certifications.

Gate valve indicator posts are intended to be installed in accordance with the manufacturer's installation instructions and the Standards of the National Fire Protection Association for the installation of fire protection systems employing water, such as:

Indicator Posts, Gate Valve Certified for Canada (HCBZ7)−*Continued*

ANSI/NFPA 11, ''Low-, Medium-, and High-Expansion Foam''
ANSI/NFPA 13, ''Installation of Sprinkler Systems''
ANSI/NFPA 14, ''Installation of Standpipe and Hose Systems''
ANSI/NFPA 24, ''Installation of Private Fire Service Mains and Their Appurtenances''

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C789 (1975), ''Guide for the Investigation of Indicator Posts for Fire Protection Service.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fire Main Indicator Post.''

* *

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PIPE CERTIFIED FOR CANADA (HEFR7)

Cross-linked Polyethylene Pipe Certified for Canada (HESG7)

USE AND INSTALLATION

This category covers cross-linked polyethylene (PEX) pressure pipe intended for use in underground fire-service systems where the working pressure does not exceed that indicated in the individual certifications. This pipe is intended to be installed in accordance with the manufacturer's installation instructions, ANSI/NFPA 24, ''Installation of Private Fire Service Mains and Their Appurtenances,'' and the ''National Building Code of Canada.''

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C1285, ''Piping and Couplings, Polyvinyl Chloride (PVC) for Underground Fire Service,'' and ULC/ORD-C1713, ''Pressure Pipe and Couplings, Glass Fiber-Reinforced for Underground Fire Service.''

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''PEX Pipe for Underground Water Mains.''

* *

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Chlorinated Polyvinyl Chloride Pipe Certified for Canada (HFYH7)

USE AND INSTALLATION

This category covers chlorinated polyvinyl chloride (CPVC) pressure pipe intended for use in underground fire-service systems where the working pressure does not exceed that indicated in the individual certifications. This pipe is intended to be installed in accordance with the manufacturer's installation instructions, ANSI/NFPA 24, ''Installation of Private Fire Service Mains and Their Appurtenances,'' and the ''National Building Code of Canada.''

ADDITIONAL INFORMATION

For additional information, see Fire Main Equipment Certified for Canada (HAMV7) and Fire Protection Equipment Certified for Canada (AAFP7).

Chlorinated Polyvinyl Chloride Pipe Certified for Canada (HFYH7)−*Continued*

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C1285, "Piping and Couplings, Polyvinyl Chloride (PVC) for Underground Fire Service,", and ULC/ORD-C1713, "Pressure Pipe and Couplings, Glass Fiber-Reinforced, for Underground Fire Service".

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "CPVC Pipe for Underground Water Mains."

* *

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PIPE FITTINGS CERTIFIED FOR CANADA (HHJZ7)

This category covers fittings intended for use in fire service systems and connections to such systems where the working pressures do not exceed those for which the fittings are rated.

Authorities Having Jurisdiction should be consulted before installation.

These products have not been investigated for use in potable water systems.

Fittings, Cast Iron, Ductile Iron, Malleable Iron and Bronze Certified for Canada (HHXX7)

USE AND INSTALLATION

This category covers iron and bronze fittings intended for use in water-supply piping systems and fire-suppression-system piping in accordance with National Fire Protection Association Standards, including the following:

ANSI/NFPA 13, "Installation of Sprinkler Systems"
ANSI/NFPA 14, "Installation of Standpipe and Hose Systems"
ANSI/NFPA 15, "Water Spray Fixed Systems for Fire Protection"
ANSI/NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances"

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

These products have not been investigated this product for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Fire Main Equipment Certified for Canada (HAMV7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The products in this category have been investigated for compliance with the dimensional requirements specified in the following standards (where applicable), and for the pressure ratings as indicated in the individual certifications:

ANSI/AWWA C110/A21.10, "Ductile-Iron and Gray-Iron Fittings for Water, 3 in. Through 48 in. (76 mm Through 1219 mm)"
ANSI/AWWA C153/A21.53, "Ductile-Iron Compact Fittings for Water Service"
ANSI/ASME B16.1, "Cast Iron Pipe Flanges and Flanged Fittings, Classes 25, 125 and 250"
ANSI/ASME B16.3, "Malleable Iron Threaded Fittings, Classes 150 and 300"
ANSI/ASME B16.4, "Gray Iron Threaded Fittings, Classes 125 and 250"
ANSI/ASME B16.5, "Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24"
ANSI/ASME B16.14, "Ferrous Pipe Plugs, Bushings, and Locknuts with Pipe Threads"
ANSI/ASME B16.15, "Cast Bronze Threaded Fittings, Classes 125, and 250"
ISO 49, "Malleable Cast Iron Fittings Threaded to ISO 7-1"
BSI BS 143 & 1256, "Threaded Pipe Fittings in Malleable Cast Iron and Cast Copper Alloy"
BS EN 10242, "Threaded Pipe Fittings in Malleable Cast Iron"

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is

Fittings, Cast Iron, Ductile Iron, Malleable Iron and Bronze Certified for Canada (HHXX7)−*Continued*

the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Cast Iron Fitting" (or "CI"), "Ductile Iron Fitting" (or "DI"), "Malleable Iron Fitting" (or "MI") or "Bronze Fitting" (or "BRZ").

* *

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Fittings, Retainer Type Certified for Canada (HJKF7)

USE AND INSTALLATION

This category covers fittings consisting of mechanical joint retainer devices and flange adapters intended for use with underground metallic and/or nonmetallic piping, as indicated in the individual certifications. These fittings are intended to be installed in fire service systems in accordance with the manufacturer's installation instructions.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C194, "Guide for the Investigation of Gasketed Joints for Cast iron Pressure Pipe and Fittings."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Mechanical Joint Retainer Gland," "MJ Gland" or "Flange Adaptor."

* *

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STRAINERS, PIPELINE CERTIFIED FOR CANADA (HLCV7)

USE AND INSTALLATION

This category covers devices intended for use in fire-service systems, such as automatic sprinkler systems and fixed water-spray systems, where protection against clogging of water discharge openings is needed.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

These devices have not been investigated for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C321, "Pipeline Strainers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Main Pipeline Strainer."

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VALVES CERTIFIED FOR CANADA (HLQT7)

Ball Valves, System Control Certified for Canada (HLUG7)

GENERAL

This category covers system-control ball valves intended for use in piping systems supplying water or air for fire-protection service. These valves are intended for a minimum working pressure of 1206 kPa for 305 mm or smaller, and 1034 kPa for sizes 356 mm and larger.

All valves are equipped with a worm gear or traveling-nut actuator to minimize the occurrence of water hammer. Valves that may be provided with a factory-installed or field-installed valve-position-signal attachment are noted in the individual certifications.

System-control ball valves may be provided with an assembly consisting of a supervisory switch having electrical signaling contacts for the purpose of indicating an abnormal condition and the restoration to normal of such valves. These supervisory-switch assemblies are intended for mounting directly to the valve-actuating mechanism and are noted in the individual certifications.

These valves are intended to be installed in accordance with the manufacturer's installation instructions, in addition to the following:

ANSI/NFPA 11, "Low-, Medium-, and High-Expansion Foam"
ANSI/NFPA 13, "Installation of Sprinkler Systems"
ANSI/NFPA 14, "Installation of Standpipe and Hose Systems"
ANSI/NFPA 15, "Water Spray Fixed Systems for Fire Protection"
ANSI/NFPA 16, "Installation of Foam-Water Sprinkler and Foam-Water Spray Systems"
ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection"
ANSI/NFPA 22, "Water Tanks for Private Fire Protection"
ANSI/NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances"

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

These valves have not been investigated for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1091, "Preliminary Standard for Butterfly Valves for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "System Control Ball Valve."

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Butterfly Valves Certified for Canada (HLXS7)

USE AND INSTALLATION

This category covers butterfly valves intended for use in fire-service systems for working pressures not exceeding 1210 kPa for sizes 12 NPS or smaller and 1034 or 1210 kPa for sizes larger than 12 NPS. Some valves are rated for pressures greater than 1210 kPa as indicated in individual certifications. All valves are equipped with a worm gear or traveling-nut actuator to minimize the occurrence of water hammer. Valves with indicators suitable for underground fire-service systems and valves provided with a valve-position-signal attachment (actuators equipped with a valve-position supervisory switch) or indicator posts are noted in the individual certifications.

When a butterfly valve is in the open position, the disc may extend beyond the end of the valve body. During installation, it should be verified that the valve disc does not interfere with the operation of system components installed immediately adjacent to the butterfly valve.

Requirements for the installation and use of these valves are included in National Fire Protection Association standards for the installation of water-based fire-protection systems, including:

ANSI/NFPA 11, "Low-, Medium-, and High-Expansion Foam"
ANSI/NFPA 13, "Installation of Sprinkler Systems"
ANSI/NFPA 14, "Installation of Standpipe and Hose Systems"
ANSI/NFPA 15, "Water Spray Fixed Systems for Fire Protection"
ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection"
ANSI/NFPA 22, "Water Tanks for Private Fire Protection"

Butterfly Valves Certified for Canada (HLXS7)–*Continued*

ANSI/NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances"

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

These valves have not been investigated for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1091, "Preliminary Standard for Butterfly Valves for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Butterfly Valve."

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Check Valves Certified for Canada (HMER7)

USE AND INSTALLATION

This category covers check valves for use in fire-service systems for working pressures not exceeding 1206 kPa for sizes 2 to 12 in. inclusive, and 1034 kPa for sizes larger than 12 in. Some valves are rated for pressures greater than 1206 kPa as indicated in the individual certifications.

Regular-type check valves are iron or brass bodied and may have metal-to-metal or rubber-faced checks as noted in the individual certifications. They may be provided with threaded, cut groove, flanged, or hub ends or wafer style appropriate to the size of the valve and the intended use. They may be installed in either horizontal or vertical positions.

Detector-type check valves are iron or brass bodied with a weighted clapper and have provisions for connection of a bypass meter around the check.

In the open position, the disc of a wafer- or lug-style check valve may extend beyond the end of the valve body. During installation, it should be determined that the check-valve disc does not interfere with the operation of system components installed immediately adjacent to the check valve.

Requirements for the installation and use of these valves are included in National Fire Protection Association standards for the installation of fire-protection systems employing water, such as:

ANSI/NFPA 11, "Low-, Medium-, and High-Expansion Foam"
ANSI/NFPA 13, "Installation of Sprinkler Systems"
ANSI/NFPA 14, "Installation of Standpipe and Hose Systems"
ANSI/NFPA 15, "Water Spray Fixed Systems for Fire Protection"
ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection"
ANSI/NFPA 22, "Water Tanks for Private Fire Protection"
ANSI/NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances"

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

These valves have not been investigated for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C312, "Check Valves for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Check Valve" or "Detector Check Valve."

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Check Valves Certified for Canada (HMER7)−*Continued*

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Gate Valves Certified for Canada (HMRZ7)

USE AND INSTALLATION

This category covers gate valves intended for use in fire-service systems for working pressures not exceeding 1210 kPa for sizes 12 in. or smaller, and 1030 kPa for sizes larger than 12 in. Some valves are rated for 1720 or 2070 kPa working pressures as indicated in the individual certifications.

The valves may be provided with threaded, flanged, hub or other end configurations appropriate to the size of valve and the intended use and installed in either horizontal or vertical positions.

Gate valves may be of the outside-screw-and-yoke type or of the inside-screw type, the latter for installation either above or below ground. Gate valves of the outside-screw-and-yoke type are intended for use with pipe of 1/2 in. or larger sizes.

Gate valves of the inside-screw type are intended for use with pipe of 2-1/2 in. or larger sizes.

If valves are suitable for use with indicator posts, it is so indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

These products have not been investigated for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Fire Main Equipment Certified for Canada (HAMV7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C262 (1992), ''Gate Valves for Fire Protection Service.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fire Main Gate Valve.''

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FIRE ALARM CABLE CERTIFIED FOR CANADA (HNGV7)

POWER-LIMITED FIRE ALARM CABLE CERTIFIED FOR CANADA (HNIR7)

USE

This category covers power-limited fire alarm cable, which is a single and multiple conductor cable intended for use within buildings in fire alarm and signal systems in accordance with Sections 16 and 32 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' This cable is rated 300 V maximum and has a 60°C minimum temperature rating.

PRODUCT MARKINGS

Power-limited fire alarm cable is identified by a marking on the surface of the jacket or on a marker tape under the jacket. This marking includes the flame rating ''FT1,'' ''FT4'' or ''FT6,'' in addition to one of the following Type designations:

FAS — Indicates cable rated 60°C maximum.
FAS90 — Indicates cable rated 90°C maximum.
FAS105 — Indicates cable rated 105°C maximum.
FAS150 — Indicates cable rated 150°C maximum.
FAS200 — Indicates cable rated 200°C maximum.

Cable marked ''sunlight resistant'' or ''sun res'' or ''SR'' may be exposed to the direct rays of the sun.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 208, ''Fire Alarm and Signal Cable.''

Power-limited Fire Alarm Cable Certified for Canada (HNIR7)−*Continued*

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Power-limited Fire Alarm Cable.''

The Listing Mark for this category requires the use of a holographic label.

* *

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FIRE-RESISTIVE DUCT ASSEMBLIES CERTIFIED FOR CANADA (HNKN7)

GENERAL

A fire-resistive duct assembly is a construction consisting of a duct and materials designed to protect the duct for a specified hourly rating. The specifications for the materials in the fire-resistive duct assembly and the assembly of the materials are details that directly relate to the established ratings. Information concerning these details is described in the individual assemblies. The hourly ratings apply only to the complete assemblies. Individual components are designated for use in a specific assembly to achieve specific ratings. The individual components are not assigned ratings and are not intended to be interchanged between assemblies.

RELATED PRODUCTS

For a description of ventilation duct assemblies investigated for fire resistance, see Ventilation Duct Assemblies Certified for Canada (HNLJ7).

VENTILATION DUCT ASSEMBLIES CERTIFIED FOR CANADA (HNLJ7)

GENERAL

This category covers the fire-resistive performance of ventilation duct assemblies investigated in accordance with ISO 6944-1985, ''Fire Resistance Tests – Ventilation Ducts.'' The purpose of this test is to measure the ability of a representative ventilation duct assembly to resist the spread of fire from one compartment to another without the aid of fire dampers.

ISO 6944 defines performance requirements for ventilation duct assemblies in terms of insulation, integrity and stability. Stability is the measurement of a ventilation duct assembly's ability to resist collapse, which would prevent the ventilation duct assembly from performing its intended function. Integrity is the measurement of the ventilation duct assembly's ability to resist the passage of flames and hot gases into a nonfire environment. Insulation is the measurement of the ventilation duct assembly's ability to limit the temperature rise on the surface of the ventilation duct assembly in a nonfire environment from reaching an average temperature rise of 140°C (252°F) and a maximum temperature rise of 180°C (324°F).

ISO 6944 is applicable to vertical and horizontal ducts, with or without branches, taking into account the joints, air supply and exhaust openings, as well as the basic duct construction.

ISO 6944 contains requirements for two types of ventilation duct assemblies, identified as Duct A and Duct B. The requirements for Duct A are intended for ventilation duct assemblies that pass through the fire environment without openings. The requirements for Duct B are intended for ventilation duct assemblies where the duct contains openings within the fire environment. ISO 6944 recommends the ventilation duct assembly tested represent the maximum width-to-height ratio intended for use. ISO 6944 also recommends the tested duct be 250 mm by 1000 mm. The Classification for all ventilation duct assemblies is based upon data from fire tests on 250 mm by 1000 mm ducts unless reported otherwise.

Ventilation duct assemblies have been investigated for a flame spread rating of 25 or less and a smoke developed rating of 50 or less in accordance with the ''Canadian National Building Code,'' and ANSI/NFPA 90A, ''Installation of Air-Conditioning and Ventilating Systems.''

Ventilation duct assemblies are intended to be installed in accordance with the manufacturer's installation instructions provided with the product. Where a ventilation duct assembly penetrates a fire-rated floor or wall assembly, the resulting opening around the ventilation duct assembly should be firestopped with a firestop system tested in accordance with CAN/ULC-S115, ''Standard Method of Fire Tests of Firestop Systems.'' Each individual ventilation duct assembly includes reference to one or more through-penetration firestop systems described in Through-penetration Firestop Systems Certified for Canada (XHEZ7).

Ventilation Duct Assemblies Certified for Canada (HNLJ7)−*Continued*

The FT or FTH ratings of the firestop system should be equal to or greater than the hourly insulation rating of the ventilation duct assembly.

Authorities Having Jurisdiction should be consulted as to the particular requirements covering the installation and use of these Classified assemblies.

ADDITIONAL INFORMATION

For additional information, see Fire-resistive Duct Assemblies Certified for Canada (HNKN7) and Fire Resistance Ratings Certified for Canada (BXRH7).

UL MARK

Those materials identified by an (*) in the assembly description text are eligible to be produced under UL's Follow-Up Service Program. The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service.

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COATED DUCTS CERTIFIED FOR CANADA (HNNX7)

USE AND INSTALLATION

This category covers duct sections, which are factory coated with materials intended to provide fire-resistive properties.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

Properties of these ducts, other than the degree of fire resistance of specific duct assemblies, have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Fire-resistive Duct Assemblies Certified for Canada (HNKN7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the fire-resistive duct assemblies in which these products are installed is ISO 6944-1985, "Fire Resistance Tests – Ventilation Ducts."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word " CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

COATED DUCT
FOR USE IN FIRE RESISTIVE DUCT ASSEMBLIES
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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METALLIC COMPOSITE DUCTS CERTIFIED FOR CANADA (HNOE7)

USE AND INSTALLATION

This category covers duct sections fabricated from panel units of a cementitious core mechanically bonded to metallic face sheets intended to provide fire-resistive properties.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

Properties of these ducts, other than the degree of fire resistance of specific duct assemblies, have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Fire-resistive Duct Assemblies Certified for Canada (HNKN7) and Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the fire-resistive duct assemblies in which these products are installed is ISO 6944 (1985), "Fire Resistance Tests – Ventilation Ducts."

Metallic Composite Ducts Certified for Canada (HNOE7)−*Continued*

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

METALLIC COMPOSITE DUCT
FOR USE IN FIRE-RESISTIVE DUCT ASSEMBLIES
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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FITTINGS CERTIFIED FOR CANADA (HSNX7)

Fittings as listed in the following include adapters, connectors, pigtails, etc. commonly used in the assembly of appliances, equipment or piping for the handling of flammable gases or liquids. The various categories and listings identify such fluids.

ADAPTERS, COUPLINGS AND FITTINGS CERTIFIED FOR CANADA (HTBV7)

Adapters, couplings and fittings include filler and vapor-return hose couplings, gauge adapter fittings, quick-connect couplings, sight flow indicators, and other types of fittings intended to be used for making various types of connections in piping systems.

Anhydrous-ammonia Adapters and Miscellaneous Fittings Certified for Canada (HTPT7)

USE

This category covers various adapters, couplings and fittings intended for use with anhydrous-ammonia systems and related equipment utilized for industrial processes or agricultural soil fertilization. They are for use where the working pressure does not exceed 1720 kPa.

Anhydrous-ammonia reacts rapidly with copper, zinc, and their alloys. Therefore, users are cautioned against employing any parts of such metals for handling anhydrous-ammonia.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C125 (1992), "Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief)."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Adapter or Fitting for Anhydrous Ammonia" (or "Adapter or Fitting for NH_3").

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LP-GAS ADAPTERS AND MISCELLANEOUS FITTINGS CERTIFIED FOR CANADA (HVEX7)

USE

This category covers various adapters, couplings, connection devices and miscellaneous fittings intended for use primarily by manufacturers and

LP-Gas Adapters and Miscellaneous Fittings Certified for Canada (HVEX7)−*Continued*

distributors of LP-gas systems. They are intended for use with domestic, commercial, or industrial types of systems where the working pressure does not exceed 1720 kPa.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate pipe-connecting fittings and adapters in this category is ULC/ORD-C567, ''Guide for the Investigation of Pipe Connectors for Flammable Liquids and LP-Gas.''

The basic standard used to investigate Type I and Type II connection devices in this category is ANSI Z21.81/CSA 6.25, ''Cylinder Connection Devices.''

The basic standard used to investigate excess flow check and shutoff mechanisms of fittings and adapters in this category is ULC/ORD-C125, ''Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief).''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Adapter for LP-Gas'' or ''Fitting for LP-Gas.''

* *

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FLEXIBLE HOSE CONNECTORS CERTIFIED FOR CANADA (HXVX7)

USE AND INSTALLATION

This category covers flexible hose connectors consisting of a length of reinforced elastomeric or thermoplastic hose not over 152.4 cm (60 in.) long with a fitting attached to each end. They are intended for use in accordance with CAN/CSA-B149.1, ''Natural Gas and Propane Installation Code,'' or the applicable local code requirements, at temperatures down to -40°C (-40°F).

Hose connectors are rated for low-pressure or high-pressure applications. Hose connectors rated for low-pressure applications are intended for making connection between the outlet of an LP-gas regulator and the service piping where the maximum working pressure does not exceed 0.15 kPa (1 psig), and are also suitable for use in natural gas applications where pressures do not exceed 0.15 kPa (1 psig). Hose connectors rated for high-pressure applications are suitable for making connection between an LP-gas cylinder valve and a control manifold or regulator where pressures do not exceed 2400 kPa gauge (350 psig).

RELATED PRODUCTS

See LP-Gas Hose for Flexible Connectors Certified for Canada (MWOS8).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CGA-8.1 (1986), ''Elastomeric Composite Hose and Hose Couplings for Conducting Propane and Natural Gas,'' and CSA/CAN1-8.3 (1977), ''Thermoplastic Hose and Hose Couplings for Conducting Propane and Natural Gas.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Flexible Hose Connector for Propane [or LP-Gas]'' or ''Flexible Hose Connector for Propane [or LP-Gas] and Natural Gas,'' and the appropriate CGA Type if shown in the individual Listings.

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QUICK-DISCONNECT DEVICES CERTIFIED FOR CANADA (HXWS7)

USE AND INSTALLATION

This category covers hand-operated quick-disconnect devices intended for use in LP-gas, natural gas, manufactured gas and mixed-gas supply lines to provide a means for connecting and disconnecting appliances or appliance connectors. These devices are intended for indoor and outdoor use at pressures not exceeding 3.5 kPa gauge. These devices are provided with an automatic means to shut off the flow of gas from the supply when the mating parts of the device are disconnected. The mating parts are provided with a positive locking means or a straight-pull disconnection means to prevent accidental disconnection of the device.

These devices are intended for installation and use in accordance with CSA B149.1, ''Natural Gas and Propane Installation Code.'' Only persons trained in the maintenance, hazards and testing procedures of the gas system should perform the installation.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.41/CSA 6.9 (2011), ''Quick Disconnect Devices for Use with Gas Fuel Appliances.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Quick-disconnect Device for Gas Fuel Appliances,'' and the statement ''IN ACCORDANCE WITH ANSI Z21.41/CSA 6.9.''

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LUMINAIRES AND FITTINGS CERTIFIED FOR CANADA (HYXT7)

USE

This category covers complete luminaires intended for general and special-purpose illumination, and component fittings and retrofits intended for field assembly to or into complete units.

SPECIAL-USE LUMINAIRES

Cooking Hood Luminaires — Luminaires intended for use in nonresidential occupancies in exhaust ducts or hoods above cooking equipment are marked **"SUITABLE FOR USE WITHIN COMMERCIAL COOKING HOODS"** and **"MOUNT A MINIMUM OF 1.2 M (4 FT) ABOVE COOKING SURFACE."**

Recessed cooking hood luminaires are additionally marked with a minimum spacing marking: **"INSTALL WITH MINIMUM SPACINGS BETWEEN A) CENTER-TO-CENTER OF ADJACENT LUMINAIRES: ___MM (___ INCHES); B) TOP OF LUMINAIRE AND AN OVERHEAD BUILDING MEMBER: ___MM (___ INCHES); AND C) LUMINAIRE CENTER TO SIDE BUILDING MEMBER: ___MM (___ INCHES)."** The recessed cooking hood is intended to be installed in a hood that maintains these minimum spacings.

Air-handling Luminaires — Luminaires suitable for air-handling use are marked **"SUITABLE FOR AIR HANDLING USE."** Some recessed air-handling luminaires are restricted to certain applications because of certain features and are marked as follows: **"VENTILATING OR COOLING AIR ONLY," "ONLY FOR USE IN CEILING PLENUM OF NONCOMBUSTIBLE CONSTRUCTION OR WITH AIR HANDLING PARTS THAT COVER VENT OPENINGS."**

LUMINAIRE INSTALLATION MARKINGS

Unless otherwise indicated under the category for a specific type of luminaire, all luminaires are marked indicating the location where they can be used:

Luminaires marked **"DRY LOCATIONS ONLY"** are intended to be installed in indoor dry locations.

Luminaires marked **"SUITABLE FOR DAMP LOCATIONS"** are intended to be installed in damp or dry locations.

Luminaires marked **"SUITABLE FOR WET LOCATIONS"** are intended to be installed in wet, damp or dry locations.

The locations are defined in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

In addition to the dry-, damp- or wet-location markings, a luminaire may be optionally investigated and marked for ingress protection in accordance with IEC 60529, ''Degrees of Protection Provided by Enclosures (IP Code).'' IP code markings are supplemental and not intended to replace dry-, damp- or wet-location markings.

Luminaires investigated for or restricted to a particular mounting location for suitability to wet locations are additionally marked **"SUITABLE FOR MOUNTING WITHIN 1.2 M (4 FT) OF THE GROUND," "SUITABLE FOR GROUND-MOUNTED RECESSED," "LIMIT RANGE OF ADJUSTMENT TO (instruction)"** or **"COVERED CEILING MOUNT ONLY."**

Luminaires investigated for or restricted to a particular mounting location are marked **"WALL MOUNT ONLY," "FOR CEILING MOUNTING ONLY"** or **"MOUNTING ORIENTATION"** (such as ''This End Up'').

Luminaires are marked with a supply wire temperature rating **"MIN ___C SUPPLY CONDUCTORS,"** if intended for greater than 75°C supply wiring. Luminaires rated for over 90°C supply wiring are additionally marked **"NOT FOR USE IN DWELLING."**

Luminaires that include an integral raceway are marked **"SUITABLE FOR USE AS RACEWAY"** and are additionally marked to include the maximum number, size and type of conductors they are intended to accommodate. See Surface Metal Raceways Certified for Canada (RJBT7) for raceways that can be assembled and installed as lighting units.

Some luminaires are only suitable for use with specific lamp types and are so marked. However, luminaires are not investigated or intended for use with sun lamps.

Luminaires containing components that require the luminaire to be connected only to an alternating-current circuit are marked **"60 Hz"** or **"AC ONLY."**

Luminaires designed for connection to a proprietary wiring system will specify the name and part number of the proprietary system and all cautionary or other markings required for the system. These systems are covered under Manufactured Wiring Systems Certified for Canada (QQVX7).

Luminaires designed for connection to other than nominal 120 V supply and/or a 2-wire branch circuit are marked to identify the voltage supply or type of branch circuit or both.

RELATED PRODUCTS

Fire-resistant Luminaires — Luminaires intended for recessed installation in ceilings that have been shown to provide a degree of fire resistance with the floor or roof assembly with which they have been tested are covered under Luminaires, Luminaire Assemblies and Luminaire Enclosures Classified for Fire Resistance Certified for Canada (CDHW7).

Emergency Lighting — Luminaires intended for simultaneous connection to normal and emergency power circuits, as well as luminaires with integral batteries for emergency illumination, are covered under Emergency Lighting and Power Equipment Certified for Canada (FTBR7).

Exit Lighting — Luminaires that illuminate an integral legend ''Exit'' are covered under Exit Fixtures Certified for Canada (FWBO7).

Electric Signs — Products that illuminate an integral legend other than ''Exit'' are covered under Signs Certified for Canada (UXYT7).

Suntan Lamps — Lighting products that employ suntan lamps are covered under Sun and Heat Lamps Certified for Canada (QPDY7) or Personal Sun and Heat Equipment Certified for Canada (QGRX7).

Submersible Luminaires — Luminaires intended for installation under water in accordance with Section 68 of the CEC are covered under Submersible Luminaires Certified for Canada (IFEV7) if intended for decorative fountains and similar locations, or Luminaires and Forming Shells Certified for Canada (WBDT7) if intended for installation in swimming pools and similar locations.

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LUMINAIRES AND FITTINGS, SPECIAL PURPOSE, MISCELLANEOUS CERTIFIED FOR CANADA (IETR7)

GENERAL

This category covers special-purpose luminaires and fittings that are parts and/or subassemblies of special-purpose luminaires intended for final assembly into special-purpose luminaires in the field.

PRODUCT MARKINGS

All luminaires and fittings are marked indicating the location where they can be used:

Luminaires and fittings marked **"DRY LOCATIONS ONLY"** are intended to be installed in indoor, dry locations.

Luminaires and fittings marked **"SUITABLE FOR DAMP LOCATIONS"** are intended to be installed in damp or dry locations.

Luminaires and fittings marked **"SUITABLE FOR WET LOCATIONS"** are intended to be installed in wet, damp or dry locations.

All luminaires and fittings bear a model, catalog or series number (or similar designation) adjacent to the Certification Mark.

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, ''Luminaires.''

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Miscellaneous Luminaire,'' ''Floodlight'' or ''Inspection Light,'' or other appropriate product name as shown in the individual Listings.

UL MARK

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LUMINAIRE CONVERSIONS, RETROFIT CERTIFIED FOR CANADA (IEUQ7)

USE AND INSTALLATION

This category covers retrofit devices or kits consisting of parts and/or subassemblies intended for field installation in UL-certified luminaires, office furnishing luminaires or portable luminaires. These products have been investigated by UL to determine that, when used in accordance with the manufacturer's instructions, they do not adversely affect the operation of the complete unit.

This category includes reflector kit retrofits and other retrofit devices. Reflector kits are intended to be used to add or replace reflectors in fluorescent luminaires and may also involve relocation, removal or replacement of wiring, lampholders and ballasts. Reflector kits are not intended to be installed on luminaires used as air-handling registers unless the accompanying reflector kit installation instructions specify this combination as suitable.

This category also includes retrofit kits consisting of light-emitting-diode (LED) light sources intended to replace a fluorescent lamp and where it is necessary to modify the luminaire. The modification may involve removing the fluorescent lamp ballast or rewiring lampholders within the luminaire in order to power the LED light source. A luminaire that is modified so it can no longer accept the original lamp has a label affixed (provided by the retrofit kit manufacturer) indicating the luminaire has been modified and can no longer operate the originally intended lamp(s).

RELATED PRODUCTS

Retrofit devices used to convert incandescent exit luminaires to fluorescent exit luminaires are covered under Exit Sign Conversion Kits Certified for Canada (FWCF7).

LED light sources intended to replace fluorescent lamps and where it is not necessary to modify the luminaire are covered under Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0 (2008), ''Luminaires,'' and CSA Technical Information Letter No. B-64, ''Interim Certification Requirements for Retrofit Assemblies for Use in Fluorescent Luminaires.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

For reflector kits:

LUMINAIRE CONVERSION, RETROFIT
FOR USE ONLY WITH + IDENTIFIED IN MANUFACTURER'S INSTRUCTIONS
Control No.

For nonreflector kits:

Luminaire Conversions, Retrofit Certified for Canada (IEUQ7)−*Continued*

The Classification Mark for retrofit devices that are other than reflector kits includes the Classification Mark elements detailed above and the following additional information:

LUMINAIRE CONVERSION, RETROFIT
(WITH RESPECT ONLY TO *)
FOR USE ONLY WITH +
Control No.

+ **FLUORESCENT LUMINAIRES**, **INCANDESCENT LUMINAIRES**, **HID LUMINAIRES**, **OFFICE FURNISHING LUMINAIRES** or **PORTABLE LUMINAIRES**

* **RISK OF FIRE** or **RISK OF SHOCK** (the entire parenthetical phrase is provided only if found applicable by UL)

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FLUORESCENT-LAMP-TYPE LUMINAIRES CERTIFIED FOR CANADA (IEUT7)

This category covers surface and recessed luminaires containing only fluorescent lamps or fluorescent and incandescent lamps. Luminaires that contain high-intensity-discharge lamps in combination with fluorescent lamps are Listed under High-intensity-discharge-lamp-type Luminaires Certified for Canada (IEWX7).

All luminaires employ a Class P thermally protected ballast except that luminaires intended for use with straight tubular lamps and/or marked for **"OUTDOOR USE ONLY"** incorporate a Class P thermally protected or a non-Class P ballast of the simple reactance type.

For additional information see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

SPECIAL USE LUMINAIRES

Luminaires intended for connection only to a 24 V or less input and for use in recreational vehicles are covered under Extra-low-voltage Luminaires for Recreational Vehicle Use Certified for Canada (IFDQ7).

Luminaires intended for use with germicidal lamps (germicidal lamps should not be used in ordinary luminaires) are marked **"THIS LUMINAIRE IS DESIGNED FOR USE WITH GERMICIDAL LAMPS AND MUST BE INSTALLED IN COMPLIANCE WITH COMPETENT TECHNICAL DIRECTIONS SO THAT THE USER'S EYE AND BARE SKIN WILL NOT BE SUBJECTED TO INJURIOUS RAYS."**

LUMINAIRE INSTALLATION MARKINGS

All luminaires except those intended for use with a remote ballast are marked with their electrical ratings excluding any convenience receptacle provided, stating the voltage, current or volt-amperes and frequency.

As an alternative to a marked volt-ampere rating, the luminaire line volt-amperes can be determined by the following markings: **"FOR LINE VOLT-AMPERES MULTIPLY TOTAL LAMP WATTAGE BY 1.5"** for luminaires with high power factor preheat or rapid start ballasts; **"FOR LINE VOLT-AMPERES MULTIPLY TOTAL LAMP WATTAGE BY 2.5"** for luminaires with low power factor preheat or rapid start ballasts; or **"FOR LINE VOLT-AMPERES MULTIPLY ALL LAMPS IN INCHES BY ___"** for luminaires with instant start ballasts and where the blank corresponds to a multiplying factor based on supply voltage.

Luminaires with a ballast output circuit voltage exceeding 1000 V are marked **"NOT FOR USE IN DWELLING."**

Luminaires intended to be field connected to a remote ballast are marked **"USE BALLAST FOR ___ WATT ___ TYPE LAMP"** and **"USE THERMALLY PROTECTED BALLAST FOR TYPE LAMPS."**

Luminaires are suitable for use with 60°C field wiring unless (1) the field wiring is routed within 3 inches (76 mm) of the ballast, in which case 90°C rated wire is to be used, or (2) the luminaire is marked with a supply wire rating.

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Fluorescent Surface-mounted Luminaires Certified for Canada (IEUZ7)

GENERAL

This category covers surface-mounted luminaires, including floor-, wall-, ceiling-, undercabinet-, cabinet- and pole-mounted luminaires. Ceiling-

Fluorescent Surface-mounted Luminaires Certified for Canada (IEUZ7)−*Continued*

mounted luminaires include cord-, stem-, chain- and cable-suspended luminaires, in addition to outlet box-mounted luminaires.

SPECIAL-USE LUMINAIRES

Cabinet luminaires investigated for only surface mounting inside a cabinet and not intended for recessed mounting are marked **"SUITABLE FOR SURFACE MOUNTING ONLY."** Cabinet luminaires are not intended for installation in recessed walls or ceilings.

LUMINAIRE INSTALLATION MARKINGS

All ceiling- and wall-mounted luminaires are acceptable for mounting on an insulated ceiling or wall. Exceptions: (1) Luminaires obviously not designed for ceiling use or if marked **"WALL MOUNT ONLY"** are not acceptable for mounting on ceilings, and (2) luminaires marked **"NON-COMBUSTIBLE SURFACE ONLY."**

All luminaires provided with a power-supply cord are intended for chain, hook, or similar suspension means only and are marked **"FOR CHAIN OR HOOK SUSPENSION ONLY."**

Luminaires intended for undercabinet mounting are marked **"SUITABLE FOR UNDER-CABINET MOUNTING."**

Luminaires intended for continuous-row mounting are marked **"SUITABLE FOR CONTINUOUS ROW MOUNTING."**

Luminaires weighing more than 11.3 kg (25 lbs) and intended for outlet box connection are marked **"THIS LUMINAIRE MUST BE MOUNTED OR SUPPORTED INDEPENDENTLY OF AN OUTLET BOX."**

Cabinet luminaires have been investigated for mounting in accordance with the clearances marked on the product. Cabinet luminaires not marked with clearances may be mounted as close to any surface as permitted by the housing, an integral mounting flange, bracket or spacer.

Cabinet luminaires of all types should not be located less than 30.5 cm (12 in.) apart and should be allowed a 13 mm (1/2 in.) minimum clearance between the top and any horizontal surface unless the instructions indicate a lesser spacing.

Luminaires that consist of separate wired luminaire sections are marked on each separable part with correlation markings.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) or the words "Fluorescent," "Wired Fluorescent Channel" or "Wired Fluorescent Reflector" adjacent to the Certification Mark.

RELATED PRODUCTS

Undercabinet portable luminaires of the attachment-plug equipped, cord-connected type or direct-plug-in type are covered under Luminaires, Portable Certified for Canada (QOWZ7).

Portable cabinet luminaires of the attachment-plug equipped, cord-connected type or direct-plug-in type are covered under Portable Cabinet Luminaires Certified for Canada (QOVJ7).

ADDITIONAL INFORMATION

For additional information, see Fluorescent Lamp-type Luminaires Certified for Canada (IEUT7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires."

The basic standard used to investigate undercabinet and cabinet luminaires in this category is CSA-C22.2 No. 9.0, "General Requirements for Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Luminaire."

The Listing Mark for this category requires the use of a holographic label.

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Fluorescent Recessed Luminaires Certified for Canada (IEVV7)

GENERAL

This category covers luminaires intended for installation in recessed cavities in walls, ceilings and similar locations in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

TYPES OF RECESSED LUMINAIRES

Fluorescent Recessed Luminaires Certified for Canada (IEVV7)−*Continued*

TYPE IC LUMINAIRE — Luminaires marked **"TYPE IC"** may be installed such that insulation and other combustible materials are in contact with, and over the top of, the luminaire.

TYPE NON-IC LUMINAIRE — Recessed luminaires, except those identified as Type IC or for use in concrete only, are intended to be installed in an uninsulated or insulated ceiling (or wall), with all insulation kept a minimum distance of 3 in. (76 mm) from the sides of the luminaire and not placed over the luminaire such that it would entrap the heat produced by the luminaire. Other combustible materials are spaced, except at the points of support, at least 1/2 in. (13 mm) from the luminaire.

For proper heat dissipation, Type Non-IC luminaires are intended to be installed in a cavity not closer than 1/2 in. (13 mm) from any surface forming the cavity behind the recessed portion of the luminaire and not closer than 1 in. (25 mm) from adjacent luminaires.

CONCRETE-ONLY LUMINAIRE — A recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked **"FOR USE IN CONCRETE ONLY."**

A Type IC or Non-IC luminaire that is sealed to prevent the entry of concrete may be installed in concrete providing it is marked **"SUITABLE FOR USE IN POURED CONCRETE."**

SUSPENDED-CEILING LUMINAIRE — All recessed luminaires, except those marked for use in concrete only, are suitable for use in suspended ceilings and may be marked **"SUITABLE FOR SUSPENDED CEILING."**

Recessed luminaires intended for use in suspended ceilings and provided with integral clips are marked for use with particular grid systems. Instructions for using clips to secure the luminaire to the grid are provided with the luminaire. The ability of these clips to withstand seismic disturbances has not been investigated.

GROUND-MOUNTED RECESSED LUMINAIRE — A ground-mounted recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked **"SUITABLE FOR GROUND-MOUNTED RECESSED ONLY."**

A ground-mounted recessed luminaire suitable for installation in non-fire-resistant mediums, such as a wooden deck, is marked **"SUITABLE FOR GROUND-MOUNTED RECESSED."**

LUMINAIRE INSTALLATION MARKINGS

A luminaire with an integral junction box or wiring compartment and investigated for any heat contribution added by branch-circuit conductors is marked **"MAXIMUM OF ___ NO. ___ AWG BRANCH CIRCUIT CONDUCTORS SUITABLE ___ C PERMITTED IN BOX."** A luminaire suitable for branch-circuit conductors, but not for pulling wires though conduit, is additionally marked **"FOR CABLE USE ONLY – NOT FOR PULLING WIRES."**

Luminaires which, by their construction, do not permit access to or inspection of field-wiring connections from the front of the luminaire, after installation, are marked **"ACCESS ABOVE CEILING REQUIRED," "ACCESS BEHIND WALL REQUIRED"** or **"ACCESS NONCOMBUSTIBLE CEILING PLENUM ONLY."**

Luminaires provided with polymeric recessed housings are marked **"FOR USE IN ONE- AND TWO-FAMILY DWELLINGS ONLY"** and **"FOR USE IN NON-FIRE RATED INSTALLATIONS ONLY."**

Luminaires provided with recessed housings with openings that do not close off the room side to ceiling opening are marked **"FOR USE IN NON-FIRE RATED INSTALLATIONS ONLY."**

Luminaires that consist of 1) a luminaire housing and trims or 2) a rough-in section and finishing sections are marked on each separable part with correlation markings:

(1) For luminaire housing and trims, the housing is marked **"USE WITH [manufacturer's name] [catalog number] TRIMS"** and each trim is marked with the manufacturer's name and catalog number;

(2) For rough-in and finishing sections, the rough-in section is marked **"ROUGH-IN SECTION FOR USE WITH FINISHING SECTION ___,"** where the blank refers to the type or catalog number. The finishing section is marked in the same manner stating **"FINISHING SECTION FOR USE WITH ROUGH-IN SECTION ___."**

Luminaires that consist of separate wired luminaire sections are marked on each separable part with correlation markings.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) or the words "Recessed Fluorescent," "Recessed Fluorescent Channel," "Wired Recessed Fluorescent Luminaire Reflector," "Wired Recessed Fluorescent Channel" or "Wired Fluorescent Recessed Section" adjacent to the Certification Mark.

ADDITIONAL INFORMATION

For additional information, see Fluorescent Lamp-type Luminaires Certified for Canada (IEUT7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Fluorescent Recessed Luminaires Certified for Canada (IEVV7)−*Continued*

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Luminaire."

The Listing Mark for this category requires the use of a holographic label.

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HIGH-INTENSITY-DISCHARGE-LAMP-TYPE LUMINAIRES CERTIFIED FOR CANADA (IEWX7)

GENERAL

This category covers surface- and recessed-lighting luminaires containing high-intensity-discharge lamps and may contain fluorescent and incandescent lamps.

LUMINAIRE INSTALLATION MARKINGS

All luminaires except those intended for use with a remote ballast are marked with their electrical ratings excluding any convenience receptacle provided, stating the voltage, current or volt-amperes and frequency.

Luminaires intended to be field connected to a remote ballast are marked **"USE BALLAST FOR __ WATT __ TYPE LAMP"** and **"USE THERMALLY PROTECTED BALLAST FOR TYPE LAMPS."**

Luminaires intended for use with metal halide lamps and not provided with a suitable lamp containment barrier, are marked **"DO NOT USE A LAMP IDENTIFIED FOR USE IN ENCLOSED LUMINAIRES."**

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High-intensity-discharge Surface-mounted Luminaires Certified for Canada (IEXT7)

GENERAL

This category covers surface-mounted luminaires, including floor-, wall-, ceiling-, and pole-mounted luminaires. Ceiling-mounted luminaires include cord-, stem-, chain- and cable-suspended luminaires, in addition to outlet box-mounted luminaires.

SPECIAL-USE LUMINAIRES

Luminaires suitable for continuous operation in an elevated ambient, such as a boiler room, foundry, etc., are marked **"SUITABLE FOR OPERATION IN AMBIENTS NOT EXCEEDING __ C,"** where the blank is filled in with the intended elevated ambient.

LUMINAIRE INSTALLATION MARKINGS

All ceiling- and wall-mounted luminaires are acceptable for mounting on an insulated ceiling or wall. Exceptions: (1) luminaires obviously not designed for ceiling use or if marked **"WALL MOUNT ONLY"** are not acceptable for mounting on ceilings, and (2) luminaires marked **"NON-COMBUSTIBLE SURFACE ONLY."**

All luminaires provided with a power-supply cord are intended for chain, hook, or similar suspension means only and are marked **"FOR CHAIN OR HOOK SUSPENSION ONLY."**

Luminaires intended for undercabinet mounting are marked **"SUITABLE FOR UNDER-CABINET MOUNT."**

Luminaires intended for continuous-row mounting are marked **"SUITABLE FOR CONTINUOUS ROW MOUNTING."**

Luminaires weighing more than 11.3 kg (25 lbs) and intended for outlet box connection are marked **"THIS LUMINAIRE MUST BE MOUNTED OR SUPPORTED INDEPENDENTLY OF AN OUTLET BOX."**

Luminaires that consist of separate wired luminaire sections are marked on each separable part with correlation markings.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) or the words "HID" or "Wired HID Section" adjacent to the Certification Mark.

High-intensity-discharge Surface-mounted Luminaires Certified for Canada (IEXT7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see High-intensity-discharge-lamp-type Luminaires Certified for Canada (IEWX7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, ''Luminaires.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Luminaire.''

The Listing Mark for this category requires the use of a holographic label.

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High-intensity-discharge Recessed Luminaires Certified for Canada (IEXZ7)

GENERAL

This category covers luminaires intended for installation in recessed cavities in walls, ceilings and similar locations in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

TYPES OF RECESSED LUMINAIRES

TYPE IC LUMINAIRE — Luminaires marked **"TYPE IC"** may be installed such that insulation and other combustible materials are in contact with, and over the top of, the luminaire.

TYPE NON-IC LUMINAIRE — Recessed luminaires, except those identified as Type IC or for use in concrete only, are intended to be installed in an uninsulated or insulated ceiling (or wall), with all insulation kept a minimum distance of 3 in. (76 mm) from the sides of the luminaire and not placed over the luminaire such that it would entrap the heat produced by the luminaire. Other combustible materials are spaced, except at the points of support, at least 1/2 in. (13 mm) from the luminaire.

Type Non-IC luminaires are provided with thermal protection to deactivate the lamp(s) should insulation be placed over or in contact with the luminaire.

For proper heat dissipation, Type Non-IC luminaires are intended to be installed in a cavity as follows: If not marked with any spacing information, the luminaire is intended to be installed not closer than 1/2 in. (13 mm) from any surface forming the cavity behind the recessed portion of the luminaire and not closer than 1 in. (25 mm) from adjacent luminaires.

Luminaires intended for marked-spacing installation are marked **"INSTALL WITH MINIMUM SPACINGS BETWEEN A) CENTER-TO-CENTER OF ADJACENT LUMINAIRES: ___MM (___INCHES); B) TOP OF LUMINAIRE AND AN OVERHEAD BUILDING MEMBER: ___MM (___INCHES); AND C) LUMINAIRE CENTER TO SIDE BUILDING MEMBER: ___MM (___ INCHES)."** The marked-spacing luminaire should be installed in a cavity that maintains these minimum spacings.

Individual obstructions, such as ceiling joists, barriers to maintain thermal insulation 3 in. from the luminaire, and other structural support members may be in the cavity area above the luminaire, provided (1) they are not closer than 1/2 in. (13 mm) from any part of the luminaire (except for points used in support of the luminaire), and (2) they do not seal off the luminaire from the remaining portion of the cavity. More than one marked-spacing luminaire may be installed in the same cavity, provided the marked spacings are maintained from each luminaire to cavity sidewalls and to adjacent luminaires. Spacings between adjacent luminaires are measured center to center, based upon the geometric center of the luminaire at the ceiling line.

CONCRETE-ONLY LUMINAIRE — A recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked **"FOR USE IN CONCRETE ONLY."**

A Type IC or non-IC luminaire that is sealed to prevent the entry of concrete may be installed in concrete providing it is marked **"SUITABLE FOR USE IN POURED CONCRETE."**

SUSPENDED-CEILING LUMINAIRE — All recessed luminaires, except those marked for use in concrete only, are suitable for use in suspended ceilings and may be marked **"SUITABLE FOR SUSPENDED CEILING."**

Recessed luminaires intended for use in suspended ceilings and provided with integral clips are marked for use with particular grid systems. Instructions for using clips to secure the luminaire to the grid are provided with the luminaire. The ability of these clips to withstand seismic disturbances has not been investigated.

High-intensity-discharge Recessed Luminaires Certified for Canada (IEXZ7)−*Continued*

GROUND-MOUNTED RECESSED LUMINAIRE — A ground-mounted recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked **"SUITABLE FOR GROUND-MOUNTED RECESSED ONLY."**

A ground-mounted recessed luminaire suitable for installation in non-fire-resistant mediums, such as a wooden deck, is marked **"SUITABLE FOR GROUND-MOUNTED RECESSED."**

LUMINAIRE INSTALLATION INSTRUCTIONS

All recessed luminaires, except those marked **"FOR USE IN POURED CONCRETE ONLY,"** are marked **"BLINKING LIGHT OF THIS THERMALLY PROTECTED LUMINAIRE MAY INDICATE OVERHEATING."**

Luminaires that produce temperatures in excess of 90°C at points of mounting to the building structure are marked **"INSTALL IN BUILDINGS OF FIRE-RESISTIVE CONSTRUCTION – MOUNT ON NON-COMBUSTIBLE MATERIAL."**

Only those luminaires with an integral junction box or wiring compartment marked **"MAXIMUM OF NO. __ AWG BRANCH CIRCUIT CONDUCTOR SUITABLE FOR __ C PERMITTED IN BOX,"** have been investigated for any heat contribution added by branch-circuit conductors.

Luminaires which, by their construction, do not permit access to or inspection of field-wiring connections from the front of the luminaire, after installation, are marked **"ACCESS ABOVE CEILING REQUIRED"** or **"ACCESS BEHIND WALL REQUIRED."**

Luminaires provided with polymeric recessed housings are marked **"FOR USE IN ONE- AND TWO-FAMILY DWELLINGS ONLY"** and **"FOR USE IN NON-FIRE RATED INSTALLATIONS."**

Luminaires that consist of (1) a luminaire housing and trims or (2) a rough-in section and finishing sections are marked on each separable part with correlation markings:

(1) For luminaire housing and trims, the housing is marked **"USE WITH [manufacturer's name] [catalog number] TRIMS"** and each trim is marked with the manufacturer's name and catalog number;

(2) For rough-in and finishing sections, the rough-in section is marked **"ROUGH-IN SECTION FOR USE WITH FINISHING SECTION,"** where the blank spaces are filled in with a) type or catalog number or b) refers to the type or catalog number located elsewhere on the label. The finishing section is marked in the same manner stating **"FINISHING SECTION FOR USE WITH ROUGH-IN SECTION."**

Luminaires that consist of separate wired luminaire sections are marked on each separable part with correlation markings.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) or the words ''Recessed HID,'' ''Recessed HID Type IC,'' ''Rough-In Section for Recessed HID,'' ''Rough-In Section for Recessed HID Type IC,'' ''Finishing Section for Recessed HID'' or ''Wired Recessed HID Section'' adjacent to the Certification Mark.

ADDITIONAL INFORMATION

For additional information, see High-intensity-discharge-lamp-type Luminaires Certified for Canada (IEWX7) Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, ''Luminaires.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Luminaire.''

The Listing Mark for this category requires the use of a holographic label.

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INCANDESCENT-LAMP-TYPE LUMINAIRES CERTIFIED FOR CANADA (IEYV7)

GENERAL

This category covers surface and recessed luminaires containing only incandescent lamps.

Incandescent-lamp-type Luminaires Certified for Canada (IEYV7)−*Continued*

Luminaires provided with electrical loads other than lampholders directly connected to a 120 V, 2-wire branch circuit supply are marked with the total current rating for the luminaire, excluding any convenience receptacle provided.

Luminaires provided with medium- or mogul-base lampholders are investigated for use with Types A or PS lamps unless marked otherwise. Also, some luminaires are only suitable for use with specific lamp types and are so marked.

A luminaire intended for use with a tungsten-halogen lamp and that does not require an additional lamp containment barrier is marked **"USE LAMP MARKED 'SUITABLE FOR USE IN OPEN LUMINAIRES'."**

Luminaires are not intended for use with infrared or grow lamps unless so marked.

RELATED PRODUCTS

Luminaires that contain fluorescent or high-intensity-discharge lamps in combination with incandescent lamps are covered under Fluorescent-lamp-type Luminaires Certified for Canada (IEUT7) and High-intensity-discharge-lamp-type Luminaires Certified for Canada (IEWX7), respectively.

Luminaires intended for connection only to a 24 V or less input and for use in recreational vehicles are covered under Extr-low-voltage Luminaires for Recreational Vehicle Use Certified for Canada (IFDQ7).

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Incandescent Surface-mounted Luminaires Certified for Canada (IEZR7)

GENERAL

This category covers surface-mounted luminaires, including floor-, wall-, ceiling-, undercabinet-, cabinet- and pole-mounted luminaires.

Ceiling-mounted luminaires include cord-, stem-, chain- and cable-suspended luminaires, in addition to outlet box-mounted luminaires.

SPECIAL-USE LUMINAIRES

Luminaires suitable for continuous operation in an elevated ambient, such as a boiler room, foundry, etc., are marked **"SUITABLE FOR OPERATION IN AMBIENTS NOT EXCEEDING __ C,"** where the blank is filled in with intended elevated ambient.

Cabinet luminaires investigated for only surface mounting inside a cabinet and not intended for recessed mounting are marked **"SUITABLE FOR SURFACE MOUNTING ONLY."** Cabinet luminaires are not intended for installation in recessed walls or ceilings.

LUMINAIRE INSTALLATION MARKINGS

If the required rating of the field wiring supplying the luminaire requires the installer to push the supply conductors from the luminaire into the outlet box, the luminaire is marked **"PUSH CONDUCTORS INTO JUNCTION BOX."**

All ceiling- and wall-mounted luminaires are acceptable for mounting on an insulated ceiling or wall. Exceptions: (1) luminaires obviously not designed for ceiling use or if marked **"WALL MOUNT ONLY"** are not acceptable for mounting on ceilings, and (2) luminaires marked **"NON-COMBUSTIBLE SURFACE ONLY."**

Luminaires intended for undercabinet mounting are marked **"SUITABLE FOR UNDER-CABINET MOUNTING."**

Luminaires intended for continuous-row mounting are marked **"SUITABLE FOR CONTINUOUS ROW MOUNTING."**

Luminaires weighing more than 11.3 kg (25 lbs) and intended for outlet-box connection are marked **"THIS LUMINAIRE MUST BE MOUNTED OR SUPPORTED INDEPENDENTLY OF AN OUTLET BOX."**

Cabinet luminaires have been investigated for mounting in accordance with the clearances marked on the product. Cabinet luminaires not marked with clearances may be mounted as close to any surface as permitted by the housing, an integral mounting flange, bracket or spacer.

Cabinet luminaires of all types should not be located less than 30.5 cm (12 in.) apart and should be allowed a 13 mm (1/2 in.) minimum clearance between the top and any horizontal surface, unless the instructions indicate a lesser spacing.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) or the word "Incandescent" adjacent to the Certification Mark.

RELATED PRODUCTS

Undercabinet portable luminaires of the attachment-plug equipped, cord-connected type or direct-plug-in type are covered under Luminaires, Portable Certified for Canada (QOWZ7).

Incandescent Surface-mounted Luminaires Certified for Canada (IEZR7)−*Continued*

Portable cabinet luminaires of the attachment-plug equipped, cord-connected type or direct-plug-in type are covered under Portable Cabinet Luminaires Certified for Canada (QOVJ7).

ADDITIONAL INFORMATION

For additional information, see Incandescent-lamp-type Luminaires Certified for Canada (IEYV7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires."

The basic standard used to investigate undercabinet and cabinet luminaires in this category is CSA-C22.2 No. 9.0, "General Requirements for Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Luminaire."

The Listing Mark for this category requires the use of a holographic label.

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Incandescent Recessed Luminaires Certified for Canada (IEZX7)

GENERAL

This category covers luminaires intended for installation in recessed cavities in walls, ceilings and similar locations in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

SPECIAL-USE LUMINAIRES

Recessed-type luminaires suitable for optional use with infrared heating lamps are marked and rated for 250 W reflector-type lamps. Recessed units suitable only for use with one or more infrared heating lamps are covered under Air Heaters, Room, Fixed and Location-dedicated Certified for Canada (KKWS7).

TYPES OF RECESSED LUMINAIRES

TYPE IC LUMINAIRE — Luminaires marked **"TYPE IC"** may be installed such that insulation and other combustible materials are in contact with, and over the top of, the luminaire. Type IC luminaires are provided with thermal protection to deactivate the lamp should the luminaire be mislamped.

INHERENTLY-PROTECTED LUMINAIRE — A recessed luminaire which does not exceed temperatures greater than 90°C on outside surfaces even when covered with insulation and mislamped or overlapped is identified by being marked **"INHERENTLY PROTECTED."**

TYPE NON-IC LUMINAIRE — Recessed luminaires, except those identified as Type IC or for use in concrete only, are intended to be installed in an uninsulated or insulated ceiling (or wall), with all insulation kept a minimum distance of 3 in. (76 mm) from the sides of the luminaire and not placed over the luminaire such that it would entrap the heat produced by the luminaire. Other combustible materials are spaced, except at the points of support, at least 1/2 in. (13 mm) from the luminaire.

Type Non-IC luminaires are provided with thermal protection to deactivate the lamp(s) should insulation be placed over or in contact with the luminaire.

For proper heat dissipation, Type Non-IC luminaires are intended to be installed in a cavity as follows: If not marked with any spacing information, the luminaire is intended to be installed not closer than 1/2 in. (13 mm) from any surface forming the cavity behind the recessed portion of the luminaire and not closer than 1 in. (25 mm) from adjacent luminaires.

Luminaires intended for marked-spacing installation are marked **"INSTALL WITH MINIMUM SPACINGS BETWEEN A) CENTER-TO-CENTER OF ADJACENT LUMINAIRES: ___MM (___ INCHES); B) TOP OF LUMINAIRE AND AN OVERHEAD BUILDING MEMBER: ___MM (___ INCHES); AND C) LUMINAIRE CENTER TO SIDE BUILDING MEMBER: ___MM (___ INCHES)."** The marked-spacing luminaire is to be installed in a cavity that maintains these minimum spacings.

Individual obstructions, such as ceiling joists, barriers to maintain thermal insulation 3 in. (76 mm) from the luminaire and other structural support members may be in the cavity area above the luminaire provided (1) they are not closer than 1/2 in. (13 mm) from any part of the luminaire (except for points used in support of the luminaire), and (2) they do not

Incandescent Recessed Luminaires Certified for Canada (IEZX7)−*Continued*

seal off the luminaire from the remaining portion of the cavity. More than one marked-spacing luminaire may be installed in the same cavity, provided the marked spacings are maintained from each luminaire to cavity sidewalls and to adjacent luminaires. Spacings between adjacent luminaires are measured center to center, based upon the geometric center of the luminaire at the ceiling line.

CONCRETE-ONLY LUMINAIRE — A recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked **"FOR USE IN CONCRETE ONLY."**

A Type IC or Non-IC luminaire sealed to prevent the entry of concrete may be installed in concrete providing it is marked **"SUITABLE FOR USE IN POURED CONCRETE."**

SUSPENDED-CEILING LUMINAIRE — All recessed luminaires except those marked for use in concrete only are suitable for use in suspended ceilings and may be marked **"SUITABLE FOR SUSPENDED CEILING."**

Recessed luminaires intended for use in suspended ceilings and provided with integral clips are marked for use with particular grid systems. Instructions for using clips to secure the luminaire to the grid are provided with the luminaire. The ability of these clips to withstand seismic disturbances has not been investigated.

GROUND-MOUNTED RECESSED LUMINAIRE — A ground-mounted recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked **"SUITABLE FOR GROUND-MOUNTED RECESSED ONLY."**

A ground-mounted recessed luminaire that is suitable for installation in non-fire-resistant mediums such as a wooden deck is marked **"SUITABLE FOR GROUND-MOUNTED RECESSED."**

LUMINAIRE INSTALLATION MARKINGS

All recessed luminaires except those marked **"FOR USE IN POURED CONCRETE ONLY"** are marked **"BLINKING LIGHT OF THIS THERMALLY PROTECTED LUMINAIRE MAY INDICATE OVERHEATING."**

Luminaires that produce temperatures in excess of 90°C at points of mounting to the building structure are marked **"INSTALL IN BUILDINGS OF FIRE RESISTANT CONSTRUCTION."**

Only those luminaires with an integral junction box or wiring compartment marked **"MAXIMUM OF NO. __ AWG BRANCH CIRCUIT CONDUCTOR SUITABLE FOR __ C PERMITTED IN BOX,"** have been investigated for any heat contribution added by branch circuit conductors.

Luminaires which, by their construction, do not permit access to or inspection of field wiring connections from the front of the luminaire, after installation, are marked **"ACCESS ABOVE CEILING REQUIRED"** or **"ACCESS BEHIND WALL REQUIRED."**

Luminaires that are provided with polymeric recessed housings are marked **"FOR USE IN ONE- AND TWO-FAMILY DWELLINGS ONLY"** and **"FOR USE IN NON-FIRE RATED INSTALLATIONS."**

Luminaires that consist of (1) a luminaire housing and trims or (2) a rough-in section and finishing sections are marked on each separable part with correlation markings:

(1) (1) For luminaire housing and trims, the housing is marked **"USE WITH [manufacturer's name] [catalog number] TRIMS"** and each trim is marked with the manufacturer's name and catalog number.

(2) (2) For rough-in and finishing sections, the rough-in section is marked **"ROUGH-IN SECTION FOR USE WITH FINISHING SECTION,"** where the blank spaces are filled in with a) type or catalog number or b) refers to the type or catalog number located elsewhere on the label. The finishing section is marked in the same manner stating **"FINISHING SECTION FOR USE WITH ROUGH-IN SECTION."**

Luminaires that consist of separate wired luminaire sections are marked on each separable part with correlation markings.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) or the words "Recessed Incandescent," "Recessed Incandescent Type IC," "Rough-In Section for Recessed Incandescent," "Rough-In Section for Recessed Incandescent Type IC" or "Finishing Section for Recessed Fixture" adjacent to the Certification Mark.

RELATED PRODUCTS

See Incandescent Recessed Luminaires, Convertible, Non-IC/IC Certified for Canada (IFAH7).

ADDITIONAL INFORMATION

For additional information, see Incandescent-lamp-type Luminaires Certified for Canada (IEYV7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Incandescent Recessed Luminaires Certified for Canada (IEZX7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Luminaire."

The Listing Mark for this category requires the use of a holographic label.

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Incandescent Recessed Luminaires, Convertible, Non-IC/IC Certified for Canada (IFAH7)

GENERAL

This category covers luminaires for installation in recessed cavities in walls, ceilings and similar locations in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These products may be installed in either IC or non-IC applications. The same rough-in section or luminaire housing is used for both IC and non-IC applications. The choice of finishing section/trim and light source (lamp) determine whether the completed luminaire is suitable for Type IC installations or non-IC installations.

Details for making the proper choice of finishing section/trim and lamp appropriate for the application are contained in the installation instructions packaged with the rough-in section/luminaire housing. All luminaires employ a thermal protective device to deactivate the lamp(s) in the event increased temperature conditions result where the installation instructions are not followed.

TYPE IC INSTALLATIONS — Refer to Incandescent Recessed Luminaires Certified for Canada (IEZX7) sections entitled "Type IC Luminaires."

TYPE NON-IC INSTALLATIONS — Refer to Incandescent Recessed Luminaires Certified for Canada (IEZX7) sections entitled "Type Non-IC Luminaires."

LUMINAIRE INSTALLATION MARKINGS

The rough-in section or the luminaire housing of a convertible recessed luminaire is marked with the following two statements:

A. **"BLINKING LIGHT OF THIS THERMALLY PROTECTED LUMINAIRE MAY INDICATE OVERHEATING"**

B. **"DO NOT INSTALL INSULATION WITHIN 76 MM (3 IN.) OF ANY PART OF THE LUMINAIRE"**

The marking in item B is on a peel-off label that is removed when the luminaire is installed in a Type IC installation.

Luminaires that consist of (1) a luminaire housing and trims or (2) a rough-in section and finishing sections are marked on each separable part with correlation markings:

(1) For luminaire housing and trims, the housing is marked **"USE WITH [manufacturer's name] [catalog number] TRIMS,"** and each trim is marked with the manufacturer's name and catalog number.

(2) For rough-in and finishing sections, the rough-in section is marked **"ROUGH-IN __ SECTION FOR CONVERTIBLE RECESSED LUMINAIRE"** and a correlation marking for the trims **"TYPE IC TRIMS/FINISHING SECTIONS: AA, BB, CC, etc."** or **"TYPE IC/NON-IC TRIMS/FINISHING SECTIONS: AA, BB, CC, etc."** The finishing section is marked in the same manner stating **"FINISHING SECTION FOR USE WITH ROUGH-IN SECTION ___."**

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) or the words "Recessed Incandescent Convertible Non-IC/IC," "Recessed Incandescent Convertible Non-IC/IC Rough-In Section" or "Recessed Incandescent Convertible Non-IC/IC Finishing Section" adjacent to the Certification Mark.

RELATED PRODUCTS

See Incandescent Recessed Luminaires Certified for Canada (IEZX7).

ADDITIONAL INFORMATION

For additional information, see Incandescent-lamp-type Luminaires Certified for Canada (IEYV7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Incandescent Recessed Luminaires, Convertible, Non-IC/IC Certified for Canada (IFAH7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ″Luminaire.″

The Listing Mark for this category requires the use of a holographic label.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

LIGHT-EMITTING-DIODE LUMINAIRES CERTIFIED FOR CANADA (IFAK7)

GENERAL

This category covers surface- and recessed-lighting luminaires containing only light-emitting-diode (LED) light sources.

Luminaires are not intended for use with infrared or ultraviolet LED light sources unless so marked.

RELATED PRODUCTS

Luminaires that contain incandescent lamps in combination with an LED light source are covered under Incandescent Surface-mounted Luminaires Certified for Canada (IEZR7), Incandescent Recessed Luminaires Certified for Canada (IEZX7) and Incandescent Recessed Luminaires, Convertible, Non-IC/IC Certified for Canada (IFAH7).

Luminaires that contain fluorescent lamps in combination with an LED light source are covered under Fluorescent Surface-mounted Luminaires Certified for Canada (IEUZ7) and Fluorescent Recessed Luminaires Certified for Canada (IEVV7).

Luminaires that contain high-intensity-discharge lamps in combination with an LED light source are covered under High-intensity-discharge Surface-mounted Luminaires Certified for Canada (IEXT7) and High-intensity-discharge Recessed Luminaires Certified for Canada (IEXZ7).

Luminaires with an LED light source intended to be connected to a non-integral power source rated 30 V ac (60 V dc) or less are covered under Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7).

Luminaires with an LED light source connected to a nonintegral power source rated 15 V ac (30 V dc) or less and intended to be part of a low-voltage landscape lighting system are covered under Landscape Lighting Systems, Low Voltage Certified for Canada (IFDH7).

Luminaires with an LED light source intended for connection only to a 24 V or less input and for use in recreational vehicles are covered under Extra-low-voltage Luminaires for Recreational Vehicle Use Certified for Canada (IFDQ7).

Light-emitting-diode Surface-mounted Luminaires Certified for Canada (IFAM7)

GENERAL

This category covers surface-mounted luminaires, including floor-, wall-, ceiling- and pole-mounted luminaires.

Ceiling-mounted luminaires include cord-, stem-, chain- and cable-suspended luminaires, in addition to outlet-box-mounted luminaires.

SPECIAL-USE LUMINAIRES

Luminaires suitable for continuous operation in an elevated ambient, such as a boiler room, foundry, etc., are marked ″SUITABLE FOR OPERATION IN AMBIENT NOT EXCEEDING __ C,″ where the blank is filled in with the intended elevated ambient.

LUMINAIRE INSTALLATION MARKINGS

If the required rating of the field wiring supplying the luminaire requires the installer to push the supply conductors from the luminaire into the outlet box, the luminaire is marked ″PUSH CONDUCTORS INTO JUNCTION BOX.″

All ceiling- and wall-mounted luminaires are acceptable for mounting on an insulated ceiling or wall. Exceptions: (1) luminaires obviously not designed for ceiling use or if marked ″WALL MOUNT ONLY″ are not acceptable for mounting on ceilings, and (2) luminaires marked ″NON-COMBUSTIBLE SURFACE ONLY.″

Luminaires intended for continuous-row mounting are marked ″SUITABLE FOR CONTINUOUS ROW MOUNTING.″

Wall-mounted luminaires weighing more than 11.3 kg (25 lbs) and ceiling-mounted luminaires weighing more than 22.7 kg (50 lbs) intended for outlet box connection are marked ″THIS LUMINAIRE MUST BE MOUNTED OR SUPPORTED INDEPENDENTLY OF AN OUTLET BOX.″

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number or similar designation.

Light-emitting-diode Surface-mounted Luminaires Certified for Canada (IFAM7)−*Continued*

RELATED PRODUCTS

Cord-connected undercabinet light-emitting-diode (LED) luminaires with an attachment plug or a direct-plug-in power supply are covered under Light-emitting-diode Luminaires, Portable Certified for Canada (QOVZ7).

LED cabinet luminaires are covered under Portable Cabinet Light-emitting-diode Luminaires Certified for Canada (QOVA7).

ADDITIONAL INFORMATION

For additional information, see Light-emitting-diode Luminaires Certified for Canada (IFAK7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, ″Luminaires.″

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ″Luminaire.″

The Listing Mark for this category requires the use of a holographic label.

* *

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Light-emitting-diode Recessed Luminaires Certified for Canada (IFAO7)

GENERAL

This category covers luminaires intended for installation in recessed cavities in walls, ceilings and similar locations in accordance with Article 410, Parts XI and XII of CAN/CSA-C22.1, ″Canadian Electrical Code, Part I.″

RECESSED LUMINAIRE TYPES

Type IC Luminaire — Luminaires marked ″TYPE IC″ may be installed such that insulation and other combustible materials are in contact with, and over the top of, the luminaire. Type IC luminaires are provided with thermal protection to deactivate the lamp should the luminaire be mislamped.

Inherently-protected Luminaire — A recessed luminaire that does not exceed temperatures greater than 90°C on outside surfaces even when covered with insulation and mislamped or overlapped is identified by the marking ″INHERENTLY PROTECTED.″

Type Non-IC Luminaire — Recessed luminaires, except those identified as Type IC or for use in concrete only, are intended to be installed in an uninsulated or insulated ceiling (or wall), with all insulation kept a minimum distance of 76 mm (3 in.) from the sides of the luminaire and not placed over the luminaire such that it would entrap the heat produced by the luminaire. Other combustible materials are spaced, except at the points of support, at least 13 mm (1/2 in.) from the luminaire.

Type Non-IC luminaires are provided with thermal protection to deactivate the light source(s) should insulation be placed over or in contact with the luminaire.

For proper heat dissipation, Type Non-IC luminaires are intended to be installed in a cavity as follows: If not marked with any spacing information, the luminaire is intended to be installed not closer than 13 mm (1/2 in.) from any surface forming the cavity behind the recessed portion of the luminaire and not closer than 25 mm (1 in.) from adjacent luminaires.

Luminaires intended for marked-spacing installation are marked ″INSTALL WITH MINIMUM SPACINGS BETWEEN A) CENTER-TO-CENTER OF ADJACENT LUMINAIRES: ___ MM (___ INCHES); B) TOP OF LUMINAIRE AND AN OVERHEAD BUILDING MEMBER: ___ MM (___ INCHES); AND C) LUMINAIRE CENTER TO SIDE BUILDING MEMBER: ___ MM (___ INCHES).″ The marked-spacing luminaire is intended to be installed in a cavity that maintains these minimum spacings.

Individual obstructions, such as ceiling joists, barriers to maintain thermal insulation 76 mm (3 in.) from the luminaire, and other structural support members may be in the cavity area above the luminaire, provided (1) they are not closer than 13 mm (1/2 in.) from any part of the luminaire (except for points used in support of the luminaire), and (2) they do not seal off the luminaire from the remaining portion of the cavity. More than one marked-spacing luminaire may be installed in the same cavity, provided the marked spacings are maintained from each luminaire to cavity

Light-emitting-diode Recessed Luminaires Certified for Canada (IFAO7)−*Continued*

sidewalls and to adjacent luminaires. Spacings between adjacent luminaires are measured center to center, based upon the geometric center of the luminaire at the ceiling line.

Concrete-only Luminaire — A recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked "FOR USE IN CONCRETE ONLY."

A Type IC or Non-IC luminaire sealed to prevent the entry of concrete may be installed in concrete providing it is marked "SUITABLE FOR USE IN POURED CONCRETE."

Suspended-ceiling Luminaire — All recessed luminaires except those marked for use in concrete only are suitable for use in suspended ceilings and may be marked "SUITABLE FOR SUSPENDED CEILING."

Recessed luminaires intended for use in suspended ceilings and provided with integral clips are marked for use with particular grid systems. Instructions for using clips to secure the luminaire to the grid are provided with the luminaire. The ability of these clips to withstand seismic disturbances has not been investigated.

Ground-mounted Recessed Luminaire — A ground-mounted recessed luminaire exempted from being thermally protected because it is intended for use only in a fire-resistant medium is marked "SUITABLE FOR GROUND-MOUNTED RECESSED ONLY."

A ground-mounted recessed luminaire suitable for installation in non-fire-resistant mediums, such as a wooden deck, is marked "SUITABLE FOR GROUND-MOUNTED RECESSED."

LUMINAIRE INSTALLATION MARKINGS

All recessed luminaires, except those marked "FOR USE IN POURED CONCRETE ONLY," are marked "BLINKING LIGHT OF THIS THERMALLY PROTECTED LUMINAIRE MAY INDICATE OVERHEATING."

Luminaires that produce temperatures in excess of 90°C at points of mounting to the building structure are marked "INSTALL IN BUILDINGS OF FIRE RESISTANT CONSTRUCTION."

Only those luminaires with an integral junction box or wiring compartment marked "MAXIMUM OF NO. __ AWG BRANCH CIRCUIT CONDUCTOR SUITABLE FOR __ C PERMITTED IN BOX," have been investigated for any heat contribution added by branch circuit conductors.

Luminaires which, by their construction, do not permit access to or inspection of field-wiring connections from the front of the luminaire, after installation, are marked "ACCESS ABOVE CEILING REQUIRED" or "ACCESS BEHIND WALL REQUIRED."

Luminaires provided with polymeric recessed housings are marked "FOR USE IN ONE- AND TWO-FAMILY DWELLINGS ONLY" and "FOR USE IN NON-FIRE RATED INSTALLATIONS."

Luminaires that consist of (1) a luminaire housing and trims, or (2) a rough-in section and finishing sections are marked on each separable part with correlation markings:

(1) For luminaire housing and trims, the housing is marked "USE WITH [manufacturer's name] [catalog number] TRIMS" and each trim is marked with the manufacturer's name and catalog number.
(2) For rough-in and finishing sections, the rough-in section is marked "ROUGH-IN SECTION FOR USE WITH FINISHING SECTION," where the blank spaces are filled in with a) type or catalog number or b) refers to the type or catalog number located elsewhere on the label. The finishing section is marked in the same manner stating "FINISHING SECTION FOR USE WITH ROUGH-IN SECTION."

Luminaires that consist of separate wired luminaire sections are marked on each separable part with correlation markings.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number or similar designation.

ADDITIONAL INFORMATION

For additional information, see Light-emitting-diode Luminaires Certified for Canada (IFAK7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Luminaire."

The Listing Mark for this category requires the use of a holographic label.

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Light-emitting-diode Recessed Luminaires Certified for Canada (IFAO7)−*Continued*

LIGHT-EMITTING-DIODE RETROFIT LUMINAIRE CONVERSION KITS CERTIFIED FOR CANADA (IFAR7)

GENERAL

This category covers light-emitting-diode (LED) retrofit kits intended for field installation in certified luminaires and office-furnishing lights.

This category does not cover retrofit reflector kits and luminaire conversion lamps intended for direct replacement of existing lamps without the need for modification, rewiring or component replacement in the luminaire.

The retrofit kits consist of LED light sources, installation instructions, subassemblies, luminaire marking labels, and assembly aids (where appropriate) to facilitate the replacement of the existing light source in complete luminaires. The retrofit installation may require modifications to the luminaire in accordance with the installation instructions provided with the retrofit kits.

The LED retrofit kits have been investigated to determine that, when installed in accordance with the manufacturer's instructions, they do not adversely affect the operation of the luminaire. A luminaire that is modified so it can no longer accept the original lamp has a label provided by the retrofit kit manufacturer affixed to the luminaire where visible during relamping that indicates the luminaire has been modified and can no longer operate the originally-intended lamp(s).

LUMINAIRE MARKINGS

LED retrofit luminaire conversion kits that permit the insertion of the original lamp types are provided with a marking for installation by the kit installer on the retrofitted luminaire. This marking is visible during relamping and states, "This luminaire has been modified and can no longer operate the originally intended lamp," and additionally identifies the replacement LED lamp type/model to be used, together with the manufacturer's name and ordering information.

LED retrofit luminaire conversion kits using linear tubular LED lamp conversions are provided with a marking for installation by the kit installer visible during relamping that indicates in text or wiring diagram how the supply connections are made to the lampholders.

RELATED PRODUCTS

Retrofit reflector kits intended for installation on fluorescent luminaires are covered under Luminaire Conversions, Retrofit Certified for Canada (IEUQ7).

Retrofit devices used to convert incandescent exit luminaires to fluorescent exit luminaires are covered under Exit Sign Conversion Kits Certified for Canada (FWCF7).

LED light sources intended to replace fluorescent lamps where it is not necessary to modify the luminaire are covered under Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CSA Technical Information Letter No. B-79 (4-28-2010), "Supplemental Requirements for Retrofitted Luminaires and LED Retrofit Kits for Installation into Previously Installed Luminaires," in addition to CSA-C22.2 No. 250.0 (2008), "Luminaires."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

LED RETROFIT LUMINAIRE CONVERSION
FOR USE ONLY WITH (+)
IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THIS RETROFIT KIT
Control No.

(+) **PERMANENTLY-CONNECTED LUMINAIRES**, **FLUORESCENT LUMINAIRES**, **INCANDESCENT LUMINAIRES**, **HID LUMINAIRES**, **OFFICE-FURNISHING LIGHTS** and/or **PORTABLE LUMINAIRES**; or indicate the specific luminaire model(s) and luminaire manufacturer(s)

or

Light-emitting-diode Retrofit Luminaire Conversion Kits Certified for Canada (IFAR7)−*Continued*

LED RETROFIT LUMINAIRE CONVERSION
FOR USE ONLY WITH PRODUCTS DESCRIBED AND INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THIS RETROFIT KIT
Control No.
*** ***

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LIGHT-EMITTING-DIODE RETROFIT LUMINAIRE CONVERSION KITS FOR COMMERCIAL REFRIGERATORS AND FREEZERS CERTIFIED FOR CANADA (IFAS7)

GENERAL

This category covers light-emitting-diode (LED) retrofit kits intended for field installation in certified commercial refrigerators and freezers.

This category does not cover luminaire conversion lamps intended for direct replacement of existing lamps without the need for modification, rewiring or component replacement in the commercial refrigerator or freezer.

The retrofit kits consist of LED light sources, installation instructions, subassemblies, end-product luminaire marking labels, and assembly aids (where appropriate) to facilitate the replacement of the existing light source in complete commercial refrigerators and freezers. The retrofit installation may require modifications to the end product in accordance with the installation instructions provided with the retrofit kits.

The LED retrofit kits have been investigated to determine that, when installed in accordance with the manufacturer's instructions, they do not adversely affect the operation of the commercial refrigerator or freezer. A luminaire within the end product that is modified so it can no longer accept the original lamp has a label provided by the retrofit kit manufacturer affixed to the end product where visible during relamping that indicates the luminaire has been modified and can no longer operate the originally-intended lamp(s).

LUMINAIRE MARKINGS

LED retrofit luminaire conversion kits that permit the insertion of the original lamp types are provided with a marking for installation by the kit installer on the end product. This marking is visible during relamping and states, ''This luminaire has been modified and can no longer operate the originally intended lamp,'' and additionally identifies the replacement LED lamp type/model to be used, together with the manufacturer's name and ordering information.

LED retrofit luminaire conversion kits using linear tubular LED lamp conversions are provided with a marking for installation by the kit installer visible during relamping that indicates in text or wiring diagram how the supply connections are made to the lampholders.

RELATED PRODUCTS

LED retrofit kits intended for field installation in UL-certified luminaires or office-furnishing lights are covered under Light-emitting-diode Retrofit Luminaire Conversion Kits Certified for Canada (IFAR7).

Retrofit reflector kits intended for installation on fluorescent luminaires are covered under Luminaire Conversions, Retrofit Certified for Canada (IEUQ7).

Retrofit devices used to convert incandescent exit luminaires to fluorescent exit luminaires are covered under Exit Sign Conversion Kits Certified for Canada (FWCF7).

LED light sources intended to replace fluorescent lamps where it is not necessary to modify the luminaire are covered under Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV7).

Optional accessories intended for installation in commercial refrigerators and freezers are covered under Refrigeration Equipment Accessories Certified for Canada (SOSR7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CSA Technical Information Letter No. B-79 (4-28-10), ''Supplemental Requirements for Retrofitted Luminaires and LED Retrofit Kits for Installation into Previously Installed Luminaires,'' in addition to CSA-C22.2 No. 250.0 (2008), ''Luminaires,'' and CSA-C22.2 No. 120 (1991), ''Refrigeration Equipment.''

Light-emitting-diode Retrofit Luminaire Conversion Kits for Commercial Refrigerators and Freezers Certified for Canada (IFAS7)−*Continued*

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

LED RETROFIT LUMINAIRE CONVERSION
FOR USE ONLY WITH (+)
IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THIS RETROFIT KIT
Control No.

(+) Specific commercial refrigerator or freezer model(s) and manufacturer(s)

or

LED RETROFIT LUMINAIRE CONVERSION
FOR USE ONLY WITH COMMERCIAL REFRIGERATORS AND FREEZERS
IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THIS RETROFIT KIT
Control No.
*** ***

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

SPECIAL-PURPOSE LUMINAIRES CERTIFIED FOR CANADA (IFAT7)

Canopy Luminaires Certified for Canada (IFAW7)

GENERAL

This category covers luminaires for installation in cavities in outdoor canopies and marquees such as used over gas station pumping islands and similar locations in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These luminaires are not intended for indoor use or in outdoor installations where thermal insulation would be installed.

PRODUCT MARKINGS

Canopy luminaires are marked **"CANOPY LUMINAIRE – NOT THERMALLY PROTECTED."**

All luminaires are suitable for wet locations and may be subjected to water and precipitation from the back side unless marked **"FOR COVERED CEILING MOUNT ONLY."**

A recessed canopy luminaire is intended to be installed not closer than 1/2 in. (13 mm) from any surface forming the cavity behind the recessed portion of the luminaire and not closer than 1 in. (25 mm) from adjacent luminaires. A recessed canopy luminaire marked **"OPEN CEILING MOUNT ONLY"** is intended for an uncovered ceiling only.

All luminaires bear a model, catalog or series number (or similar designation) or the words ''Incandescent Canopy,'' ''Fluorescent Canopy'' or ''HID Canopy,'' or other appropriate product type adjacent to the Certification Mark.

RELATED PRODUCTS

Luminaires intended for recessed indoor use, or areas where thermal insulation could be installed, are covered under Fluorescent Recessed Luminaires Certified for Canada (IEVV7), High-intensity-discharge Recessed Luminaires Certified for Canada (IEXZ7) and Incandescent Recessed Luminaires Certified for Canada (IEZX7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, ''Luminaires.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Luminaire.''

The Listing Mark for this category requires the use of a holographic label.

Canopy Luminaires Certified for Canada (IFAW7)−*Continued*

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Electric-discharge Lighting Systems, Cold Cathode Certified for Canada (IFAY7)

USE

This category covers lighting systems that incorporate electric discharge tubing with ferrule type end caps, commonly referred to as cold cathode lighting, which is electrically connected to the output of a transformer, power supply or ballast by ferrule type lampholders. Each transformer or power supply in the system is not rated for more than 120 mA operating current (150 mA rated output current) when the open circuit voltage is over 7500 V, and not more than 240 mA operating current (300 mA rated output current) when the open circuit voltage is 7500 V or less. These systems are for installation in accordance with Part 1, Section 30 of the Canadian Electrical Code.

These lighting systems may incorporate transformers, power supplies or ballasts that have a marked output voltage greater than 1000 V. Such systems are not intended for use in dwellings in accordance with Part 1, Section 30 of the Canadian Electrical Code.

These lighting systems provide general illumination in accordance with Part 1, Section 30 of the Canadian Electrical Code.

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Electric discharge lighting systems are provided as a system of parts that are field-installed. These systems are installed using tools and techniques only available to an electrician. The systems are provided with installation instructions which define the scope of the system and method for installation. It is intended that the system installation instructions be retained with the installation to which they apply.

The Listing of a lighting system does not constitute approval of the design which is the responsibility of the manufacturer and the Authority Having Jurisdiction nor approval of the installation. The final acceptance of the field-installed lighting system is the responsibility of the Authority Having Jurisdiction.

PRODUCT MARKING

These lighting systems may incorporate ballasts that have marked output voltages 1000 V or less. Such systems are intended for use in dwellings and other premises when provided with circuit interrupting lampholders that de-energize the circuit during lamp replacement, unless they are marked "Not for Dwelling Use."

These systems are intended for permanent installation in indoor, dry locations unless marked in combination with the Listing Mark "Suitable for Damp Locations" or "Suitable for Wet Locations."

RELATED PRODUCTS

This category does not cover neon tubing for display windows, outline lighting or signs which are covered under Signs Certified for Canada (UXYT7).

This category does not cover field assembled neon systems in display windows, outline lighting, or skeletal neon signs which are covered under Skeletal Neon Sign and Outline Lighting Systems, Field Assembled Certified for Canada (UZBL7).

This category does not cover field installed neon outline lighting systems that outline or call attention to architectural details of a room or building. Those products are covered under Field Installed Neon Outline Lighting Systems Certified for Canada (UYAM7).

Outline lighting of the incandescent, HID or fluorescent type fabricated in factory-built sections is covered under Signs Certified for Canada (UXYT7).

Lighting systems operating at 1000 V or less are covered under Fluorescent Luminaires Certified for Canada (IEUZ7), HID Luminaires Certified for Canada (IEXT7) and Incandescent Luminaires Certified for Canada (IEZR7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA C22.2 No. 207-M89, "Portable and Stationary Signs and Displays."

UL MARK

The Listing Mark of UL on each transformer and transformer enclosure, and the containers in which the remaining lighting system parts are packaged, or on the remaining lighting system parts themselves, referencing a specific field installed System Number, is the only method provided by UL to identify these lighting systems covered under its Listing and Follow-Up Services. The Listing Mark for these systems includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the words "LISTED," a control number, the product name "Field-Installed Electric Discharge Lighting System Part," and the words "The Listing of this lighting system is contingent upon installation according to the specifications of (Listee's Name), System No. _____ and the Canadian Electrical Code."

Electric-discharge Lighting Systems, Cold Cathode Certified for Canada (IFAY7)−*Continued*

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Landscape Lighting Systems, Low Voltage Certified for Canada (IFDH7)

USE

This category covers low-voltage landscape lighting systems and individual components. A lighting system consists of a power supply, a number of luminaires and the interconnecting cable for the low-voltage circuit. The individual components include power supplies, luminaires and all other items needed to install a complete system in accordance with the product ratings, instructions and markings.

Recessed luminaires (lighting units) intended for installation in a building wall or similar application are provided with a means to connect conduit and may be installed such that insulation is (and other combustible materials are) in contact with the luminaire (lighting unit) unless marked for installation in or on noncombustible surfaces only.

Certified components from the same company or from different companies may be used to form a complete lighting system as long as the components are used in accordance with the product ratings, markings and instructions.

The low-voltage wire or cable used to connect the power unit to the individual luminaires and fittings is intended to be certified PXWT, CXWT, LVLL, ULEC or SPT-3 (units rated less than 100 VA may use SPT-2). Wiring of luminaire assemblies to this cable is intended to be of a type suitable for wet locations.

RATINGS

Each power-unit output circuit is rated 30 V rms ac (42.4 V peak) or less, 25 A or less, and 300 VA or less. The total load connected to each output circuit of the power unit, determined by adding the wattages of the individual luminaires, is not intended to exceed the marked maximum permitted total lamp wattage. Two or more output circuits from the same or different power units are not intended to be connected in parallel or series.

PRODUCT MARKINGS

Power units and luminaires are intended for outdoor use only. Power units and luminaires marked "Suitable for Ground Installation" are suitable for mounting at a height less than 0.3 m above ground. Luminaires marked "Suitable for In-Ground Recessed Installation" are suitable for mounting below the ground plane. Luminaires marked "Suitable for Outside Recessed Wall Mounting Only. Do Not Mount On Ceilings" are suitable for installation in decks or similar structures.

Luminaires intended for use only with a Class 2 power unit are marked "Use on Class 2 Circuit Only."

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.7 (2007), "Extra-Low-Voltage Landscape Lighting Systems."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the word "Landscape," followed by the product name "Power Supply," "Power Unit," "Lighting Unit," "Luminaire" or "Fitting," or other appropriate product name as shown in the individual Listings.

* *

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Luminaires, Luminaire Assemblies and Luminaire Enclosures Certified for Fire Resistance Certified for Canada (IFDL7)

USE

This category covers luminaires, luminaire assemblies and luminaire enclosures investigated for use in fire-resistance designs as detailed in Fire-resistance Ratings – ANSI/UL 263 (BXUV). The luminaires, assemblies and enclosures (in conjunction with a luminaire) are intended for recessed installation in ceilings in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." They have been shown to provide a degree of fire resistance with the floor or roof assemblies with which they have been tested.

The luminaires and luminaire assemblies have been investigated and found to comply with applicable electrical requirements and are so labeled.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – ANSI/UL 263 (BXUV).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7), Fire-resistance Ratings Certified for Canada (BXRH7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S101, "Standard Methods of Fire Endurance Tests of Building Constructions and Materials."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*] CLASSIFIED FOR FIRE RESISTANCE
FIRE RESISTANCE CLASSIFICATION
DESIGN NO(S). ____
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.
or
[PRODUCT IDENTITY*] CLASSIFIED FOR FIRE RESISTANCE
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
Issue No.

* **LUMINAIRE**, **LUMINAIRE ASSEMBLY** or **LUMINAIRE ENCLOSURE**

* *

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Extra-low-voltage Luminaires for Recreational Vehicle Use Certified for Canada (IFDQ7)

USE

This category covers extra-low-voltage luminaires, rated 24 V or less, ac or dc, intended for use in recreational vehicles, supplied by a transformer, battery converter or similar power supply source.

This category does not cover vehicular lighting, such as clearance lights, side marker lights, etc.

PRODUCT MARKINGS

These luminaires are intended for indoor use only, unless marked "Indoor/Outdoor Use" or "Outdoor Use Only."

These luminaires have been investigated for ceiling mounting as surfaced or recessed types. Luminaires for either ceiling or wall mounting are marked "Ceiling/Wall Mount." Fixtures limited to wall mounting are marked "Wall Mount Only," unless so constructed that they are obviously intended for wall mounting.

These luminaires are marked with the minimum temperature rating for supply conductors, except when integral lead wire is provided for connection to the supply conductors. The integral leads are of sufficient length for field splices to be located behind the ceiling or wall panel. After field splices are completed, it is intended the splices be positioned in a space not affected by the luminaire lamp heat.

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Extra-low-voltage Luminaires for Recreational Vehicle Use Certified for Canada (IFDQ7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0 (2008), "Luminaires" (Annex H).

Products employing LED light sources are additionally investigated to CAN/CSA-C22.2 No. 250.13 (2012), "Light Emitting Diode (LED) Equipment for Lighting Applications."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "RV Luminaire."

* *

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Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7)

USE

This category covers extra-low-voltage luminaires, extra-low-voltage lighting power units, and extra-low-voltage luminaire systems. This category also covers luminaire fittings that are parts and/or subassemblies intended for final assembly into extra-low-voltage luminaires in the field.

These luminaires and fittings are rated 30 V (42.4 V peak) or less, for connection to an isolating type power unit rated 30 V (42.4 V peak) or less and 1000 VA maximum, limited and protected in accordance with Section 16 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). Sets of extra-low-voltage luminaires may include the power supply and interconnecting cabling, to make up an extra-low-voltage luminaire system.

Cable Lighting Systems — This category also covers cable lighting systems, defined in the CEC as complete, extra-low-voltage lighting systems that comprise an isolating type transformer with bare secondary conductors for connection to one or more luminaire heads. The luminaires may be repositionable along the bare secondary conductors that also support the luminaire. The power unit for these systems is provided with integral protection that de-energizes the output upon overloading or inadvertent shorting of exposed uninsulated live parts of the system.

INSTALLATION INSTRUCTIONS

Installation instructions accompanying the product describe the wiring method intended to be used to supply the luminaires and power units.

Where a fixed wiring method is indicated below, it is intended it be a wiring method that complies with the wiring method requirements of Section 12 and other applicable sections of the CEC.

Except for extra-low-voltage circuits of a cable lighting system, it is intended that Class 1 and Class 2 extra-low-voltage circuits of a system be installed in accordance with the requirements for Class 1 and Class 2 Circuits in Section 16 of the CEC. The extra-low-voltage circuits that are not part of a cable lighting system or of a Class 1 or Class 2 system are intended to be installed with a fixed wiring method. The extra-low-voltage circuits of cable lighting systems are intended to be installed as specified in the manufacturer's installation instructions, including that:

(a) Cable lighting systems be installed only in dry locations,
(b) Cable lighting systems not be installed in bathrooms,
(c) Conductors of extra-low-voltage circuits be rigidly supported,
(d) Conductors not be installed in contact with combustible materials and not run through walls, ceilings, floors or partitions, and
(e) Uninsulated conductors not be installed less than 2.2 m from the floor.

Power units intended to supply Class 2 luminaire circuits or an exposed conductor, cord, rail or track that supports the luminaires are intended to be connected to the branch circuit either with a factory-connected power supply cord or by a fixed wiring method. These power units are intended to be connected to the output circuit by (a) a wiring method consistent with that involved with the supplied luminaire, or (b) a fixed wiring method. All other power units are designed for connection to the branch circuit and the output circuit with a fixed wiring method.

Luminaires intended for recessed or undershelf installation into a cabinet are provided with installation instructions depicting the intended use.

Some lighting systems include track or rail types of sections that (a) support and provide power to extra-low-voltage luminaires, and (b) are intended to be bent by the installer as needed for the installation. Care should be taken to bend these system parts following the method identi-

Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7)–*Continued*

fied in the installation instructions and so that no part damage occurs. The radii of bends should be no less than specified by the manufacturer.

Care should be taken to adhere to all manufacturer-specified minimum spacings between a luminaire and a nearby object or surface that can be damaged from heat from the luminaire or that can adversely affect natural air movement around the luminaire. Examples include the ceiling above a wall-mounted luminaire, the adjoining wall of an inside corner, the wall near a ceiling-mounted luminaire, alcove surfaces, a valance, and curtains. Where minimum spacings are not specified by the manufacturer or the specific field configuration of a nearby wall, ceiling, or other object is not addressed in the manufacturer's installation instructions, care should be taken to minimize the heating of nearby objects and air movement around the luminaire.

PRODUCT MARKINGS

Luminaires and fittings not provided with an integral interconnecting means between the luminaire and the power supply source have means for installation in accordance with CEC Class 2 or power-limited Class 1 circuits as identified by product marking or installation instructions.

These luminaires and fittings are intended for surface mounting or suspended installation and are marked for either dry, damp or wet locations. A luminaire or fitting marked for wet locations is rated 15 V (21.2 V peak) maximum unless live parts are made inaccessible to contact during normal use. See Luminaires and Fittings Certified for Canada (HYXT7) for additional installation markings.

Recessed units (luminaires and power units) marked "Type IC" or "Inherently Protected" may be installed in accordance with CEC Rule 30-906, such that insulation and other combustible materials are in contact with and over the top of the unit.

All recessed units not marked "Type IC" or "Inherently Protected" are intended to be installed such that insulation is not placed over the top or within 76 mm of the sides of the unit, and other combustible materials are spaced, except at the points of support, at least 13 mm inch from the unit.

Power units shipped separately from the bare conductor lighting system are marked to identify the associated bare conductor system series number and manufacturer.

RELATED PRODUCTS

Extra-low-voltage landscape lighting systems consisting of a remote power supply source, flexible cord, interconnecting means and relocatable outdoor use lighting assemblies are covered under Landscape Lighting Systems, Low Voltage Certified for Canada (IFDH7).

Luminaires incorporating an integral transformer or power supply for supplying the luminaire's low-voltage lamp are covered under Luminaires, Portable Certified for Canada (QOWZ7) or Portable Cabinet Luminaires Certified for Canada (QOVJ7) if portable, and Incandescent Surface-mounted Luminaires Certified for Canada (IEZR7) if not portable.

Extra-low-voltage luminaires intended for connection only to 24 V or less source of supply in recreational vehicles are covered under Extra-low-voltage Luminaires for Recreational Vehicle Use Certified for Canada (IFDQ7).

Low-voltage flexible lighting products are covered under Flexible Lighting Products Certified for Canada (ILGJ7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category, except for low-voltage cabinet and undercabinet-type luminaries, is CSA-C22.2 No. 250.0, "Luminaires."

The basic standard used to investigate low-voltage cabinet and undercabinet-type luminaires in this category is CSA-C22.2 No. 9.0, "General Requirements for Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Low Voltage Luminaire," "Low Voltage Recessed Luminaire," "Low Voltage Cabinet Luminaire," "Low Voltage Luminaire Power Supply," "Low Voltage Lighting System," "Low Voltage Luminaire System," "Low Voltage Luminaire Fitting," or other appropriate product name as shown in the individual Listings.

The term "Fixture" may be used in lieu of "Luminaire" in the product name.

* *

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Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7)–*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Medical/dental Luminaires Certified for Canada (IFDT7)

GENERAL

This category covers task-lighting products, such as examination room lights, illuminated eye charts and the like, intended for installation and use in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, outside the defined patient vicinity. The patient vicinity is as specified in CSA Z32, "Electrical Safety and Essential Electrical Systems in Health Care Facilities," or CSA Z317.5, "Illumination Systems in Health Care Facilities," or in Provincial installation codes.

These lighting products have been investigated from the standpoint of electrical, fire and casualty hazards only. Lighting products investigated as patient care equipment, with respect to the isolation and leakage current requirements of CAN/CSA-C22.2 No. 601.1, "Medical Electrical Equipment – Part 1: General Requirements for Safety," are covered under Medical Equipment Certified for Canada (PIDF7). Other hazards, including those which may result from use of this equipment in the presence of flammable anesthetics, have not been investigated. The effect on a patient of simultaneous use of this equipment with other electrical apparatus and the physiological effects, beneficial or otherwise, which may be produced by this equipment, have not been investigated.

PRODUCT MARKINGS

All luminaires bear a model, catalog or series number (or similar designation) adjacent to the Certification Mark.

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Medical Examining Room Light" or "Eye Chart," or the name of the specific type of product as shown in the individual Listings.

* *

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Stage and Studio Luminaires, Accessories and Connector Strips Certified for Canada (IFDZ7)

USE

This category covers stage and studio luminaires, accessories and connector strips rated 600 V or less for use in theaters, studios and similar locations in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Connector strips are defined as a wireway mounted on rigging or to the building structure above or adjacent to the luminaires it supplies. Stage and studio luminaires, accessories and connector strips are not intended for residential use.

LUMINAIRE INSTALLATION MARKINGS

Stage and studio luminaires, accessories and connector strips are marked "NOT FOR HOUSEHOLD USE" and "IMPROPRE A L'UAGE DOMESTIQUE."

Incandescent stage luminaires are marked with a lamp replacement marking stating "MAX ____ WATTS, TYPE ____" or an equivalent phrase where the first and second blanks are filled in with the wattage and lamp type, respectively. If an equivalent phrase is used, it appears in English and French.

Luminaires are marked "WET LOCATIONS" and "EMPLACEMENTS MOUILLES," "DAMP LOCATIONS" and "EMPLACEMENTS HUMIDES," or "DRY LOCATIONS" and "EMPLACEMENTS SECS" as applicable according to the intended use.

RELATED PRODUCTS

Stage and Studio Luminaires, Accessories and Connector Strips Certified for Canada (IFDZ7)−*Continued*

Stage and studio luminaires and accessories employing or associated with light-emitting-diode (LED) illumination are covered under Light-emitting-diode Stage and Studio Luminaires and Accessories Certified for Canada (IFEC7).

ADDITIONAL INFORMATION

For additional information, see Special-purpose Luminaires Certified for Canada (IFAT7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate luminaires and accessories in this category is CSA-C22.2 No. 166 (1983), ''Stage and Studio Luminaires.''

The basic standards used to investigate connector strips in this category are CSA-C22.2 No. 21 (1995), ''Cord Sets and Power Supply Cords,'' and CSA-C22.2 No. 62 (1993), ''Surface Raceway Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Stage Luminaire,'' ''Stage Border Luminaire,'' ''Stage Luminaire Accessory,'' ''Connector Strip,'' or other appropriate product name as shown in the individual Listings.

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Light-emitting-diode Stage and Studio Luminaires and Accessories Certified for Canada (IFEC7)

USE

This category covers light-emitting-diode (LED) stage and studio luminaries and accessories rated 600 V or less, intended for use in theaters, studios and similar locations in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' LED stage and studio luminaries and accessories are not intended for residential use.

LUMINAIRE INSTALLATION MARKINGS

LED stage and studio luminaires and accessories are marked ''NOT FOR HOUSEHOLD USE'' and ''IMPROPRE A L'UAGE DOMESTIQUE.''

LED luminaires are marked ''WET LOCATIONS'' and ''EMPLACEMENTS MOUILLES,'' or ''DAMP LOCATIONS'' and ''EMPLACEMENTS HUMIDES,'' or ''DRY LOCATIONS'' and ''EMPLACEMENTS SECS,'' as applicable according to the intended use.

RELATED PRODUCTS

Stage and studio luminaires and accessories employing or related to light sources other than light-emitting diodes are covered under Stage and Studio Luminaires, Accessories and Connector Strips Certified for Canada (IFDZ7).

All connector strips intended for use in stage and studio applications are covered under Stage and Studio Luminaires, Accessories and Connector Strips Certified for Canada (IFDZ7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 166 (1983), ''Stage and Studio Luminaires.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate:

''Light-emitting-diode Stage Luminaire'' (or ''LED Stage Luminaire'')

''Light-emitting-diode Stage Border Luminaire'' (or ''LED Stage Border Luminaire'')

''Light-emitting-diode Stage Luminaire Accessory'' (or ''LED Stage Luminaire Accessory'')

''Light-emitting-diode Studio Luminaire'' (or ''LED Studio Luminaire'')

''Light-emitting-diode Studio Luminaire Accessory'' (or ''LED Studio Luminaire Accessory'')

Light-emitting-diode Stage and Studio Luminaires and Accessories Certified for Canada (IFEC7)−*Continued*

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Retrofit Low-voltage-luminaire Conversion Kits Certified for Canada (IFES7)

GENERAL

This category covers retrofit kits intended for field installation in certified luminaires to provide conversion to a low-voltage lighting system.

This category does not cover luminaire conversion lamps intended for direct replacement of existing lamps without the need for modification, rewiring or component replacement in the luminaire.

The retrofit kits may consist of light sources, electronic subassemblies (ballasts, LED drivers, or controllers), luminaire components, installation instructions and marking labels, and assembly aids (where appropriate) to facilitate the conversion. Modifications may include provisions for connection of one or more luminaires to an isolating-type power unit with outputs rated within the Class 2 voltage limits of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC). The power unit is not necessarily supplied with the retrofit kit.

The retrofit kits have been investigated to determine that, when installed in accordance with the manufacturer's instructions, the retrofitted luminaire fully complies with the applicable requirements (see **REQUIREMENTS** below). A kit that modifies a luminaire so it can no longer accept the original lamp includes a label to be affixed to the luminaire, where visible during relamping, that indicates the luminaire has been modified and can no longer operate the originally intended lamp(s).

INSTALLATION INSTRUCTIONS

Installation instructions accompanying the product describe the wiring method intended to be used to supply the luminaires and power units. These luminaires and fittings are rated 30 V (42.4 V peak) or less, for connection to an isolating-type power unit rated 30 V (42.4 V peak) or less and 1,000 VA maximum, limited and protected in accordance with Section 16 of the CEC. Sets of extra-low-voltage luminaires may include the power supply and interconnecting cabling, to make up an extra-low-voltage luminaire system.

Some retrofit kits are intended to adapt the luminaire to be used with a certified suspended-ceiling-grid low-voltage lighting system. The applicable lighting system is identified on certain parts of these kits and in the installation instructions. The wiring method intended for all other luminaires is either (a) that required for Class 2 circuits, when the circuit is supplied by a Class 2 power unit, or (b) fixed wiring.

Power units intended to supply Class 2 luminaire circuits or a certified suspended-ceiling-grid low-voltage lighting system are intended to be connected to the branch circuit either with a factory-connected power-supply cord or by fixed wiring. These power units are intended to be connected to the low-voltage lighting system or individual luminaires, as applicable, by (a) wiring means consistent with that involved with the supplied luminaire or suspended-ceiling-grid low-voltage lighting system, or (b) fixed wiring. Power units with other than Class 2 output are designed for connection to the branch circuit and the output circuit with a fixed wiring means.

LUMINAIRE MARKINGS

Retrofit luminaire conversion kits that replace the original lamp and still permit the insertion of the original lamp types are provided with a marking for installation by the kit installer on the retrofitted luminaire. This marking is visible during relamping and states, ''This luminaire has been modified and can no longer operate the originally intended lamp,'' and additionally identifies the replacement lamp type/model to be used, together with the manufacturer's name and ordering information.

LED retrofit luminaire conversion kits using linear tubular LED lamp conversions are provided with a marking for installation by the kit installer visible during relamping that indicates in text or wiring diagram how the supply connections are made to the lampholders.

RELATED PRODUCTS

Retrofit reflector kits intended for installation on fluorescent luminaires are covered under Luminaire Conversions, Retrofit Certified for Canada (IEUQ7).

Retrofit kits used to convert luminaires to LED illumination systems in accordance with CSA-C22.2 No. 250.0, ''Luminaires,'' and that are provided with integral LED power supplies or power modules are covered under Light-emitting-diode Retrofit Luminaire Conversion Kits Certified for Canada (IFAR7).

Retrofit devices used to convert light sources from one type to another in exit luminaires such as converting incandescent to LED are covered under Exit Sign Conversion Kits Certified for Canada (FWCF7).

Retrofit Low-voltage-luminaire Conversion Kits Certified for Canada (IFES7)−*Continued*

LED light sources intended to replace fluorescent lamps where it is not necessary to modify the luminaire are covered under Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV7).

Retrofit kits may include parts to adapt luminaires for use with a suspended-ceiling-grid low-voltage lighting system. These parts and the resulting converted luminaire are additionally investigated under Suspended-ceiling-grid Low-voltage System Accessories Certified for Canada (IFFC7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 250.0 (2008), "Luminaires," and CSA Technical Information Letter No. B-64, "Interim Certification Requirements for Retrofit Assemblies for Use in Fluorescent Luminaires."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RETROFIT LOW-VOLTAGE-LUMINAIRE CONVERSION
FOR USE ONLY WITH +
IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THIS RETROFIT KIT
Control No.

+ **PERMANENTLY CONNECTED LUMINAIRES**, **FLUORESCENT LUMINAIRES**, **INCANDESCENT LUMINAIRES**, **HID LUMINAIRES**, **OFFICE-FURNISHING LIGHTS** and/or **PORTABLE LUMINAIRES**; or indicate the specific luminaire model(s) and luminaire manufacturer(s)

or

RETROFIT LOW-VOLTAGE-LUMINAIRE CONVERSION
FOR USE ONLY WITH PRODUCTS DESCRIBED AND INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THIS RETROFIT KIT
Control No.

*** ***

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Submersible Luminaires Certified for Canada (IFEV7)

USE

This category covers submersible luminaires intended for installation in accordance with Section 68 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), in fountains and similar water-containing vessels not intended to accommodate the complete or partial immersion of persons. For certifications of luminaires intended for use in swimming pools, spas, hot tubs and other vessels intended to accommodate persons, see Luminaires and Forming Shells Certified for Canada (WBDT7).

This category also covers submersible junction boxes intended for use with submersible luminaires and other submersible fountain equipment.

Luminaires investigated for operation only while submersed in water are marked "Submerse Before Lighting," or with equivalent wording, and such marking is visible after installation of the luminaire.

Submersible luminaires have been investigated for both outdoor and indoor use.

Dry-niche Submersible Luminaire — These luminaires are intended for permanent installation only in the wall of a fountain unless accompanying installation instructions describe the additional option of installation in the bottom of the fountain. These luminaires are designed for servicing from the rear in a passageway behind the fountain wall or, if mounted in the bottom of the fountain, in a tunnel underneath the fountain. For purposes of installation, maintenance or servicing, the luminaire may consist of two separable parts. One part includes a factory-installed length of flexible cord terminating in an attachment plug, and the second part includes a receptacle for the attachment plug and a splice compartment in which the branch-circuit conductors are connected.

Wet-niche Submersible Luminaire — These luminaires are intended to be installed only in the wall of a fountain unless accompanying installation instructions describe the additional option of installation in the bottom of the fountain. These luminaires are intended for installation in a permanently installed luminaire housing (forming shell) in which the luminaire will be completely surrounded by water. These luminaires are marked to indicate the proper housings with which they are to be used. These luminaires are provided with a factory-installed, permanently attached flexible cord with an exposed length of not less than 12 ft. The flexible cord is confined in the luminaire housing by the luminaire and permits the luminaire to be removed from the luminaire housing and to be lifted to the fountain deck for servicing without lowering the water level or disconnecting the luminaire from the branch-circuit conductors. Luminaires with longer cords are available for installations where the junction box or splice enclosure is so located that a 12-ft.-long cord will not permit luminaire removal from the luminaire housing and placement on the deck for servicing. To reduce the risk of product damage, any cord length in excess of that necessary for servicing should be trimmed from the supply end rather than stored in the luminaire housing.

Submersible Luminaires Certified for Canada (IFEV7)−*Continued*

Forming Shell (Housing) for Wet-niche Submersible Luminaires — These are structures designed to support a mating wet-niche luminaire, for mounting in a fountain structure. Forming shells are marked to indicate the luminaires with which they have been investigated for use.

No-niche Submersible Luminaire — These luminaires are intended to be installed only on the walls of a fountain unless accompanying installation instructions describe the additional option of installation on the bottom of the fountain. These luminaires are mounted to a bracket permanently secured in or on the wall or bottom with the luminaire completely surrounded by water, and are marked to indicate the mounting brackets for which they have been investigated for use. These luminaires are provided with a factory-installed, permanently attached flexible cord with an exposed length of not less than 12 ft. that is confined by the luminaire and fountain wall or bottom. The flexible cord permits the luminaire to be removed from the mounting bracket and to be lifted to the fountain deck for servicing without lowering the water level or disconnecting the luminaire from the branch-circuit conductors. Luminaires with longer cords are available for installations where the junction box or splice enclosure is so located that a 12-ft.-long cord will not permit luminaire removal from the mounting bracket and placement on the deck for servicing. To reduce the risk of product damage, any cord length in excess of that necessary for servicing should be trimmed from the supply end rather than stored between the luminaire and fountain wall.

Mounting Brackets for No-niche Submersible Luminaires — These are structures designed to support a mating no-niche luminaire, for mounting in or on a fountain structure. Mounting brackets are marked to indicate the luminaires with which they have been investigated for use.

Special-use Submersible Luminaire — These luminaires are intended to rest directly on the fountain floor or may be otherwise located in the fountain. The luminaires are provided with a permanently attached exposed flexible cord intended to be routed into a submersible junction box, or the luminaires have other means for permanent connection to the supply circuit.

ACCESSORIES

This category also covers accessory devices and kits intended to be field installed for the purpose of modernizing a luminaire, such as to convert the luminaire from incandescent to LED technology. These accessories include instructions that identify the specific luminaire(s) for which the accessory is intended and that do not require special knowledge or skills beyond that normally required for user maintenance activities, such as lamp replacement. After installation of a certified accessory, the installed luminaire is expected to comply with the same requirements and perform in a comparable manner as a new luminaire, relative to safety risks.

REBUILT PRODUCTS

This category also covers submersible luminaires that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt submersible luminaires are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt submersible luminaires are subject to the same requirements as new submersible luminaires.

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 89 (1976), "Swimming-Pool Luminaires, Submersible Luminaires and Accessories."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Mounting Bracket for No-Niche Lumi-

Submersible Luminaires Certified for Canada (IFEV7)−*Continued*

naire,'' ''Housing for Wet-Niche Luminaire,'' ''Wet-Niche Submersible Luminaire,'' ''Dry Niche Submersible Luminaire,'' ''No-Niche Submersible Luminaire,'' ''Special Use Submersible Luminaire,'' ''Submersible Junction Box,'' ''Submersible Luminaire Accessory,'' or other appropriate product name as shown in the individual Listings. Alternatively, the luminaires may be designated ''Submersible Luminaire, (Wet-) (Dry-) (No-) Niche Type,'' as appropriate.

For rebuilt products, the word ''Rebuilt'' precedes the product name.

* *

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Suspended-ceiling-grid Low-voltage Systems Certified for Canada (IFFA7)

USE

This category covers low-voltage systems intended for permanent installation and use in a suspended-ceiling grid in accordance with Section 30 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

These systems are intended to be installed in a suspended-ceiling grid that provides mechanical support for the ceiling tiles and provides electrical connections between the low-voltage power supply and low-voltage luminaires or other accessories.

These systems consist of the following system components:

1. An isolating-type low-voltage power supply operating at 30 V (42.4 V peak) or less and not exceeding Class 2 power limits.
2. A grid-rail power distribution system with uninsulated busbar conductors, similar to track lighting, to provide power from the Class 2 power supply to one or more Class 2 powered luminaires.
3. Class 2 powered luminaires or other accessories that may be recessed into the suspended ceiling, surface mounted on the room side of the ceiling, or located below the suspended ceiling.

These systems are intended for indoor dry locations and commercial use only and may be used in air-handling spaces when identified for such use.

The system components also include interconnecting cables and connectors unless the connectors are suitable for field wiring.

Suspended-ceiling-grid low-voltage systems are not intended for use in:

1. Hazardous (classified) locations as specified in CEC Section 18.
2. General patient-care areas or critical patient-care areas as defined by CEC Section 24.
3. Emergency systems as specified in CEC Section 46.

Suspended-ceiling-grid low-voltage systems are not intended for contact with thermal insulation as specified in CEC Section 30.

Suspended-ceiling-grid rails with uninsulated busbar conductors are not intended for field cutting unless identified for such use.

INSTALLATION INSTRUCTIONS

These products are intended for installation in accordance with Section 30 of the CEC. Installation instructions accompanying the product describe the Class 2 wiring method intended to be used between the Class 2 power supply, the low-voltage grid-rail power distribution system, and the low-voltage luminaires or other accessories in accordance with Sections 30 and 16 of the CEC. The Class 2 power supply is intended for permanent installation in accordance with the wiring methods in Section 12 of the CEC.

All electrical connections are intended for installation by qualified electrical installers.

The mechanical components of the system, including support of the grid rails, is intended to be in accordance with the ''Canadian National Building Code'' (CNBC).

Each smallest unit package or carton is provided with installation instructions that contain a) a product description, b) a statement to identify the suspended-ceiling low-voltage system, c) a description of the part(s) intended to be used, and d) instructions describing how the part(s) are intended to be installed.

Each unit package or carton of suspended-ceiling low-voltage system grid-rail-bus section is provided with installation instructions that identify the system series number or model name and model or catalog number of the system. The installation instructions also specify the electrical ratings of the system and identify the method of mounting.

PRODUCT MARKINGS

All suspended-ceiling-grid low-voltage system components are marked with:

1. Listee's name, trade name, trademark or other descriptive marking by which the manufacturer responsible for the product may be identified.
2. A distinctive catalog number or the equivalent.
3. The electrical rating (at both power-feed connector installation points).
4. The date or other dating period of manufacture of the product not exceeding any three consecutive months.

Air-handling Use — Each suspended-ceiling-grid low-voltage system component (e.g., accessory, grid rail, connector) suitable for installation in air-handling spaces is marked ''Suitable for Use in Air-handling Spaces,'' or equivalent wording. Products that bear this marking are suitable for installation in accordance with CEC Section 12-010 and Section 3.6.4.3 of the CNBC.

Class 2 Luminaires — In addition to the required markings specified above for all components, each luminaire is marked with the specific suspended-ceiling-grid low-voltage system for which it is intended to be used.

Class 2 Power Supplies — In addition to the required markings specified above for all components, each power supply is marked with the specific suspended-ceiling-grid low-voltage system for which it is intended to be used.

Connectors — In addition to the required markings specified above for all components, the connectors are marked with:

1. The connector type (e.g., ceiling-grid load connector, in-plane load connector, power-feed connector) and a distinctive catalog number or the equivalent.
2. Electrical rating in volts and amperes (watts or VA is optional).
3. For a direct-current (dc) system, the polarity of the specific conductor opening in the connector: ''Positive,'' ''Pos.'' or ''+'' and ''Negative,'' ''Neg.'' or ''-.''

RELATED PRODUCTS

See Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S2577, ''Suspended Ceiling Grid Low Voltage Systems and Equipment.''

Discrete components of suspended-ceiling-grid low-voltage systems marked suitable for use in air-handling spaces have been additionally investigated to ULC/ORD-C2043, ''Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces.''

Suspended-ceiling-grid rails incorporating nonmetallic components intended to be installed in air-handling spaces have been additionally investigated to CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.'' The specific ceiling-finish materials are investigated as a ceiling-grid system and the system components are described in the individual certifications and in the installation instructions. The system is comprised of materials with a flame spread of not over 25 without evidence of continued progressive combustion and a smoke-developed index of not over 50.

Suspended-ceiling-grid rails incorporating nonmetallic components forming the finished ceiling have been additionally investigated to CAN/ULC-S102. The specific ceiling-finish materials are investigated as a ceiling-grid system and the system components are described in the individual certifications and in the installation instructions. The system is comprised of materials with a flame spread of not over 25 without evidence of continued progressive combustion and a smoke-developed index of not over 450.

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Grid Bus Rail,'' ''Low-voltage Suspended-ceiling Power Supply,'' ''Low-voltage Suspended-ceiling Luminaire,'' ''Low-voltage Suspended-ceiling Recessed Luminaire,'' or other appropriate product name as shown in the individual Listings.

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Suspended-ceiling-grid Low-voltage System Accessories Certified for Canada (IFFC7)

USE

This category covers suspended-ceiling low-voltage system accessories that are parts and/or subassemblies intended for field installation in specific suspended-ceiling-grid low-voltage systems. They include low-voltage Class 2 power supplies, power and load connector assemblies, low-voltage luminaires, and other accessories intended for installation in a specific suspended-ceiling-grid low-voltage system of another manufacturer in accordance with the accessory unit manufacturer's instructions.

These accessories have been investigated to determine that, when installed and used in accordance with the manufacturer's instructions, they do not adversely affect the operation of the complete suspended-ceiling-grid low-voltage system.

RELATED PRODUCTS

For information on product markings, installation instructions and other requirements, see Suspended-ceiling-grid Low-voltage Systems Certified for Canada (IFFA7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S2577, "Suspended Ceiling Grid Low Voltage Systems and Equipment."

Discrete nonmetallic components of suspended-ceiling-grid low-voltage systems marked suitable for use in air-handling spaces have been additionally investigated to ULC/ORD-C2043, "Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME*]
FOR USE WITH SUSPENDED-CEILING-GRID LOW-VOLTAGE SYSTEM
MODEL ____
MANUFACTURED BY ____
Control No.

* **LOW-VOLTAGE LUMINAIRE**, **CLASS 2 POWER SUPPLY**, or other appropriate product name as shown in the individual Classifications

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Track Lights and Tracks Certified for Canada (IFFR7)

USE

This category covers track-lighting systems for installation on or recessed into ceilings and walls and intended to be connected to a source of supply by a fixed wiring method.

These track-lighting systems are intended for installation in dry locations only.

Track-lighting systems consist of the following parts, each bearing a Certification Mark: 1) track sections, 2) connectors to connect track sections together and/or track sections to the supply, 3) end caps that insert into the last track sections in a run, 4) lighting assemblies, 5) electrical accessory parts such as low-voltage adapters and 6) accessory parts such as mounting hardware, track section hooks and fixture assembly light deflectors.

The following components are not part of the certified track-lighting system and are not acceptable for use with a certified track-lighting system: 1) receptacle adapters that when inserted into a track section will accommodate attachment-plug-connected products and 2) power-supply-cord connectors that when inserted into the end of a track section enables the track system to serve as a power-supply cord connected to its source of supply.

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Track Lights and Tracks Certified for Canada (IFFR7)−*Continued*

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 9 (1989), "Luminaires."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Track Lighting Fitting." The French translation "Ajustages D' E'Clairage" may also be used in conjunction with the preceding product name, e.g., "Track Lighting Fitting (Ajustages D' E'Clairage)."

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LUMINAIRE FITTINGS CERTIFIED FOR CANADA (IFFX7)

GENERAL

This category covers luminaire fittings, which are incomplete parts and/or subassemblies of luminaires, intended for final assembly into luminaires in the field. Completely assembled luminaires incorporating luminaire fittings may be submitted to UL as part of the Factory Inspection and Follow-Up Service Program for Fluorescent, Incandescent and High Intensity Discharge Luminaires and, if found suitable, certified as luminaires. Smoothness and thickness of wireways, methods for connection to a recognized wiring system, suitability of splice enclosure and means for inspecting splices are typical considerations given to the completed luminaire which cannot be judged until the fittings are assembled into a complete luminaire.

A complete luminaire assembled from certified luminaire fittings will bear the luminaire Certification Mark appropriate to the luminaire category if produced under UL's Factory Inspection and Follow-Up Service Program. The determination of the acceptability of an assembly not so labeled rests with the Authority Having Jurisdiction.

PRODUCT MARKINGS

All fittings are marked indicating the location where they can be used:

Fittings marked **"DRY LOCATIONS ONLY"** are intended to be installed in indoor dry locations.

Fittings marked **"SUITABLE FOR DAMP LOCATIONS"** are intended to be installed in damp or dry locations.

Fittings marked **"SUITABLE FOR WET LOCATIONS"** are intended to be installed in wet, damp or dry locations.

The locations are defined in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

All luminaire fittings bear a model, catalog or series number (or similar designation) adjacent to the Certification Mark.

RELATED PRODUCTS

Certain devices in the categories of Sign Accessories Certified for Canada (UYMR7), Surface Metal Raceways Certified for Canada (RJBT7), Surface Nonmetallic Raceways Certified for Canada (RJTX7), Surface Metal Raceway Fittings Certified for Canada (RJPR7) and Surface Nonmetallic Raceway Fittings Certified for Canada (RJYT7) are also suitable for use with luminaire fittings.

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 250.0, "Luminaires," in addition to standards applicable to the device(s) constituting the fitting.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Luminaire Fitting," "Swivel Joint" or "Disconnect Fitting," or other appropriate product name as shown in the individual Listings.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for

Luminaire Fittings Certified for Canada (IFFX7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Fixture Fittings for Track Lighting Certified for Canada (IFGT7)

USE

This category covers fixture fittings that are parts and/or subassemblies intended for field installation in specific track-lighting systems, identified by catalog number and company name. They include track-lighting-fixture units intended for installation in specific existing field-installed tracks of another manufacturer in accordance with the fixture unit manufacturer's instructions.

These fittings have been investigated to determine that when installed and used in accordance with the manufacturer's instructions, they do not adversely affect the operation of the complete track-lighting system.

ADDITIONAL INFORMATION

For additional information, see Luminaire Fittings Certified for Canada (IFFX7), Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 9 (1989), ''Luminaires.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FIXTURE FITTING FOR TRACK LIGHTING
CLASSIFIED BY UNDERWRITERS LABORATORIES INC.
FOR USE ONLY WITH TRACK LIGHTING MODEL ____
MANUFACTURED BY ____
Control No.
*** ***

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RECESSED LUMINAIRE TRIMS CERTIFIED FOR CANADA (IFGW7)

USE

This category covers trims intended for field installation in specified recessed incandescent luminaires. These products have been investigated to determine that, when used in accordance with the manufacturer's instructions, they comply with the appropriate requirements for the complete luminaire.

This category covers trims for use with newly installed luminaires and as retrofit devices intended to be used to replace existing trims. The specified luminaires with which the trims have been investigated are identified in the Certification Mark on the trim.

PRODUCT MARKINGS

Each trim is marked with its catalog number and manufacturer. Each trim is also marked with the lamp-replacement markings, and may include the blinking-light-warning marking.

RELATED PRODUCTS

Reflector retrofit kits used to add or replace reflectors in fluorescent luminaires are covered under Luminaire Conversions, Retrofit Certified for Canada (IEUQ7).

Retrofit devices used to convert incandescent exit fixtures to fluorescent exit fixtures are covered under Exit Sign Conversion Kits Certified for Canada (FWCF7).

ADDITIONAL INFORMATION

For additional information, see Luminaires and Fittings Certified for Canada (HYXT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate retrofit luminaire trim conversions in this category is CSA-C22.2 No. 250.0 (2008), ''Luminaires.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products

Recessed Luminaire Trims Certified for Canada (IFGW7)−*Continued*

includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RECESSED LUMINAIRE TRIM
FOR USE WITH [identification of which luminaires are to be used] ONLY
Control No.
*** ***

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LUMINAIRES AND FITTINGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IFGZ7)

LUMINAIRES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IFUX7)

GENERAL

This category covers incandescent lamp, fluorescent lamp and high-intensity-discharge lamp-type luminaires.

Seals are provided in the luminaires for Class I, Division 1 hazardous locations between lamp chambers and wiring chambers for supply line connections. The luminaires have been tested with respect to safe maximum external temperatures.

Luminaires certified for use in any of the groups under Class II, Divisions 1 and 2 hazardous locations have been tested for dusttightness and safe operation in the presence of the specific combustible dusts. The equipment should be kept clean and should be carefully maintained so as not to allow combustible dust to accumulate on equipment or in buildings. The operating temperature of any parts which may be in contact with the combustible dust is marked on the luminaires if this temperature exceeds 100°C. Certifications of luminaires for Class I, Division 2 only, of no specific hazardous location groups or of one or more of the hazardous location groups are included below. Such certifications are under hazardous location group headings with the suffix ''Division 2 only'' or under the heading ''Class I, Division 2 only.''

Luminaires without guards should be used only where not subject to breakage.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 137 (1981), ''Electric Luminaires for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Electric Lighting Fixture for Hazardous Locations,'' ''Electric Fixture for Hazardous Locations,'' ''Luminaire for Hazardous Locations'' or ''Electric Luminaire for Hazardous Locations.''

*** ***

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LUMINAIRES, RECESSED TYPE FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IGBW7)

USE AND INSTALLATION

This category covers incandescent lamp and electric-discharge-lamp-type luminaires intended for recessed installation in walls and ceilings of haz-

Luminaires, Recessed Type for Use in Hazardous Locations Certified for Canada (IGBW7)−*Continued*

ardous locations in accordance with the provisions of the Canadian Electrical Code, Part I. Unless marked "Suitable for damp locations" or "Suitable for wet locations," recessed luminaires are only suitable for dry locations.

Recessed luminaires are marked with the required minimum temperature rating of wiring supplying the luminaire. Unless marked "maximum of ____ No. ____ AWG branch circuit conductors suitable for at least ____ C (____ F) permitted in junction box," no allowance has been made for any heat contributed by branch-circuit conductors which pass through, or supply and pass through, an outlet box or other splice compartment which is part of the luminaire. The operating temperature is marked on the luminaire if this temperature exceeds 100°C.

Recessed luminaires certified for any of the groups under Class I, Divisions 1 and 2 hazardous locations are designed to operate without causing ignition of surrounding flammable gas or vapor-air atmosphere covered by the group under which it is certified. Seals are provided in luminaires for Class I, Division 1 hazardous locations between lamp chambers and wiring chambers for supply line connections. The luminaires have been tested with respect to maximum external operating temperatures.

Recessed fluorescent luminaires that include raceways are marked, in combination with the Certification Mark, "Suitable for use as Raceways" and are marked to indicate the maximum number, size, and type conductors they are intended to accommodate.

Recessed luminaires suitable for such use may be marked "Suitable for installation in poured concrete" except that recessed luminaires suitable only for installation in poured concrete are marked "For installation only in poured concrete."

Recessed luminaires known to produce temperatures in excess of 90°C at a distance of 12.7 mm (1/2 in.) from the enclosure walls, and which therefore are only suitable for installation in fire-resistive constructions are marked "This luminaire is suitable for installation only in buildings of fire-resistive construction, where the luminaire is not mounted on or adjacent to combustible material."

Certifications of recessed luminaires for Class I, Division 2 only, of no specific hazardous location groups or of one or more of the hazardous location groups are included below. Such certifications are under hazardous location group headings with the suffix "Division 2 only" or under the heading "Class I, Division 2 only." The luminaire should not be installed in any location where the ignition temperature of the gas of vapor-air mixture which may be present is less than the operating temperature marked on the luminaire.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 137 (1981), "Electric Luminaires for Use in Hazardous Locations."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Recessed Type Electric Lighting Fixture (Luminaire) for Hazardous Locations," "Recessed Type Electric Fixture (Luminaire) for Hazardous Locations" or "Recessed Luminaire for Hazardous Locations."

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

LUMINAIRE FITTINGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IGIV7)

USE

This category covers subassemblies of luminaires intended for final assembly into luminaires in the field. Information or instructions are provided specifying the subassemblies that may be used to assemble a luminaire in the field.

Also included are conduit boxes and bodies with threaded hubs, adjustable hangers, and flexible luminaire fittings with threaded hubs, for support of luminaires. Information on restrictions in the use of these fittings and as applicable to the assembled luminaire is marked on the fittings or provided with the fittings.

Luminaire Fittings for Use in Hazardous Locations Certified for Canada (IGIV7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 137 (1981), "Electric Luminaires for Use in Hazardous Locations," in addition to the standards referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Fixture Fitting for Hazardous Locations," "Electric Lighting Fixture for Hazardous Locations When Completely Assembled With UL Listed Fixture Fittings for Hazardous Locations," "Luminaire Fitting for Hazardous Locations," "Luminaire for Hazardous Locations When Completely Assembled With UL Listed Luminaire Fittings for Hazardous Locations," or other appropriate product name as shown in the individual Listings.

* *

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LUMINAIRES AND FITTINGS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IHRV7)

LUMINAIRE FITTINGS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IHSN7)

USE

This category covers subassemblies of luminaires intended for final assembly into luminaires in the field. Information or instructions are provided specifying the subassemblies that may be used to assemble a luminaire in the field.

Also included are conduit boxes and bodies with threaded hubs, adjustable hangers, and flexible luminaire fittings with threaded hubs, for support of luminaires. Information on restrictions in the use of these fittings and as applicable to the assembled luminaire is marked on the fittings or provided with the fittings.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 9, "Luminaires."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Fixture Fitting for Hazardous Locations," "Luminaire Fittings for Hazardous Locations," "Electric Lighting Fixture for

Luminaire Fittings for Use in Zone Classified Hazardous Locations Certified for Canada (IHSN7)−*Continued*

Hazardous Locations When Completely Assembled With UL Listed Fixture Fittings for Hazardous Location'' or ''Luminaire for Hazardous Locations When Completely Assembled With UL Listed Luminaire Fittings for Hazardous Locations.''

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LUMINAIRES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IHTF7)

USE

This category covers incandescent lamp, fluorescent lamp, high-intensity-discharge lamp or surgical-type luminaires.

Luminaires without guards should be used only where not subject to breakage.

Luminaires suitable for wet locations are so marked.

Luminaires marked ''Suitable for use in suspended ceilings,'' in combination with the Certification Mark, are intended to be mounted in openings of a suspended ceiling. They are marked with the minimum spacings between adjacent luminaires to side walls and to the structural ceiling above the luminaires. The space between the suspended ceiling and the structural ceiling must contain relatively unobstructed air space around the luminaires equal to the marked spacings. Fluorescent-lamp-type luminaires are suitable for end-to-end mounting. The test conditions do not anticipate external heat sources in the ceiling area such as steam pipes, heating ducts, and the like.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 9, ''Luminaires.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Lighting Fixture for Hazardous Locations'' or ''Luminaire for Hazardous Locations.''

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FLASHLIGHTS AND LANTERNS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IJRF7)

USE

This category covers flashlights and lanterns for use in any of the groups under Class I, Zone classified hazardous locations. They have been investigated with respect to use in the presence of specific flammable gas or vapor-air atmospheres. The tests have been conducted using specific lamp and battery combinations. The lamp designation and the number, type, size and voltage of the batteries to be used are marked on the product.

Safety of operation in the presence of explosive mixtures may be endangered if replacement parts other than those specified on the product are used.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Flashlight for Use in Hazardous Locations'' or ''Lantern for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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FLASHLIGHTS AND LANTERNS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (IKBR7)

GENERAL

This category covers flashlights and lanterns investigated with respect to use in the presence of specific flammable gas or vapor-air atmospheres (for any of the groups under Class I hazardous locations) and specific combustible dusts (for any of the groups under Class II hazardous locations). The tests have been conducted using specific lamp and battery combinations. The lamp designation and the number, type, size and voltage of the batteries intended to be used are marked on the product.

These products are provided with a filament-disconnect mechanism or other type of construction to protect against ignition of the specified hazardous atmosphere. The filament-disconnect mechanism is intended to disconnect the lamp bulb from the circuit when the glass bulb or envelope surrounding the lamp filament is broken.

The safety of operation in the presence of explosive mixtures may be compromised if replacement parts other than those specified on the product are used.

Flashlights and lanterns are not intended for use in hospital operating rooms unless so marked on the device.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Flashlight for Use in Hazardous Locations'' or ''Lantern for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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FLASHLIGHTS AND LANTERNS, RECHARGEABLE AND AUTOMATIC CERTIFIED FOR CANADA (IKIQ7)

USE

This category covers flashlights and lanterns of the rechargeable and/or automatic type.

Rechargeable flashlights and lanterns may incorporate a battery charger within the same enclosure that houses the battery and/or lamp, or may be provided with a separate battery charger.

Automatic flashlights and lanterns incorporate a switching device which, when the unit is connected to a line voltage supply, will maintain an open circuit between the battery and lamp and, upon loss of the line voltage supply, will close the circuit between the battery and the lamp. Some units may incorporate ''power on'' lights, ''night lights'' or other features. Automatic flashlights and lanterns may be provided with dry-cell batteries (nonrechargeable) or rechargeable batteries and battery charger.

FACTORS NOT INVESTIGATED

Automatic flashlights and lanterns have not been investigated with regard to duration or amount of light output and should not be employed in lieu of Emergency Lighting and Power Equipment Certified for Canada (FTBR7), where emergency lighting equipment is required.

RELATED PRODUCTS

Direct-plug-in nightlights are covered under Nightlights Certified for Canada (QOYX7).

Cord-connected nightlights and portable luminaires are covered under Luminaires, Portable Certified for Canada (QOWZ7).

Emergency backup lighting is covered under Emergency Lighting and Power Equipment Certified for Canada (FTBR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, ''Portable Luminaries,'' and CAN/CSA-C22.2 No. 223, ''Power Supplies with Extra-Low-Voltage Class 2 Outputs,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Rechargeable Flashlight,'' ''Rechargeable Lantern,'' ''Automatic Flashlight,'' ''Automatic Lantern,'' or other appropriate product name as shown in the individual Listings.

* *

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FLAT CONDUCTOR CABLE FITTINGS CERTIFIED FOR CANADA (IKMW7)

USE AND INSTALLATION

This category covers flat conductor cable fittings, which include all those items needed to install flat conductor cable, Type FCC (see IKKT7) in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' This category includes top and bottom shields, connectors, transition assemblies, fittings and insulators.

A fitting is suitable for use with a specific Type FCC cable in a particular flat conductor cable wiring system and is so identified.

Installation instructions are supplied by the manufacturer for the use of the general contractor, erector, electrical contractor, electrical inspector and others concerned with the installation.

This category does not cover wiring harnesses for equipment.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0 (2010), ''General Requirements – Canadian Electrical Code, Part II,'' and CSA-C22.2 No. 222 (1986), ''Type FCC Under-Carpet Wiring System.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Flat Conductor Cable Fitting.''

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FLATIRONS AND GARMENT-FINISHING APPLIANCES CERTIFIED FOR CANADA (IKOZ7)

GENERAL

This category covers household and commercial flatirons and domestic ironing machines.

This category also covers devices provided with mechanical and/or air-inflatable forms to form garments during the steaming operation.

Ironing machines of the automatic type and flatirons have some form of automatic temperature control (usually a thermostatic control) that operates automatically within predetermined temperature limits to open and close the circuit through the heating element. Flatirons and ironing machines may be of the automatic or nonautomatic type.

Some ironing machines use steam and/or air for the purpose of forming and/or removing wrinkles from garments. The steam is supplied by electric steam generators integral with the unit or from external steam lines. The air is supplied from external air lines.

Ironing machines are investigated from the standpoint of personal injury as well as electrical hazards. To reduce the likelihood of accidents, rotary-type devices are required to employ a readily operable safety-release mechanism, which is independent of the connection of the machine to the electrical power supply.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following:

CAN/CSA-C22.2 No. 81 (1990), ''Electric Irons''

CAN/CSA-E60335-1/4E (2003), ''Household and Similar Electrical Appliances – Safety – Part 1: General Requirements''

CAN/CSA-E60335-2-3 (2006), ''Household and Similar Electrical Appliances – Safety – Part 2-3: Particular Requirements for Electric Irons''

CSA-C22.2 No. 99 (1954), ''Construction and Test of Domestic Ironing Machines''

CAN/CSA-C22.2 No. 64 (2010), ''Household Cooking and Liquid-Heating Appliances''

Additional standards may be applicable based on the features employed. In addition, CSA Technical Information Letter No. C-37, ''Input Ratings for Cord-Connected Heating and Cooking Appliances, Hairdressing Equipment and Electric Irons for Household Use'' (issued 2-28-05), may also be used as applicable.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate product name as shown in the individual Listings.

* *

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FLATIRON ACCESSORIES CERTIFIED FOR CANADA (ILCX7)

USE AND INSTALLATION

This category covers (1) cord sets assembled to or mounted on a cord holder, stand or similar device, and (2) ironing boards for permanent installation.

The cord sets have an attachment-plug cap on one end and a cord connector body or flatiron plug on the other, and are usually provided with a clip or clamp for securing to the end of an ironing board. They have a current-carrying capacity of at least 10 A.

The ironing boards are provided with wiring, a receptacle for connection of a flatiron, and means for conduit connection.

ADDITIONAL INFORMATION

For additional information, see Flatirons and Garment-finishing Appliances Certified for Canada (IKOZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Flatiron Accessories Certified for Canada (ILCX7)−*Continued*

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 81 (1990), ''Electric Irons.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Flatiron Accessory.''

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FLEXIBLE LIGHTING PRODUCTS CERTIFIED FOR CANADA (ILGJ7)

USE

This category covers flexible lighting products that are cord connected and rated not more than 12 A, 120 V. Flexible lighting products and light sculptures may incorporate controller units. Flexible lighting products and light sculptures have been investigated for use in wet locations.

A flexible lighting product incorporates nonreplaceable series or series/parallel incandescent lamps or light emitting diodes, enclosed within a flexible polymeric tube or extrusion. Flexible lighting products are not intended for field cutting or splicing.

This category also covers flexible light sculptures which are intended for decorative use and consist of a polymeric or rigid frame to which a flexible light is attached. The flexible light attached to the light sculpture provides outline lighting of the figure or object created by the frame.

Flexible lighting products are marked ''SUITABLE FOR WET LOCATIONS'' and may be mounted with the optional: ''SUITABLE FOR OUTDOOR USE.'' Flexible lighting products are provided with additional markings and installation which indicate their intended use.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0, ''Canadian Electrical Code, Part II – General Requirements,'' and CSA Technical Information Letter No. B-39, ''Interim Certification Requirements for Flexible Light Cable Systems'' (effective date March 1, 2002).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Flexible Light,'' ''Flexible Light Cable System'' or ''Flexible Light Sculpture,'' or other appropriate product name as shown in the individual Listings.

* *

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FLOOR-FINISHING MACHINES CERTIFIED FOR CANADA (IMSR7)

USE

This category covers cord-connected floor-finishing machines for commercial and household uses, such as floor polishers, scrubbers, sanders, scrapers, tile removers, rug shampooers, rug and floor washers, and similar appliances. This category includes floor-finishing machines with vacuum attachments, but does not include vacuum cleaning machines, permanently connected machines or cord-connected machines intended to be fastened in place or located in a dedicated space.

Some machines are for use with floor-care products intended for machine application.

Except where specified as ''double insulated'' in the individual certifications, all machines intended for use in damp or wet locations are provided with means for grounding. Appliances specified as ''double insulated'' are constructed with a special insulating system in lieu of grounding and are distinctively marked ''Double-Insulated'' or ''Double Insulation.''

Suitable precautions should be taken during the use of floor-sanding machines to prevent formation of combustible mixtures of sanding dust and air.

REBUILT PRODUCTS

This category also covers floor-finishing machines that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt floor-finishing machines are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt floor-finishing machines are subject to the same requirements as new floor-finishing machines.

FACTORS NOT INVESTIGATED

Any health hazards that may be associated with the use of floor-finishing machines, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate commercial products in this category is CSA-C22.2 No. 10, ''Electric Floor Surfacing and Cleaning Machines.''

The basic standard used to investigate household products in this category is CSA-C22.2 No. 243, ''Vacuum Cleaners, Blower Cleaners and Household Floor Finishing Machines.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Floor-finishing Machine,'' or other appropriate product name as shown in the individual Listings.

For rebuilt products the word ''Rebuilt,'' ''Refurbished'' or ''Remanufactured'' precedes the product name.

* *

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LUMINOUS EGRESS-PATH-MARKING SYSTEMS CERTIFIED FOR CANADA (IMZI7)

USE AND INSTALLATION

This category covers photoluminescent and self-luminous egress-path-marking systems intended to visually identify the path of egress and significant egress-path features, such as doors, stair banisters, obstacles, or information placards.

These products are intended for installation and use in accordance with the ''National Building Code of Canada.''

Path-marking systems intended to be installed on the floor have additionally been subjected to commercial cleaning operations representative of those specified in the manufacturer's instructions. Path-marking-system components intended to be installed on a stair nosing have additionally been subjected to a slip-resistance investigation and are permitted to be marked ''Suitable for Stair Nosings,'' or equivalent wording.

Photoluminescent products may include adhesive-backed or mechanically secured, rigid or flexible tapes or sheet materials for field application in accordance with the manufacturer's instructions. Paint or pigment material must be pre-applied (at the manufacturing facility) to a substrate; field application of photoluminescent pigment (by painting, spraying, or similar method) directly to building materials or surfaces is not permitted due to uncontrolled application variables deemed significant for product performance. Photoluminescent products require exposure to light for activation of their luminescent properties, and their instructions identify the minimum amount and type of illumination to achieve their full intended functionality.

Self-luminous products, typically containing tritium gas, are marked with a replacement date, and must also comply with the requirements of the Canadian Nuclear Regulatory Commission.

RELATED PRODUCTS

Photoluminescent and self-luminous exit signs are covered under Exit Signs, Self-luminous and Photoluminescent Certified for Canada (FWBX7).

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S572, "Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Luminous Egress-path-marking System" or "Luminous Egress-path Marker."

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FOOD-PREPARING MACHINES CERTIFIED FOR CANADA (IPNX7)

FOOD-PREPARING MACHINES, COMMERCIAL CERTIFIED FOR CANADA (IPST7)

USE AND INSTALLATION

This category covers electrically operated machines used or located in commercial kitchens associated with restaurants, hospitals or other business establishments where they are not ordinarily accessible to the general public. They are used in the processing or combination processing and serving of foods and food products and may be provided with such miscellaneous attachments as bowls, sieves, droppers, etc., not involving moving or cutting parts. Attachments that perform functions other than intended by the basic design have not been investigated unless specifically noted in the individual certifications and covered in the installation and use instructions.

Commercial food-preparing machines such as meat- and bread-slicing machines, choppers, meat saws, etc., employing knives, screw- or worm-type feeding mechanisms, etc., are investigated for personal injury, electric shock and fire. These machines are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of accidents. In determining the need for protection against the risk of personal injury, consideration is given to the required utility of the product in a commercial application and the fact that experienced operators will most likely use the product.

Some products in this category have cutting or moving parts, presenting certain risks of personal injury that cannot be wholly eliminated by practical design features; such risks have been reduced to an acceptable degree.

If a product is suitable for built-in installation, side-by-side mounting or stacking, it is so indicated in the installation instructions.

If a product is of a type designed for permanent connection to water supply or waste disposal lines at the point of installation, Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection.

Some equipment may be designed to accept accessories in the field. In such cases, both the commercial food-preparing machine and the accessory (attachment) are marked to relate the two for proper installation.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installation or use, warnings or special instructions are on the equipment visible after installation and during use where applicable.

REBUILT PRODUCTS

This category also covers commercial motor-operated food-preparing machines that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt commercial motor-operated food-preparing machines are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt commercial motor-operated food-preparing machines are subject to the same requirements as new commercial motor-operated food-preparing machines.

FACTORS NOT INVESTIGATED

The sanitation of these products has not been investigated.

RELATED PRODUCTS

Refrigerated beverage and/or ice dispensers are covered under Beverage Coolers and Beverage Cooler-Dispensers Certified for Canada (SFWY7).

Food-preparing Machines, Commercial Certified for Canada (IPST7)−*Continued*

Refrigerated ice cream makers are covered under Ice Cream Makers Certified for Canada (SINX7).

Custom-built food-preparation or serving equipment consisting of drop-in components, shelf heaters, plate warmers or heated food displays, etc., is covered under Commercial Cooking Appliances Certified for Canada (KNGT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category, except for ice dispensers and/or nonrefrigerated beverage dispensers, is CSA-C22.2 No. 195 (1987), "Motor Operated Food Processing Appliances (Household and Commercial)," or CAN/CSA-E60335-1/4E (2003), "Household and Similar Electrical Appliances – Safety – Part 1: General Requirements," and CAN/CSA-E60335-2-64 (2001), "Safety of Household and Similar Electrical Appliances – Part 2-64: Particular Requirements for Commercial Electric Kitchen Machines."

The basic standard used to investigate ice dispensers and/or nonrefrigerated beverage dispensers in this category is CAN/CSA-C22.2 No. 120 (1991), "Refrigeration Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Food-preparing Machine" or "Meat Slicer," or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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FOOD-PREPARING MACHINES, HOUSEHOLD CERTIFIED FOR CANADA (IPWZ7)

USE

This category covers electrically operated machines used or located in a household or similar environment where they are ordinarily accessible to the general public. They are used in the processing or combination processing and serving of foods and food products and may be provided with such miscellaneous attachments as bowls, sieves, droppers, etc., not involving moving or cutting parts. Attachments that perform functions other than intended by the basic design have not been investigated unless specifically noted in the individual certifications and covered in the installation and use instructions.

Household food-preparing machines such as meat- and bread-slicing machines, choppers, meat saws, etc., employing knives, screw- or worm-type feeding mechanisms, etc., have been investigated for risk or personal injury, electric shock and fire. These machines are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of accidents. In determining the need for protection against the risk of personal injury, consideration is given to the required utility of the product in a household application and the fact that persons will most likely have no previous experience in operating the product.

Certain products in this category have cutting or moving parts, presenting certain risks of personal injury that cannot be wholly eliminated by practical design features. Such risks have been reduced to an acceptable degree.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food prepared by the use of these machines has been investigated.

RELATED PRODUCTS

Ice cream makers including refrigeration are covered under Ice Cream Makers Certified for Canada (SINX7).

Motor-operated cleaning machines intended for cleaning food are covered under Cleaning Machines, Motor Operated Certified for Canada (DMGK7).

Combination products including features for food preparation and cooking, such as breadmakers and coffee grinders/makers are covered under Household Cooking Appliance Certified for Canada (KNUR7).

ADDITIONAL INFORMATION

Food-preparing Machines, Household Certified for Canada (IPWZ7)−*Continued*

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 1335.1, ''Portable Electrical Motor-Operated and Heating Appliances: General Requirements,'' and CSA-C22.2 No. 1335.2.14 ''Portable Electrical Motor-Operated and Heating Appliances: Particular Requirements for Electrical Motor-Operated Kitchen Appliances.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, one of the following product names: ''Food-preparing Machine,'' ''Meat Chopper,'' ''Meat Slicer,'' ''Ice Crusher,'' or the name of the specific type of product as shown in the individual Listings, and ''Household Use Only'' or ''Household Type'' or the like.

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FOUNTAINS, SMALL DECORATIVE CERTIFIED FOR CANADA (IQRW7)

GENERAL

This category covers electrically operated, decorative, portable, self-contained fountains.

RELATED PRODUCTS

Similar equipment for stationary or fixed installations is covered under Architectural and Floating Fountains Certified for Canada (AWEG7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fountain, Decorative.''

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FUEL EQUIPMENT CERTIFIED FOR CANADA (IRMT7)

COMPRESSED NATURAL GAS ACCESSORIES, AUTOMOTIVE TYPE CERTIFIED FOR CANADA (IRTS7)

USE AND INSTALLATION

This category covers accessories designed for use on compressed natural gas (CNG) fueled automotive vehicles. The use does not imply that the vehicle itself is Listed.

These accessories are constructed and may be installed in accordance with Amendment 1 of CSA B149.1 (1991), ''Natural Gas and Propane Installation Code.''

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

Compressed Natural Gas Accessories, Automotive Type Certified for Canada (IRTS7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/AGA NGV3.1/CGA NGV 12.3 (1995), ''Fuel System Components for Natural Gas Powered Vehicles.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Regulator,'' ''Shutoff Valve,'' ''Refueling Valve'' or ''Control Valve.''

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LP-gas Accessories for Engine Fuel Systems Certified for Canada (ITPV7)

USE AND INSTALLATION

This category covers devices and equipment intended for use in LP-gas engine fuel systems on vehicles or engine generators. Use of this equipment does not imply that the vehicle or generator itself is certified.

These accessories are intended for installation and use in accordance with CAN/CSA-B149.2, ''Propane Storage and Handling Code.''

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA 12.2 (1992), ''Propane Fuel System Components for Use on Highway Vehicles.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Filter,'' ''Fuel-Lock Filter,'' ''Regulator,'' ''Vaporizer-Regulator,'' ''Immersion Vaporizer,'' ''Automatic Shut-Off Valve,'' ''Low-Pressure Shut-Off Valve,'' ''Control Valve,'' ''Filter Hydrostatic Relief Valve,'' ''Quick-Connect Coupling,'' ''Liquid-Level Gauge,'' ''Automatic Liquid-Level Control Valve,'' or other appropriate product name as shown in the individual Listings.

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FUEL GAS BOOSTER COMPRESSOR EQUIPMENT CERTIFIED FOR CANADA (IUXX7)

GENERAL

This category covers fuel gas booster compressor equipment designed to increase the pipeline pressure of a fuel gas, such as natural gas, from a low-fuel gas pressure (nominally 1.72 to 34.5 kPa) to a higher outlet pressure (such as 207 to 793 kPa). This higher-pressure fuel gas is then supplied to an external product, such as a microturbine. The equipment is intended for either indoor or outdoor use.

The equipment consists of a motor-compressor or an open-type compressor, internal gas piping, wiring and a combination of associated electrical and mechanical assemblies and controls on a common frame in an overall enclosure.

Equipment containing a motor compressor connected to a flammable fuel gas piping system has been investigated to determine that flame will not propagate beyond the inlet and outlet fuel gas connections of the equipment, should an electrical fault occur within the motor compressor when a flammable gas/air mixture is present.

FUEL GAS BOOSTER COMPRESSOR EQUIPMENT CERTIFIED FOR CANADA (IUXX7)

These units are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II."

PRODUCT MARKINGS

These products are marked with the manufacturer's name, model number, electrical rating, inlet gas pressure (minimum and maximum) and maximum discharge gas pressure.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 140.2, "Hermetic Refrigerant Motor-Compressors," and CSA-C22.2 No. 100 (1995), "Motors and Generators."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fuel Gas Booster" or "Fuel Gas Booster Compressor."

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FURNISHINGS CERTIFIED FOR CANADA (IYMR7)

GENERAL

This category covers electrical (rated 750 V ac or less) and/or nonelectrical furnishings, and includes:

1. Motor-operated furniture, such as motor-operated beds and chairs, merchandise displays and furniture-mounted video support systems
2. Electrified furniture, such as lighted curio cabinets, microwave carts and bed headboards
3. Nonseasonal electrical decorations, such as wave machines, lava lamps and neon sculptures
4. Home and individual office furnishings, such as study carrels, consoles and desks
5. Commercial product and informational displays, such as shelving units, motorized carpet displays and product platforms
6. Electrified building components, such as windows
7. Other similar miscellaneous furnishings intended for use in dwelling units or commercial environments

USE AND INSTALLATION

Products marked for household or residential use are intended to be used in dwelling units and guest rooms of hotels and motels. Hotel common areas such as the lobby or restaurant are considered commercial. Household or residential furnishings may be used in commercial settings, such as individual offices, where the number of people using the furnishings will be limited.

Products marked for commercial use are used where business is transacted, such as an office building, factory, warehouse, or similar location, and which is not a dwelling unit. These locations are where a large number of different people may be using the furnishings or are near the furnishings (such as customers near a display furnishing).

Products covered under this category are provided with installation and use instructions.

These units are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

UNEVALUATED FACTORS

The physiological or psychological effects on a person, beneficial or otherwise, which may be produced through the use of this equipment either singularly or with any other apparatus have not been investigated.

RELATED PRODUCTS

Office furnishings are covered under Office Furnishings Certified for Canada (QAWZ7).

Cord-connected multiple outlet strips intended for general use (e.g., relocatable power taps) are covered under Relocatable Power Taps Certified for Canada (XBYS7). Cord-connected multiple-outlet strips intended for permanent mounting (e.g., furniture power distribution units) are covered under Furniture Power Distribution Units Certified for Canada (IYNC7).

Lighted display cases and cabinets used in commercial applications are covered under Wired Cabinets Certified for Canada (ZNXR7). Nonilluminated advertising displays are covered under Advertising Displays, Nonilluminated Certified for Canada (AAVU7).

Furnishings used for patient care are covered under Medical Equipment Certified for Canada (PIDF7).

Custom-built commercial products, such as ticket machines, electronic point-of-sale products, and the like are covered under Custom-built Kiosks Certified for Canada (EMHH7).

Furnishings intended for support of audio or video equipment and provided with casters or secured to the building structure are covered under Carts and Stands for Household, Commercial and Professional Use Certified for Canada (CZUV7) or Carts, Tall Institutional Certified for Canada (CZWK7).

Portable lamps are covered under Luminaires, Portable Certified for Canada (QOWZ7) or Portable Cabinet Luminaries Certified for Canada (QOVJ7).

Decorative products intended for seasonal, temporary use such as lighted sculptures, molded figurines, and the like are covered under Outfits, Decorative Certified for Canada (DGXW7). Decorative lighting strings or electric ornaments intended for seasonal use are covered under Strings, Decorative Lighting Certified for Canada (DGZZ7) and Electric Ornaments Certified for Canada (DGXC7).

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BUILDING COMPONENTS CERTIFIED FOR CANADA (IYMT7)

GENERAL

This category covers building components, such as heated windows, electrochromatic windows, motorized structure-mounted mirrors, and nonmotorized structure-mounted shelving and shelving support systems.

For commercial units that (1) have a surface area greater than 0.93 m^2 (10 sq ft) and are intended to be adjacent to other furnishings, or (2) are greater than 1.86 m^2 (20 sq ft) and intended to stand alone, the surface burning characteristics of building materials employed in these assemblies are judged to be no greater than that of ordinary lumber used in on-site construction. Finished surfaces are of materials having a flame spread rating of 200 or less and, unless otherwise marked, a smoke developed rating of 450 or less.

These building components have not been investigated for use as components of fire-resistive assemblies.

These products are provided with installation and use instructions.

These systems are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

These products are marked with the Listee's name, trademark or UL File Number, a unique model designation, a date code, and any electrical ratings.

Products intended for use only in dwelling units are marked "Household Use Only"; products intended for use only in commercial settings are marked "Commercial Use Only." If there is no marking, then the product may be used in both dwelling units and commercial settings.

Products suitable for outdoor use are marked "Suitable for Outdoor Use."

ADDITIONAL INFORMATION

For additional information, see Furnishings Certified for Canada (IYMR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, "Portable Luminaires," CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)," CSA-C22.2 No. 250, "Luminaires," CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II," and CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies," in addition to the requirements contained in CSA Technical Information Letter No. B-60, "Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires" (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Building Component," "Heated Glazing," "Electrified Glazing," "Shelving System" or "Articulating Mirror."

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Building Components Certified for Canada (IYMT7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

COMMERCIAL DISPLAYS CERTIFIED FOR CANADA (IYMX7)

USE AND INSTALLATION

This category covers commercial merchandise displays such as lighted and powered shelving units, luminary store displays, motorized rotating merchandise displays and motorized carpet flooring displays. A commercial display is a furnishing other than a display case or cabinet that is used in a commercial establishment to display jewelry or similar merchandise.

Commercial merchandise displays may be permanently connected or may be cord-and-plug connected with up to two power-supply cords.

For commercial units that (1) have a surface area greater than 0.93 m^2 (10 sq ft) and are intended to be adjacent to other furnishings, or (2) units that are greater than 1.86 m^2 (20 sq ft) and intended to stand alone, the surface burning characteristics of building materials employed in these assemblies are judged to be no greater than that of ordinary lumber used in on-site construction. Finished surfaces are of materials having a flame spread rating of 200 or less and, unless otherwise marked, a smoke developed rating of 450 or less.

These products are provided with installation and use instructions.

These systems are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

UL-certified commercial displays are marked "Certification of this Listed Commercial Display does not include the products that are on display."

Products intended for use only in commercial settings are marked "Commercial Use Only."

Products suitable for outdoor use are marked "Suitable for Outdoor Use."

RELATED PRODUCTS

Illuminated display showcases and cabinets used in commercial applications are covered under Wired Cabinets Certified for Canada (ZNXR7).

Nonilluminated advertising displays are covered under Advertising Displays, Nonilluminated Certified for Canada (AAVU7).

Custom-built commercial products, such as ticket machines, electronic point-of-sale products, Internet communication stands and the like are covered under Custom-built Kiosks Certified for Canada (EMHH7).

ADDITIONAL INFORMATION

For additional information, see Furnishings Certified for Canada (IYMR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, "Portable Luminaires," CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)," CSA-C22.2 No. 250.0, "Luminaires," CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II," and CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies," in addition to the requirements contained in CSA Technical Information Letter No. B-60, "Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires" (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Display."

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DECORATIVE FURNISHINGS CERTIFIED FOR CANADA (IYNA7)

USE AND INSTALLATION

This category covers furnishings intended to be used year-round (nonseasonal) that exist for aesthetic enjoyment or an ornamental purpose, such as lava lamps, low-wattage illuminated sculptures, glitter lamps, scrolling scenes, neon sculptures, strobe lamps, mirror balls, plasma lighting globes, motorized sculptures, optical fiber sculptures and wave machines.

Decorative Furnishings Certified for Canada (IYNA7)−*Continued*

These products are typically portable cord-and-plug connected but may be permanently connected.

These products are provided with use instructions and, if permanently connected, installation instructions are also provided.

These products are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

Products intended for use only in dwelling units are marked "Household Use Only"; products intended for use only in commercial settings are marked "Commercial Use Only." If there is no marking, then the product may be used in both dwelling units and commercial settings.

Products suitable for outdoor use are marked "Suitable for Outdoor Use."

RELATED PRODUCTS

This category does not cover portable lamps (cord-connected portable luminaires (lamps), whose primary function is task or ambient illumination, and that can be moved to a new location without the use of tools). Tiffany-type portable lamps and similar lighted decorative lamps are portable lamps rather than a decorative furnishing. Portable lamps are covered under Luminaires, Portable Certified for Canada (QOWZ7) or Portable Cabinet Luminaires Certified for Canada (QOVJ7).

This category does not cover decorative outfits intended for seasonal, temporary use, not to exceed 90 days per year, providing a seasonal theme, such as wreaths, stars, tree-top units, sprays, light sculptures, molded figures, such as a pumpkin or a snowman, candles or candle sets without lamp shades, tree stands, and motorized decorative displays having illumination or other decorative effects. Decorative-lighting strings provided with lamp shades or diffusers over the lamps are also considered decorative outfits. Decorative outfits are intended for connection to a receptacle by means of an attachment plug and are portable. Seasonal, temporary-use decorative products, such as lighted sculptures and molded figurines, are covered under Outfits, Decorative Certified for Canada (DGXW7).

This category does not cover fountains; see Fountains, Small Decorative Certified for Canada (IQRW7) or Architectural and Floating Fountains Certified for Canada (AWEG7).

ADDITIONAL INFORMATION

For additional information, see Furnishings Certified for Canada (IYMR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, "Portable Luminaires," CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)" CSA-C22.2 No. 250.0, "Luminaires," and CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II," in addition to the requirements contained in CSA Technical Information Letter No. B-60, "Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires" (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Decorative Furnishing."

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FURNITURE, POWERED AND NONPOWERED CERTIFIED FOR CANADA (IYNE7)

USE AND INSTALLATION

This category covers furnishings provided with or without electrical power typically for lighting and convenience receptacle outlets. They include lighted make-up mirrors, study carrels, consoles, lighted curio cabinets, entertainment centers, headboards, bookcases, desks, tables, laboratory and work benches, and the like.

These products are provided with use instructions and installation instructions when intended for permanent connection.

These systems are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

Furniture, Powered and Nonpowered Certified for Canada (IYNE7)−*Continued*

Products intended for use only in dwelling units are marked ''Household Use Only''; products intended for use only in commercial settings are marked ''Commercial Use Only.'' If there is no marking, then the product may be used in both dwelling units and commercial settings.

Products suitable for outdoor use are marked ''Suitable for Outdoor Use.''

RELATED PRODUCTS

Furnishings intended for support of audio or video equipment and provided with casters or secured to the building structure are covered under Carts and Stands for Household, Commercial and Professional Use Certified for Canada (CZUV7) or Carts, Tall Institutional Certified for Canada (CZWK7).

Furnishings intended to be used in an office environment and that must be connected together both mechanically and electrically are covered under Office Furnishings Certified for Canada (QAWZ7).

Interconnected tables provided with convenience receptacle outlets are covered under Powered Table Systems Certified for Canada (IYNI7).

ADDITIONAL INFORMATION

For additional information, see Furnishings Certified for Canada (IYMR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, ''Portable Luminaires,'' CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial),'' CSA-C22.2 No. 250.0, ''Luminaires, '' and CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Powered Furniture'' or ''Nonpowered Furniture.''

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MOTORIZED FURNISHINGS CERTIFIED FOR CANADA (IYNG7)

GENERAL

This category covers motor-operated furniture, such as nonpatient care beds and lift chairs. This category also covers video display mounts incorporated as part of a furnishing (CRT, plasma, LCD and the like) intended to rest directly on the floor without casters, wheels, etc.

These products are provided with installation and use instructions when intended for permanent connection.

These systems are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

PRODUCT MARKINGS

Products intended for use only in dwelling units are marked ''Household Use Only''; products intended for use only in commercial settings are marked ''Commercial Use Only.'' If a product marking is not provided, the product may be used in both dwelling units and commercial settings.

Products suitable for outdoor use are marked ''Suitable for Outdoor Use.''

RELATED PRODUCTS

Furnishings with casters or wheels intended for use with audio/video equipment are covered under Carts and Stands for Household, Commercial and Professional Use Certified for Canada (CZUV7).

Tall carts with casters or wheels intended for use with audio/video equipment are covered under Carts, Tall Institutional Certified for Canada (CZWK7).

Furnishings supplied with all of the video and/or audio components by the manufacturer of those components are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7) and Audio/Video Apparatus Certified for Canada (AZSQ7).

Furnishings used for patient care or an individual under medical care are covered under Medical Equipment Certified for Canada (PIDF7).

ADDITIONAL INFORMATION

Motorized Furnishings Certified for Canada (IYNG7)−*Continued*

For additional information, see Furnishings Certified for Canada (IYMR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, ''Portable Luminaires,'' and CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial),'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Motorized Chair,'' or other appropriate product name as shown in the individual Listings.

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POWERED TABLE SYSTEMS CERTIFIED FOR CANADA (IYNI7)

USE AND INSTALLATION

This category covers tables intended to be electrically interconnected with each other (two or more) and frequently reconfigured. These tables are provided with receptacles for communication, power and/or video connection. They are used in conference rooms, in an office, library, home, or school setting.

This category also covers powered table systems with powered tables connected to one 15 A, 120 V branch circuit, intended for use in unclassified locations in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

These units are provided with installation and use instructions, and are intended to be installed in accordance with the CEC.

PRODUCT MARKINGS

Each powered table system component (such as a table top or electrical accessory that is shipped separately from the major powered table unit to which it is to be connected) is identified with respect to its intended use and interrelationship with the powered table system (e.g., ''For Use with Powered Table System Series ____''). If separable components are factory assembled and shipped together, only the complete assembly and not the component is marked.

These products are marked ''Commercial Use Only.''

RELATED PRODUCTS

Furnishings intended to be used in an office environment and that must be connected together both mechanically and electrically are covered under Office Furnishings Certified for Canada (QAWZ7).

ADDITIONAL INFORMATION

For additional information, see Furnishings Certified for Canada (IYMR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CSA Technical Information Letter No. A-30, ''Interim Certification Requirements for Power Table Systems for Residential and Commercial Use'' (February 27, 2004), and CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Powered Table System'' or ''Powered Table System Part for Use with [Company name] Powered Table System.''

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FURNITURE POWER DISTRIBUTION UNITS CERTIFIED FOR CANADA (IYNC7)

USE AND INSTALLATION

This category covers cord-connected furniture power distribution units rated 250 V ac or less, 16 A ac or less, intended for indoor use. These units consist of single- or multiple-outlet wiring devices that provide power for and are intended to be installed in commercial or household (residential) portable or stationary furnishings only. These units provide outlet receptacles for computers, audio and video equipment, and other equipment that is mounted on or in commercial or household (residential) portable or stationary furnishings. These units are provided with an attachment-plug cap and a flexible cord terminated in an enclosure in which are mounted one or more receptacles, which could include power, phone, data or video receptacles.

Furniture power distribution units may be provided with suitable fuses or other supplementary overcurrent protection, switches and indicator lights singularly or in any combination. These units may also employ surge suppression components (TVSS), electromagnetic interference (EMI) filter components and/or uninterruptible power-supply components. These units are intended only to be used by original equipment manufacturers (OEMs).

These units are not intended to function as general use relocatable power taps (RPTs), nor are they intended for use in fixed furnishings.

These units are intended to be directly connected to a branch circuit receptacle, and are not intended to be series connected (daisy chained) to other furniture power distribution units, extension cords, or similar devices.

RELATED PRODUCTS

Cord-connected multiple-outlet strips intended for general use (e.g., relocatable power taps) are covered under Relocatable Power Taps Certified for Canada (XBYS7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 21 (1990), ''Cord Sets and Power Supply Cords.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Furniture Power Distribution Unit,'' or other appropriate product name as shown in the individual Listings.

* *

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WALL AND CEILING MOUNTS AND ACCESSORIES CERTIFIED FOR CANADA (IYNW7)

USE

This category covers shelves, brackets, and similar devices that provide structural support for the mounting of audio/video equipment, information technology equipment, and similar products, to the building structure. They are intended for indoor use only unless marked ''Suitable for Outdoor Use.''

This category also covers accessories that are used to expand the capability of a mounting device. Accessories that are used to secure the mounting device to a wall, ceiling, suspended ceiling, truss, joist, ''I'' beam, or other building structural component specified by the manufacturer and the accessories used to secure equipment to the mount are covered. Examples of these products include extension columns, extension arms, ceiling plates, floor plates, ceiling brackets, fastener kits and VCR/DVD brackets.

INSTRUCTIONS AND PRODUCT MARKINGS

Cathode ray television (CRT) mounts are marked with the diagonal screen size and corresponding maximum weight of the television they are intended to support. Flat panel television or monitor mounts are marked with the maximum weight of the television they are intended to support. The intended load of all other supporting surfaces are identified in the instructions.

Mounts provided with electrical features are marked with their electrical ratings.

Mounting systems suitable for outdoor use are marked ''Suitable for Outdoor Use.''

Installation instructions are provided with each mount. The type of wall, ceiling or floor with which the mounting system was investigated for use is specified in the instructions (e.g., wood stud, steel stud, concrete, concrete block, clay brick, gypsum wallboard, lath, plaster).

RELATED PRODUCTS

Wall- and ceiling-mount supports supplied with the video and/or audio equipment by the video and/or audio equipment manufacturer are covered under Audio/Video Apparatus Certified for Canada (AZSQ7) or Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7) and are investigated to CAN/CSA-C22.2 No. 60065, ''Audio, Video and Similar Electronic Apparatus – Safety Requirements,'' or CAN/CSA-C22.2 No. 60950-1, ''Information Technology Equipment – Safety – Part 1: General Requirements,'' respectively.

Information technology and communications equipment cabinet, enclosure and rack systems are covered under Information Technology and Communications Equipment Cabinet, Enclosure and Rack Systems Certified for Canada (NWIN7) and are investigated to CAN/CSA-C22.2 No. 60950-1.

Custom-built telecommunications equipment cabinets and racks are covered under Custom-built Telecommunications Equipment Certified for Canada (WYKM7) and are investigated to CSA-C22.2 No. 225, ''Telecommunication Equipment,'' or CAN/CSA-C22.2 No. 60950-1, ''Information Technology Equipment – Safety – Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60950-21, ''Information Technology Equipment – Safety – Part 21: Remote Power Feeding.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60065 (2003), ''Audio, Video and Similar Electronic Apparatus – Safety Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Audio/Video Wall-mount Assembly,'' ''Audio/Video Ceiling-mount Assembly'' or ''Audio/Video Mount Accessory.''

* *

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FURNISHINGS, HOUSEHOLD AND COMMERCIAL CERTIFIED FOR CANADA (IYQX7)

USE

This category covers miscellaneous furnishings intended for use in homes and/or commercial establishments.

These furnishings are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and the manufacturer's markings and installation instructions.

PRODUCT MARKINGS

Products intended for use only in dwelling units are marked ''Household Use Only''; products intended for use only in commercial settings are marked ''Commercial Use Only.'' If there is no marking, then the product may be used in both dwelling units and commercial settings.

Products suitable for outdoor use are marked ''Suitable for Outdoor Use.''

RELATED PRODUCTS

Furnishings intended for installation in building structures or equivalent locations are covered under Building Components Certified for Canada (IYMT7).

Furnishings intended for the display of merchandise are covered under Commercial Displays Certified for Canada (IYMX7).

Furnishings intended to be used year-round (nonseasonal) that exist for an aesthetic enjoyment or ornamental purpose, such as lava lamps, low-wattage illuminated sculptures, glitter lamps, scrolling scenes, neon sculptures, strobe lamps, mirror balls, plasma lighting globes, motorized sculptures, optical fiber sculptures and wave machines are covered under Decorative Furnishings Certified for Canada (IYNA7).

FURNISHINGS, HOUSEHOLD AND COMMERCIAL CERTIFIED FOR CANADA (IYQX7)

Furnishings provided with or without power for such items as lighting and convenience receptacles incorporated within study carrels, consoles, curio cabinets, entertainment centers, headboards, bookcases, desks, and the like are covered under Furniture, Powered and Nonpowered Certified for Canada (IYNE7).

Motor-operated furniture, such as nonpatient care beds, lift chairs, video display mounts incorporated as part of a furnishing (CRT, plasma, LCD and the like) intended to rest on the floor and not incorporating casters, wheels, etc., is covered under Motorized Furnishings Certified for Canada (IYNG7).

Furnishings with casters or wheels intended for use with audio/video equipment are covered under Carts and Stands for Household, Commercial and Professional Use Certified for Canada (CZUV7).

Tall carts with casters or wheels intended for use with audio/video equipment are covered under Carts, Tall Institutional Certified for Canada (CZWK7).

Audio and video equipment mounting systems intended for mounting to walls, ceilings or another permanent part of a building are covered under Carts and Stands for Household, Commercial and Professional Use Certified for Canada (CZUV7).

Furnishings supplied with all of the video and/or audio components by the manufacturer of those components are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7) and Audio/Video Apparatus Certified for Canada (AZSQ7).

Furnishing tables intended to be electrically interconnected with each other (two or more), frequently reconfigured and provided with receptacles for communication, power and/or video connection. for use in conference rooms, in an office, library, or school setting are covered under Powered Table Systems Certified for Canada (IYNI7).

Equipment intended for use in hospitals or equivalent locations is covered under Medical Equipment Certified for Canada (PIDF7).

Other types of furnishings are covered under Tables, Utility Certified for Canada (WWJT7) and Massage and Exercise Machines Certified for Canada (PGXX7).

Motor-operated check-out stands (and associated foot and knee controls) intended for use in retail stores to facilitate tally and packing operations are covered under Motor-operated Check-out Stands Certified for Canada (DBNT7).

ADDITIONAL INFORMATION

For additional information, see Furnishings Certified for Canada (IYMR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, ''Portable Luminaires,'' CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial),'' CSA-C22.2 No. 250.0, ''Luminaires,'' and CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate product name as shown in the individual Listings.

* *

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FUSED POWER-CIRCUIT DEVICES CERTIFIED FOR CANADA (IYSR7)

GENERAL

This category covers the following devices:

- Enclosed fused power-circuit devices in which the switch is integral with the enclosure
- Open-type fused power-circuit devices intended for mounting in other equipment, such as switchboards, or in a separately shipped enclosure
- Enclosures intended for mounting open-type fused power-circuit devices

These fused power-circuit devices are either bolted-pressure contact switches or high-pressure butt-type contact switches, each defined as follows:

Bolted-pressure contact switch — A device in which the blade-jaw connections have an additional pressure or clamping action provided at both ends of the switch blades when the blades are in the fully closed position.

High-pressure butt-type contact switch — A device having butt-type contacts and a spring-charged mechanism.

USE AND INSTALLATION

Fused power-circuit devices suitable for use as service switches are marked ''Suitable for Use as Service Equipment.''

Some fused power-circuit devices incorporate neutrals factory bonded to the frame or enclosure. Such units are marked ''Suitable Only for Use as Service Equipment.''

Fused power-circuit devices marked for use at services may also be used to provide the main control and means of cutoff for a separately derived system, or for a second building.

Electrically tripped and/or operated fused power-circuit devices may be provided with ground-fault sensing and relaying equipment.

Devices suitable for ground-fault protection but the ground-fault protection sensors or relaying equipment (or both) are located in a separate enclosure are marked ''Suitable for Ground Fault Protection When Combined with Class ____ (or Manufacturer and Cat. No.) Ground Fault Sensing Element'' or the equivalent.

Devices for use with Class I ground-fault sensing and relaying equipment include those that are capable of interrupting 12 times their rated current or that have integral means to prevent disconnecting at levels of fault current exceeding their contact-interrupting capability.

Devices for use with Class II ground-fault sensing and relaying equipment are capable of interrupting 10 times their rated current and are intended for use in ground-fault protection systems where means to prevent disconnecting at levels of fault current exceeding their contact-interrupting capability are incorporated within the ground-fault sensing and relaying equipment.

Fused power-circuit devices have been investigated for connection to either busbars or pressure wire connectors. Unless the switch is marked ''For busbar connection only'' or the equivalent, it is provided with pressure wire connectors or marked for use with specific pressure wire connectors. Terminals are intended for use with copper conductors only unless the device is marked to indicate that terminals are also suitable for aluminum conductors.

RATINGS

These devices accommodate Class L or T fuses rated 600 V or less (ac or dc) and have been investigated for use at 100% of their marked ampere rating. The continuous-current rating of a fused power-circuit device is 800, 1200, 1600, 2000, 2500, 3000, 4000, 5000 or 6000 A.

These devices are intended for use on circuits having available fault currents of 100,000, 150,000 or 200,000 rms symmetrical amps or 20,000, 50,000, 100,000, 150,000 or 200,000 amps dc as indicated on the device.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 4, ''Enclosed and Dead-Front Switches.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Fused Power Circuit Device,'' ''Enclosed Fused Power-Circuit Device,'' ''Enclosed Fused Power-Circuit Device Suitable for Use as Service Equipment'' or ''Fused Power-Circuit Device Enclosure.''

On fused power-circuit devices with integral enclosures the Listing Mark is applied to the enclosure. On devices for use in other enclosures (open type) the Listing Mark is applied to the switching unit.

* *

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FUSEHOLDERS CERTIFIED FOR CANADA (IYXV7)

FUSEHOLDERS, CARTRIDGE FUSE CERTIFIED FOR CANADA (IZLT7)

GENERAL

This category covers fuseholders intended for use with Type CC, G, H, J, K, R, T and HRC fuses, special-purpose fuses, supplementary fuses, rejectors for Type C fuses, and adapters for Type S fuses.

An interrupting rating on a fuseholder included in a piece of equipment does not automatically qualify the equipment in which the fuseholder is installed for use on circuits with higher available currents than the rating of the equipment itself.

PRODUCT MARKINGS

Fuseholders are permanently marked with the name, trademark or other recognized symbol of identification of the manufacturer and the current and voltage for which they are constructed. The marked current rating of a fuseholder or adapter for a Type S fuse is so located that it is plainly visible after installation.

Rejectors for Type C noninterchangeable plug fuses are marked with the name, trademark, trade name or other recognized symbol of identification of the manufacturer, the type designation "C" and the rating in amperes.

A fuseholder with wiring terminals intended for use with copper or aluminum conductors is marked "CU-AL" (or equivalent).

A fuseholder with wiring terminals intended for use with aluminum conductors only is marked "AL" (or equivalent).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 4248.1, "Fuseholders – Part 1: General Requirements," in addition to one of the following as applicable:

CSA-C22.2 No. 4248.4, "Fuseholders – Part 4: Class CC"
CSA-C22.2 No. 4248.5, "Fuseholders – Part 5: Class G"
CSA-C22.2 No. 4248.6, "Fuseholders – Part 6: Class H"
CSA-C22.2 No. 4248.8, "Fuseholders – Part 8: Class J"
CSA-C22.2 No. 4248.9, "Fuseholders – Part 9: Class K"
CSA-C22.2 No. 4248.12, "Fuseholders – Part 12: Class R"
CSA-C22.2 No. 4248.15, "Fuseholders – Part 15: Class T"

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fuseholder" or "Cartridge Fuseholder."

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FUSES CERTIFIED FOR CANADA (JCQR7)

BRANCH-CIRCUIT FUSES CERTIFIED FOR CANADA (JCSA7)

This category covers fuses suitable to provide protection for branch and feeder circuits as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I." These fuses include:

Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7)
Cartridge Fuses, Renewable Certified for Canada (JDRX7)
Plug Fuses Certified for Canada (JEFV7)

Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7)

GENERAL

This category covers nonrenewable, cartridge-enclosed fuses, rated as follows:

Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7)−*Continued*

250 V	0 – 600 A
300 V	0 – 1200 A
600 V	0 – 6000 A

The fuse classes are further categorized as follows:

Class	In (A)	V	DC Rating	Interrupting Rating (kA)		Time Delay	Current-limiting	Body Sizes
				DC	AC			
CA	0 – 30	600	Optional	10, 20, 50, 100, 150 or 200	200	No	Yes	1
CB	0 – 60	600	Optional	10, 20, 50, 100, 150 or 200	200	No	Yes	2
CC	0 – 30	600	Optional	10, 20, 50, 100, 150 or 200	200	Optional	Yes	1
CD	31 – 60	600	Optional	10, 20, 50, 100, 150 or 200	200	Optional	Yes	1
G	0 – 20 21 – 60	600 480	Optional	10, 20, 50 or 100	100	Optional	Yes	4
H	0 – 600	250 or 600	Optional	10	10	Optional	No	6
J	0 – 600	600	Optional	10, 20, 50, 100, 150 or 200	200	Optional	Yes	6
K	0 – 600	250 600	Optional	10, 20, 50, 100, 150 or 200	50, 100 or 200	Optional	No	6 6
L	601 – 6000	600	Optional	20, 50, 100, 150 or 200	200	Optional	Yes	9
R	0 – 600	250 600	Optional	10, 20, 50, 100, 150 or 200	200	Optional	Yes	6 6
T	0 – 1200 0 – 800	300 600	Optional	10, 20, 50, 100, 150 or 200	200	Optional	Yes	8 7

These fuses are intended for use on ac circuits only, unless also marked with a dc voltage rating. These fuses are suitable for branch circuit, feeder and service overcurrent protection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

The term "current-limiting" indicates that a fuse, when tested on a circuit capable of delivering a specific short-circuit current (rms amperes symmetrical) at rated voltage, will start to melt within 90 electrical degrees and will clear the circuit within 180 electrical degrees (1/2 cycle).

Because the time required for a fuse to melt is dependent on the available current of the circuit, a fuse that may be current-limiting when subjected to a specific short-circuit current (rms amperes symmetrical) may not be current-limiting on a circuit of lower maximum available current.

Class K fuses incorporate dimensional features equivalent to, and are thus interchangeable with, Class H fuses.

Class R fuses incorporate features that permit their insertion into Class H and K fuseholders. They are also provided with a feature that allows their insertion into rejection-type fuseholders designed to accept only Class RK1 or RK5 fuses.

All classes covered under this category (with the exception of Class H) are further classified as to their maximum peak let-through current (I_p) and maximum clearing ampere-squared seconds (I^2t) as follows. These tables indicate the maximum permissible let-through values obtained when the fuse is connected to a circuit capable of providing the indicated available current.

Maximum Peak Let-through Current (I_p amperes) and Clearing I^2t (ampere-squared seconds)

Class CA Fuses

Rating (A)	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
0 – 60	8	6

Class CB Fuses

Rating (A)	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
1 – 30	10	10
31 – 60	15	60

Class CC Fuses

Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7)−*Continued*

Rating (A)	Between Threshold & 50 kA		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$ (A)	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
0 – 15	3	2	3	2	4	3
16 – 20	3	2	4	3	5	3
21 – 30	6	7	7.5	7	12	7

Class CD Fuses

Rating (A)	Between Threshold & 50 kA		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
31 – 60	8	30	10	30	16	30

Class G Fuses

Rating (A)	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
0 – 1	1	0.8
2 – 3	1.5	1.2
4 – 6	2	1.8
7 – 10	3	2.8
11 – 15	4	3.8
16 – 20	5	5
21 – 25	6	6
26 – 30	7	7
31 – 35	8	14
36 – 40	8.5	17
41 – 45	9	18.5
46 – 50	9.5	21
51 – 60	10.5	25

Class H fuses have an interrupting rating of 10,000 A (rms symmetrical) and are not classified as to their maximum peak let-through current (I_p) or maximum clearing ampere-squared seconds (I^2t).

Class J Fuses

Rating (A)	Between Threshold & 50 kA		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
1	6	7	1.0	0.8	12	7
3			1.5	1.2		
6			2.3	2.0		
10			3.3	3.0		
15			4.0	4.0		
20			5.0	5.0		
25			6.0	5.5		
30			7.5	7.0		
35	8	30	7.5	12	16	30
40			8.0	17		
45			8.5	18		
50			9.0	22		
60			10.0	30		
70	12	60	11.5	50	20	80
80			12.5	60		
90			13.5	75		
100			14.0	80		
110	16	200	14.5	100	30	300
125			15.5	150		
150			17.0	175		
175			18.5	225		
200			20.0	300		
225	25	1,000	22.5	350	45	1,100
250			24.0	450		
300			26.0	600		
350			29.0	800		
400			30.0	1,100		
450	35	2,500	36	1,500	70	2,500
500			42	2,000		
600			45	2,500		

Class K Fuses — Maximum permissible values when connected to circuits supplying 50 or 100 kA available current

Class	Rating (A)	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
K-1	0 – 30	10	10
	31 – 60	12	40
	61 – 100	16	100
	101 – 200	22	400
	201 – 400	35	1,200
	401 – 600	50	3,000

Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7)−*Continued*

Class	Rating (A)	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
K-5	0 – 30	11	50
	31 – 60	21	200
	61 – 100	25	500
	101 – 200	40	1,600
	201 – 400	60	5,000
	401 – 600	80	10,000
K-9	0 – 30	14	50
	31 – 60	28	250
	61 – 100	35	650
	101 – 200	60	3,500
	201 – 400	80	15,000
	401 – 600	130	40,000

Class K Fuses — Maximum permissible values when connected to circuits supplying 200 kA available current

Class	Rating (A)	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
K-1	0 – 30	12	11
	31 – 60	16	50
	61 – 100	20	100
	101 – 200	30	400
	201 – 400	50	1,600
	401 – 600	70	4,000
K-5	0 – 30	14	50
	31 – 60	26	200
	61 – 100	32	500
	101 – 200	50	2,000
	201 – 400	75	6,000
	401 – 600	100	12,000
K-9	0 – 30	14	50
	31 – 60	28	250
	61 – 100	35	650
	101 – 200	60	3,500
	201 – 400	80	15,000
	401 – 600	130	40,000

Class L Fuses

Rating (A)	50 kA or Threshold Current Whichever Is Greater		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^6$	$I_p \times 10^3$ (A)	$I^2t \times 10^6$	$I_p \times 10^3$ (A)	$I^2t \times 10^6$
601 – 800	80	10	80	10	80	10
801 – 1200	80	12	80	12	120	15
1201 – 1600	100	22	100	22	150	30
1601 – 2000	110	35	120	35	165	40
2001 – 2500	—	—	165	75	180	75
2501 – 3000	—	—	175	100	200	100
3001 – 4000	—	—	220	150	250	150
4001 – 5000	—	—	—	350	300	350
5001 – 6000	—	—	—	350	350	500

Class RK1 Fuses

Rating (A)	Between Threshold & 50 kA		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
0 – 30	6	10	10	10	12	11
31 – 60	10	40	12	40	16	50
61 – 100	14	100	16	100	20	100
101 – 200	18	400	22	400	30	400
201 – 400	33	1,200	35	1,200	50	1,600
401 – 600	45	3,000	50	3,000	70	4,000

Class RK5 Fuses

Rating (A)	Between Threshold & 50 kA		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
0 – 30	11	50	11	50	14	50
31 – 60	20	200	21	200	26	200
61 – 100	22	500	25	500	32	500
101 – 200	32	1,600	40	1,600	50	2,000
201 – 400	50	5,200	60	5,000	75	6,000
401 – 600	65	10,000	80	10,000	100	12,000

Class T Fuses – 300 V

Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7)−*Continued*

Rating (A)	Between Threshold & 50 kA		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
1	5	3.5	0.8	0.4	9.0	3.5
3			1.3	0.6		
6			2.0	1.0		
10			3.0	1.5		
15			4.0	2.0		
20			4.5	2.5		
25			5.5	2.7		
30			7.0	3.5		
35	7	15	7.0	6.0	12.0	15.0
40			7.2	8.5		
45			7.6	9.0		
50			8.0	11.0		
60			9.0	15.0		
70	9	40	10.0	25.0	15.0	40.0
80			10.7	30.0		
90			11.6	38.0		
100			12	40.0		
110	13	150	12	50	20	150
125			13	75		
150			14	88		
175			15	115		
200			16	150		
225	22	550	21	175	35	550
250			22	225		
300			24	300		
350			27	400		
400			28	550		
450	29	1,000	32	600	46	1,000
500			37	800		
600			37	1,000		
700	37	1,500	45	1,250	65	1,500
800			50	1,500		
1,000	50	3,500	65	3,500	80	4,000
1,200			65	3,500		

Class T Fuses – 600 V

Rating (A)	Between Threshold & 50 kA		100 kA		200 kA	
	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$	$I_p \times 10^3$ (A)	$I^2t \times 10^3$
1	6	7	1.0	0.8	12	7
3			1.5	1.2		
6			2.3	2.0		
10			3.3	3.0		
15			4.0	4.0		
20			5.0	5.0		
25			6.0	5.5		
30			7.5	7.0		
35	8	30	7.5	12	16	30
40			8.0	17		
45			8.5	18		
50			9.0	22		
60			10.0	30		
70	12	60	11.5	50	20	80
80			12.5	60		
90			13.5	75		
100			14.0	80		
110	16	200	14.5	100	30	300
125			15.5	150		
150			17.0	175		
175			18.5	225		
200			20.0	300		
225	25	1,000	22.5	350	45	1,100
250			24.0	450		
300			26.0	600		
350			29.0	800		
400			30.0	1,100		
450	35	2,500	36	1,500	70	2,500
500			42	2,000		
600			45	2,500		
700	50	4,000	50	3,500	75	4,000
800			55	4,000		

PRODUCT MARKINGS

All devices covered under this category are marked with:

1. The manufacturer's name or trademark (or both)
2. The current rating
3. The voltage rating
4. The interrupting rating in rms symmetrical and/or dc amperes
5. The device class or classification

Class H fuses rated 250 V, 15 – 60 A are designated as low-melting-point fuses and are identified by the symbol "P."

Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7)−*Continued*

When a fuse has a dc rating, it is marked with the dc voltage and interrupting rating.

Equipment (a switch, motor starter, panelboard, etc.) investigated for use with these fuses is marked with the class of fuse intended to be used in the equipment, and available current rating applicable to that piece of equipment. The equipment, with these fuses installed, is suitable for use on circuits having a maximum available fault current up to the short-circuit rating of the equipment, or the interrupting rating of the fuse, whichever is lower.

An interrupting rating on a fuse included in a piece of equipment does not automatically qualify the equipment in which the fuses are installed for use on circuits with higher available currents than the rating of the equipment itself.

Class CC, CD, G, H, J, K, L, R and T fuses may be marked as having a time-delay characteristic, such as "Time Delay," "Dual Element," or other equivalent designation.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CSA-C22.2 No. 248.1, "Low-Voltage Fuses – Part 1: General Requirements"
CSA-C22.2 No. 248.3, "Low-Voltage Fuses – Part 3: Class CA and CB Fuses"
CSA-C22.2 No. 248.4, "Low-Voltage Fuses – Part 4: Class CC Fuses"
CSA-C22.2 No. 248.5, "Low-Voltage Fuses – Part 5: Class G Fuses"
CSA-C22.2 No. 248.6, "Low-Voltage Fuses – Part 6: Class H Nonrenewable Fuses"
CSA-C22.2 No. 248.8, "Low-Voltage Fuses – Part 8: Class J Fuses"
CSA-C22.2 No. 248.9, "Low-Voltage Fuses – Part 9: Class K Fuses"
CSA-C22.2 No. 248.10, "Low-Voltage Fuses – Part 10: Class L Fuses"
CSA-C22.2 No. 248.12, "Low-Voltage Fuses – Part 12: Class R Fuses"
CSA-C22.2 No. 248.15, "Low-Voltage Fuses – Part 15: Class T Fuses"

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fuse."

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Cartridge Fuses, Renewable Certified for Canada (JDRX7)

GENERAL

This category covers nonrenewable, cartridge-enclosed fuses, rated as follows:

Class	In (A)	V	DC Rating	Interrupting Rating (kA)		Time Delay	Current-limiting	Body Sizes
H	0 – 600	250	Optional	DC	AC	Optional	No	6
		600		10	10			6

These fuses are intended for use on ac circuits only unless also marked with a dc voltage rating.

These fuses are suitable for branch circuit, feeder and service overcurrent protection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Renewable fuses of a given voltage rating or current rating range are not interchangeable in the same fuseholder with fuses of a different voltage rating or current rating range.

Each line of renewable links has been investigated only with the same line of fuses from the same manufacturer.

PRODUCT MARKINGS

All devices covered under this category are marked with:

1. The manufacturer's name or trademark (or both)
2. The current rating
3. The voltage rating
4. The interrupting rating in rms symmetrical and/or dc amperes
5. The device class or classification
6. The word "Renewable"

In addition, each renewal element covered under this category is marked with:

1. The manufacturer's name or trademark (or both)

Cartridge Fuses, Renewable Certified for Canada (JDRX7)−*Continued*

2. The current rating
3. The voltage rating

When a fuse has a dc rating, it is marked with the dc voltage and interrupting rating.

Equipment (a switch, motor starter, panelboard, etc.) that has been investigated for use with these fuses is marked with the class of fuse intended to be used in the equipment, and available current rating applicable to that piece of equipment. The equipment, with these fuses installed, is suitable for use on circuits having a maximum available fault current up to the short-circuit rating of the equipment, or the interrupting rating of the fuse, whichever is lower.

An interrupting rating on a fuse included in a piece of equipment does not automatically qualify the equipment in which the fuses are installed for use on circuits with higher available currents than the rating of the equipment itself.

Fuses may be marked as having a time-delay characteristic, such as "Time Delay," "Dual Element," or other equivalent designation.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 248.1 (2000), "Low-Voltage Fuses – Part 1: General Requirements," and CSA-C22.2 No. 248.7 (2000), "Low-Voltage Fuses – Part 7: Class H Renewable Fuses."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fuse" or "Fuse Renewal."

The Listing Mark for fuses is marked on the product; the Listing Mark for fuse renewals is marked on each carton containing fuse renewals, with or without the UL Mark for Canada symbol on the renewal.

* *

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Plug Fuses Certified for Canada (JEFV7)

GENERAL

This category covers nonrenewable Type C and Type S plug fuses.

These fuses have the following characteristics:

Type	I_N (A)	V	DC Rating	Interrupting Rating (kA)	Time Delay	Current-limiting	Body Types
Type C	0 – 30	125	Optional	10	Optional	No	3
Type S							3

PRODUCT MARKINGS

The devices covered under this category, at a minimum, are marked with:

1. The manufacturer's name or trademark (or both)
2. The device current rating
3. Plug fuses designated as low-melting-point fuses are identified by the symbol "P"
4. Plug fuses designated as time-delay fuses are identified by the symbol "D"

In addition, these devices are not marked "Current-limiting."

Devices rated 15 A or less have a prominent hexagonal feature.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 248.1 (2000), "Low-Voltage Fuses – Part 1: General Requirements," and CSA-C22.2 No. 248.11 (2000), "Low-Voltage Fuses – Part 11: Plug Fuses."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fuse."

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Plug Fuses Certified for Canada (JEFV7)−*Continued*

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DEFINED-USE FUSES CERTIFIED FOR CANADA (JDUA7)

This category covers fuses intended for specific and defined use. These fuses include:

Special-purpose Fuses Certified for Canada (JFHR7)

Special-purpose Fuses Certified for Canada (JFHR7)

GENERAL

This category covers fuses rated 0 – 6,000 A, 0 – 1,000 V with interrupting ratings up to 300,000 A. These fuses are designed for special-purpose applications such as in combination with low-voltage power circuit breakers, in combination with TVSS devices or in combination with capacitors. If they do not incorporate dimensional or other rejection features which make them noninterchangeable with certified classes of renewable and nonrenewable fuses, then they have been investigated and found to comply with all of the performance requirements applicable to certified classes of renewable and nonrenewable fuses for which they may be substituted.

PRODUCT MARKINGS

All devices covered under this category are marked with:

1. The manufacturer's name or trademark (or both)
2. The current rating
3. The voltage rating
4. The interrupting rating in rms symmetrical and/or dc amperes (when not so marked, the interrupting rating is 10,000 A (rms symmetrical)
5. The words "Time Delay" (for qualifying fuses only)
6. The words "Current-limiting" (for qualifying fuses only)
7. These devices may also be marked to indicate if their performance is dependent upon the equipment with which they are designed to be used
8. Fuses that comply with all of the dimensional and performance requirements applicable to a certified class of cartridge fuse may be marked "This fuse may substitute for a Listed Class ___ Fuse," where the appropriate fuse class is placed in the blank
9. Fuses that comply with all of the performance requirements applicable to a certified class of cartridge fuse, but do not comply with the dimensional requirements for that fuse may be marked "This fuse meets the performance specifications for a Class ___ Fuse," or the equivalent

RELATED PRODUCTS

For classes of renewable and nonrenewable cartridge fuses, see Cartridge Fuses, Nonrenewable Certified for Canada (JDDZ7), Cartridge Fuses, Renewable Certified for Canada (JDRX7) and Plug Fuses Certified for Canada (JEFV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 248.1 (2000), "Low-Voltage Fuses – Part 1: General Requirements."*

Additional standards may be used as follows:

CSA	International
CSA-C22.2 No. 248.2 (2000)	
CSA-C22.2 No. 248.3 (2000)	
CSA-C22.2 No. 248.4 (2000)	
CSA-C22.2 No. 248.5 (2000)	
CSA-C22.2 No. 248.6 (2000)	
CSA-C22.2 No. 248.7 (2000)	
CSA-C22.2 No. 248.8 (2000)	
CSA-C22.2 No. 248.9 (2000)	
CSA-C22.2 No. 248.10 (2000)	
CSA-C22.2 No. 248.11 (2000)	
CSA-C22.2 No. 248.12 (2000)	
CSA-C22.2 No. 248.13 (2000)	
CSA-C22.2 No. 248.14 (2000)	
CSA-C22.2 No. 248.15 (2000)	
CSA-C22.2 No. 248.16 (2000)	
	ANSI/IEEE C37.40 (1993)
	IEEE C37.41 (2000)
	ANSI/IEEE C37.42 (1996)

Special-purpose Fuses Certified for Canada (JFHR7)−*Continued*

CSA	International
	ANSI/IEEE C37.46 (2000)
	ANSI/IEEE C37.47 (2000)
	ANSI/IEEE C37.48 (1997)
	ANSI/IEEE C37.53.1 (1996)
	IEC 60269-2-1, Ed. 4
	IEC 60127-1
	IEC 60127-1
	IEC 60127-2
	IEC 60127-3
	IEC 60127-4
	IEC 60127-5

* CSA-C22.2 No. 248.2 (2000), "Low-Voltage Fuses – Part 2: Class C Fuses"
* CSA-C22.2 No. 248.3 (2000), "Low-Voltage Fuses – Part 3: Class CA and CB Fuses"
* CSA-C22.2 No. 248.4 (2000), "Low-Voltage Fuses – Part 4: Class CC Fuses"
* CSA-C22.2 No. 248.5 (2000), "Low-Voltage Fuses – Part 5: Class G Fuses"
* CSA-C22.2 No. 248.6 (2000), "Low-Voltage Fuses – Part 6: Class H Nonrenewable Fuses"
* CSA-C22.2 No. 248.7 (2000), "Low-Voltage Fuses – Part 7: Renewable Fuses"
* CSA-C22.2 No. 248.8 (2000), "Low-Voltage Fuses – Part 8: Class J Fuses"
* CSA-C22.2 No. 248.9 (2000), "Low-Voltage Fuses – Part 9: Class K Fuses"
* CSA-C22.2 No. 248.10 (2000), "Low-Voltage Fuses – Part 10: Class L Fuses"
* CSA-C22.2 No. 248.11 (2000), "Low-Voltage Fuses – Part 11: Plug Fuses"
* CSA-C22.2 No. 248.12 (2000), "Low-Voltage Fuses – Part 12: Class R Fuses"
* CSA-C22.2 No. 248.13 (2000), "Low-Voltage Fuses – Part 13: Semiconductor Fuses"
* CSA-C22.2 No. 248.14 (2000), "Low-Voltage Fuses – Part 14: Supplemental Fuses"
* CSA-C22.2 No. 248.15 (2000), "Low-Voltage Fuses – Part 15: Class T Fuses"
* CSA-C22.2 No. 248.16 (2000), "Low-Voltage Fuses – Part 16: Test Limiters"

ANSI/IEEE C37.40 (1993), "Standard Service Conditions and Definitions for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories"
IEEE C37.41 (2000), "Standard Design Test for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories"
ANSI/IEEE C37.42 (1996), "Specification for High-Voltage Expulsion Type Distribution Class Fuses, Cutouts, Fuse Disconnecting Switches and Fuse Links (Replaces NEMA C37.42-1996)"
ANSI/IEEE C37.46 (2000), "High Voltage Expulsion and Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches"
ANSI/IEEE C37.47 (2000), "High Voltage Current-Limiting Type Distribution Class Fuses and Fuse Disconnecting Switches"
ANSI/IEEE C37.48 (1997), "Guide for the Application, Operation, and Maintenance of High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories"
ANSI/IEEE C37.53.1 (1996), "High Voltage Current-Limiting Motor-Starter Fuses – Conference Test Procedures"
IEC 60269-2-1, Ed. 4, "Low-Voltage Fuses – Part 2-1: Supplementary Requirements for Fuses for Use by Authorized Persons (Fuses Mainly for Industrial Applications) – Sections I to VI: Examples of Standardized Fuses"
IEC 60127-1, "Miniature Fuses" (general title)
IEC 60127-1, "Part 1: Definitions for Miniature Fuses and General Requirements for Miniature Fuse-Links"
IEC 60127-2, "Part 2: Cartridge Fuse-Links"
IEC 60127-3, "Part 3: Sub-Miniature Fuse-Links"
IEC 60127-4, "Part 4: Universal Modular Fuse-Links"
IEC 60127-5, "Part 5: Guidelines for Quality Assessment of Miniature Fuse-Links"

* Tri-national harmonized standard

Where additional standards are used, they are identified in the individual certifications or marked on the product.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Special-purpose Fuses Certified for Canada (JFHR7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fuse."

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FUSES, SUPPLEMENTAL CERTIFIED FOR CANADA (JDYX7)

GENERAL

This category covers supplemental fuses, which are also described as miscellaneous, miniature, and micro fuses. These fuses provide supplemental protection in end-use equipment to provide protection for components or internal circuits. They are not suitable for branch or feeder circuit use. Physical dimensions are not specified, but dimensional limitations apply to prevent insertion of supplementary protection fuses into branch or feeder circuit fuseholders intended to accommodate branch or feeder circuit fuses of the Class CA, CB, CC, CD, G, H, J, K, L, R or T Type.

Micro fuses are supplemental fuses with no principal dimension (length, width, height or diameter) exceeding 10 mm (excluding leads).

The devices covered under this category are rated as follows:

Type	I_N (A)	V	DC Rating	Min Interrupting Rating (kA)	Time Delay	Current-limiting
Miscellaneous or Miniature fuse	0 – 60	<125	Optional	>I_N	Optional	No
Miscellaneous or Miniature fuse	0 – 60	125	Optional	10, 50 or 100	Optional	No
Miscellaneous or Miniature fuse	0 – 1	125/250	Optional	10, 50 or 100 at 125 V 0.035 at 250 V	Optional	No
Miscellaneous or Miniature fuse	1.1 – 3.5	125/250	Optional	10, 50 or 100 at 125 V 0.10 at 250 V	Optional	No
Miscellaneous or Miniature fuse	3.6 – 10	125/250	Optional	10, 50 or 100 at 125 V 0.20 at 250 V	Optional	No
Miscellaneous or Miniature fuse	10.1 – 15	125/250	Optional	10, 50 or 100 at 125 V 0.75 at 250 V	Optional	No
Miscellaneous or Miniature fuse	15.1 – 30	125/250	Optional	10, 50 or 100 at 125 V 1.5 at 250 V	Optional	No
Miscellaneous or Miniature fuse	30 – 60	125/250	Optional	10, 50 or 100 at 125 V 10, 50 or 100 at 250 V	Optional	No
Micro fuse	0 – 60	Any	Optional	0.050	Optional	No

PRODUCT MARKINGS

Devices covered under this category are marked as follows:

Fuses, Supplemental Certified for Canada (JDYX7)−*Continued*

Type	Required Fuse Markings		Required Smallest Package Markings
Miscellaneous or Miniature fuse	Manufacturer's name or trademark (or both) Device current rating Device voltage rating Device interrupting rating The words "Time Delay" or the letter "D" if device is a time delay type	or or	Manufacturer's name or trademark (or both) Device current rating Device voltage rating Device interrupting rating The words "Time Delay" or the letter "D" if device is a time delay type
Micro fuse	Device current rating		Manufacturer's name or trademark (or both) Device current rating Device voltage rating Device interrupting rating The words "Time Delay" or the letter "D" if device is a time delay type

If a color code is used to mark a micro fuse to designate voltage, interrupting rating or time delay type, the color code scheme is marked on the smallest package.

Devices covered under this category are not marked "Current-limiting."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 248.1 (2000), "Low-Voltage Fuses – Part 1: General Requirements," and CSA-C22.2 No. 248.14 (2000), "Low-Voltage Fuses – Part 14: Supplemental Fuses."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Supplemental Fuse," "Miscellaneous Fuse," "Miniature Fuse" or "Micro Fuse."

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FUSIBLE LINKS CERTIFIED FOR CANADA (JGIX7)

USE AND INSTALLATION

This category covers fusible links intended for use in connection with automatic closing devices for doors and windows, and other automatic devices requiring fusible links. The response characteristics of these links may be either Standard Response or Quick Response. Links are Standard Response unless otherwise specified in the individual certifications.

These devices are intended for installation under load conditions within the ranges specified in the individual certifications.

TEMPERATURE RATINGS

Links are marked with the temperature ratings. The common temperature ratings of fusible links are as follows:

Temp Class	Max Ambient Temp, °C	Temp Rating, °C
Low	32	52-54
Ordinary	38	57-77
Intermediate	66	79-107
High	107	121-149
Extra High	149	163-191
Very Extra High	191	204-246
Ultra High	246	260-302

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7), Fire Resistance Ratings Certified for Canada (BXRH7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S505, "Fusible Links for Fire Protection Service".

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fusible Link" or "Heat Responsive Link."

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GARAGE EQUIPMENT CERTIFIED FOR CANADA (JGWV7)

USE AND INSTALLATION

This category covers electrically operated equipment, rated 600 V or less, intended primarily for use in servicing and repairing automobiles. Such equipment is intended to be used mainly in commercial garages and gasoline dispensing and service stations. Unless specifically marked for hazardous locations use, products are intended for use in an area that is considered unclassified based on the classification in CAN/CSA-C22.1 (1998), "Canadian Electrical Code, Part I" (CEC).

Some of the equipment covered under this category incorporates parts that tend to produce arcs or sparks and, therefore, when installed in commercial garages and gasoline dispensing and service stations, should be in areas or enclosures suitable for the purpose in accordance with the provisions of the CEC. Products incorporating arcing or sparking parts located above 50 mm (2 inches) from floor level (i.e., in an area considered unclassified by the CEC) are provided with instructions which specify that the equipment is not to be installed in a recessed floor area. Products such as dynamometers, incorporating arcing or sparking parts located below 50 mm (2 inches) from the floor, or below floor level, are marked for use in a Class I, Zone 2 location.

RELATED PRODUCTS

Battery chargers are covered under Battery Chargers, Nonautomotive Type Certified for Canada (BBML7).

Refrigerant recyclers and air-conditioning charging stations are covered under Refrigerant Recovery/Recycling Equipment, Automotive Certified for Canada (SCMA7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 68 (1992), "Motor Operated Appliances" and CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements."

UL MARK

This Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

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GARDENING APPLIANCES CERTIFIED FOR CANADA (JHKT7)

USE

This category covers motor-operated gardening appliances, such as lawn mowers of the reel and rotary walking types, hedge trimmers, edgers, trimmers, edger-trimmers, grass shears, cultivators, shredder-baggers, etc., for use on nominal system voltages of 250 V and less in unclassified locations and designed to be used in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

This category does not cover sprayers, foggers, and other specific appliances not covered by CAN/CSA-C22.2 No. 147 (1990), "Motor-Operated Gardening Appliances."

Except for gardening appliances marked "double insulated," all gardening appliances are provided with means for grounding. Double-insulated gardening appliances require normal care in handling. They should not be used under conditions that would be considered hazardous with gardening appliances of conventional construction, i.e., with either the gardening appliance or user in contact with water.

SPECIAL CONSIDERATIONS

These products have been investigated from the standpoint of risk of personal injury and fire.

Some products in this category have cutting or moving parts, presenting certain inherent hazards related to risk of injury that cannot be wholly eliminated by practical design features. The products are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of injury where consideration has been given to the required utility of the product. Such risks have been reduced to an acceptable degree in the certified equipment.

Attachments that perform functions other than intended by the basic design have not been investigated unless specifically mentioned in the individual certifications and covered in the installation and use instructions.

FACTORS NOT INVESTIGATED

Any potential health effects that may be associated with the use of gardening appliances, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category, with the exception of hedge trimmers, is CAN/CSA-C22.2 No. 147 (1990), "Motor-Operated Gardening Appliances."

The basic standards used to investigate hedge trimmers in this category are CAN/CSA-C22.2 No. 60745-1 (2007), "Hand-Held Motor-Operated Electric Tools – Safety – Part 1: General Requirements," and CAN/CSA-C22.2 No. 60745-2-15 (2010), "Hand-Held Motor-Operated Electric Tools – Safety – Part 2-15: Particular Requirements for Hedge Trimmers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gardening Appliance."

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GAS APPLIANCE ELECTRIC ACCESSORIES CERTIFIED FOR CANADA (JHYR7)

GENERAL

This category covers electric accessories for use solely on or with gas appliances and that can be applied without alteration to the appliance.

They are intended for household, commercial or industrial use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Electric accessories suitable for use in gas appliances but also suitable for use in electric and/or oil appliances are included under the category applicable to the specific accessory.

PRODUCT MARKINGS

Gas appliance electric accessories are marked with the company's name or trademark, a distinctive catalog number, and the electrical ratings. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Safety controls for gas- and oil-fired appliances, electric central furnaces, boilers and duct heaters are covered under Controls, Limit Certified for Canada (MBPR7), Controls, Primary Safety Certified for Canada (MCCZ7) or Switches Certified for Canada (MFHX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following:

CSA-C22.2 No. 24, "Temperature-Indicating and -Regulating Equipment"

CAN/CSA-C22.2 No. 199, "Combustion Safety Controls and Solid-State Igniters for Gas- and Oil-Burning Equipment"

ANSI Z21.77/CSA 6.23, "Manually Operated Piezo-Electric Spark Gas Ignition Systems and Components"

ANSI Z21.92/CSA 6.29, "Manually Operated Electric Gas Ignition Systems and Components"

The standard designation is noted in the individual certification reports.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Gas Appliance Electric Accessory," or other appropriate product name as shown in the individual Listings.

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GASOLINE-POWERED EQUIPMENT CERTIFIED FOR CANADA (JOKP7)

CHAIN SAWS CERTIFIED FOR CANADA (JOOW7)

USE

This category covers Type 1 fuel-powered chain saws. These chain saws are divided into three broad groups:

Class 1A – Professional chain saws — Intended for use by trained workers, where the operator is expected to use the chain saw for extended periods of time on a daily basis.

Class 1B – Industrial chain saws — For tree-service work, limited to a maximum dry weight of 4.3 kg (9.5 lb), and intended for use by trained workers, where the operator is expected to use the chain saw for extended periods of time on a daily basis.

Class 1C – Consumer chain saws — Intended for general use by homeowners, cottagers, campers, etc., and for general applications such as clearing, pruning, and cutting firewood.

SPECIAL CONSIDERATIONS

These products are investigated from the standpoint of risk of personal injury and fire.

Some products in this category have cutting or moving parts, presenting certain inherent hazards related to risk of injury that cannot be wholly eliminated by practical design features. The products are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of injury where consideration has been given to the required utility of the product. Such risks have been reduced to an acceptable degree in the certified equipment.

Attachments that perform functions other than intended by the basic design have not been investigated unless specifically mentioned in the individual certifcations and covered in the installation and use instructions.

FACTORS NOT INVESTIGATED

Chain Saws Certified for Canada (JOOW7)–*Continued*

Any potential health effects that may be associated with the use of chain saws, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents, have not been investigated.

RELATED PRODUCTS

Saw chain intended for use on gasoline-powered chain saws is covered under Saw Chain Certified for Canada (TSZQ7).

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-Z62.1 (2011), ''Chain Saws,'' and CSA-Z62.3 (2011), ''Chain Saw Kickback.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Chain Saw'' or ''Gasoline Powered Chain Saw.''

* *

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GAS SYSTEMS, COMPRESSED CERTIFIED FOR CANADA (JOVV7)

ACCESSORIES, GAS SYSTEM CERTIFIED FOR CANADA (JPJT7)

The various accessories following are for use primarily by manufacturers and distributors of compressed gas systems and are adapted to the type of gas and working pressures encountered in general use. Other accessories for gas systems are separately classified under Fittings, Gauges, Regulators, Valves, etc.

Vaporizers, LP-gas System Certified for Canada (JRMV7)

USE AND INSTALLATION

This category covers vaporizers intended for use in conjunction with aboveground LP-gas storage containers for converting the liquid phase of LP-gas to the vapor phase by means other than atmospheric heat transfer through the surface of the container. They may be direct fired, indirect fired, waterbath, or electric types, as indicated in the individual certifications.

Vaporizers are intended to be installed in accordance with CSA B149.2, ''Propane Storage and Handling Code.''

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''LP-Gas System Vaporizer.''

* *

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GAS AND VAPOR DETECTION EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (JTNQ7)

GAS AND VAPOR DETECTION EQUIPMENT ENCLOSURES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (JTOL7)

USE

This category covers enclosures intended for use in one or more of the following hazardous locations, as indicated on the individual product, in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'': Class I, Groups A, B, C and D; Class II, Groups E, F and G.

This category covers only the enclosures. Gas sensors or other devices that may be contained within these enclosures are not covered under this category.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ENCLOSURE FOR USE IN HAZARDOUS LOCATIONS
AS TO FIRE AND EXPLOSION HAZARD ONLY
Control No.

* *

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GAS AND VAPOR DETECTION EQUIPMENT CLASSIFIED FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (JTPD7)

sa

USE AND INSTALLATION

This category covers gas and vapor detectors and associated equipment designed for detecting specific gases and vapors that may be present in the atmosphere, incidental to operations or from accidental release, and for determining the extent of such release. They may be (1) of the portable type powered by batteries, (2) intended for permanent installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' or (3) intended for installation in panel assemblies in accordance with the instructions provided.

These detectors have been investigated for risk of explosion, fire and electric shock only. Additionally, detectors intended for detection of combustible gases and vapors are investigated for performance. They have not been investigated for performance relative to their ability to detect other gases or vapors, such as toxic gases, or for oxygen depletion.

RELATED PRODUCTS

Gas detectors investigated for their performance relative to their ability to detect gas are covered under Gas and Vapor Detection Equipment Listed for Use in Hazardous Locations Certified for Canada (JTPX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standards used to investigate products in this category are CSA-C22.2 No. 14 (1985), ''Industrial Control Equipment,'' and CSA-C22.2 No. 152 (1984), ''Combustible Gas Detection Instruments.''

Gas and Vapor Detection Equipment Classified for Use in Hazardous Locations Certified for Canada (JTPD7)−*Continued*

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*] FOR USE IN HAZARDOUS LOCATIONS ONLY AS TO INTRINSIC SAFETY
Control No.
or

[PRODUCT IDENTITY*] FOR USE IN HAZARDOUS LOCATIONS AS TO FIRE, ELECTRICAL SHOCK AND EXPLOSION HAZARDS ONLY
Control No.

* **(COMBUSTIBLE) GAS DETECTOR** or **(COMBUSTIBLE) VAPOR DETECTOR** (the word ''Combustible'' in the product identity is optional)

The words ''Hazardous Locations'' may be abbreviated ''Haz. Loc.'' or ''Haz. Locs.''

* *

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GAS AND VAPOR DETECTION EQUIPMENT LISTED FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (JTPX7)

GENERAL

This category covers gas and vapor detectors and associated equipment intended for detecting specific gases and vapors that may be present in the atmosphere incidental to operations or from accidental release and for determining the extent of such release. They may be (1) of the portable type powered by batteries, (2) intended for permanent installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' or (3) intended for installation in panel assemblies in accordance with the instructions provided.

These products have been investigated with respect to risk of explosion, fire, electric shock and injury to persons.

Gas and vapor detectors in any of the groups under Class I hazardous locations have been tested with respect to safety of operation of the instrument in the presence of flammable and explosive mixtures of representative gases and vapors with air. The flame arresters provided in the intake and suction lines of these instruments have been tested in the presence of flammable and explosive mixtures representative of the gases and vapors that the instruments are designed to detect and of the hazardous locations for which the detector has been certified. Associated equipment may not necessarily be suitable for use in hazardous locations.

These instruments, when installed, maintained and operated in compliance with the manufacturer's instructions, indicate the percentage of concentration or percentage of the lower flammable limits of the specific gases and vapors. In some cases, meter readings must be interpreted in accordance with calibration data furnished by the manufacturer.

Gas and vapor detectors should be calibrated and inspected by the operator in compliance with the manufacturer's instructions, as performance of the instruments will depend on proper maintenance. The instruments should be calibrated with known gas- or vapor-air mixtures at intervals, and particularly after replaceable sensors incorporated in the detecting unit are replaced. Certain gases and vapors may adversely affect (poison) the sensors, and the use of the instruments in sampling atmospheres containing gases or vapors for which they have not been previously calibrated should, therefore, be avoided.

Minor variations in the flow of sample aspirated to the detecting unit do not affect the operation of these instruments to any great extent. However, as the instruments become inoperative in the event of clogging of sampling lines, flame arresters or filters, precautions should be taken to keep these components clean and free from obstructions. Where condensation of vapors occurs in the detecting unit, or in the sampling lines and fittings, erroneously low indications by the instrument may result. Absorption of appreciable amounts of certain gases and vapors by nonmetallic tubing used as sampling lines may also result in incorrect indications by the instrument.

Gas and Vapor Detection Equipment Listed for Use in Hazardous Locations Certified for Canada (JTPX7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standards used to investigate products in this category are CSA-C22.2 No. 14 (1985), ''Industrial Control Equipment,'' and CSA-C22.2 No. 152 (1984), ''Combustible Gas Detection Instruments.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''(Combustible) Gas Detector for Hazardous Locations'' or ''(Combustible) Vapor Detector for Hazardous Locations,'' or other appropriate product name as shown in the individual Listings. The word ''Combustible'' in the product name is optional.

* *

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GAUGES CERTIFIED FOR CANADA (JUDV7)

GAUGES, HIGH-PRESSURE GAS CERTIFIED FOR CANADA (JURT7)

USE

This category covers bourdon tube gauges intended for use in connection with apparatus using gases under high pressure, including oxygen, hydrogen, and other hydrocarbon gases, nitrous oxide and other gases which do not seriously affect materials of gauges. These gauges usually have pressure ranges of 0 – 1500, 0 – 2000, 0 – 3000, or 0 – 4000 psi. Gauges are constructed so that if bursts of the elastic element, or its means for joining occur, due to an internal explosion or other application of excessive pressure, no part of the gauge is propelled or thrown from the assembly.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C404 (1974), ''Guide for the Investigation of Gauges, Indicating Pressure for Compressed Gas Service.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''High Pressure Gas Gauge for [type of gas].''

* *

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LIQUID-LEVEL GAUGES CERTIFIED FOR CANADA (JXIT7)

Anhydrous-ammonia Liquid-level Gauges Certified for Canada (JXWR7)

USE

This category covers liquid-level gauges and liquid-level vent valves intended for use in nonrefrigerated systems in installations covered by CSA B51, "Boiler, Pressure Vessel, and Pressure Piping Code," where the maximum working pressure does not exceed 1720 kPa gauge pressure.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C565 (1975), "Guide for the Investigation of Liquid-Level Gauges and Indicators for Anhydrous Ammonia and LP-Gas."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Liquid-level Gauge for Anhydrous Ammonia" or "Liquid-level Vent Valve for Anhydrous Ammonia."

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LP-gas Liquid-level Gauges Certified for Canada (JYXX7)

USE

This category covers liquid-level gauges and liquid-level vent valves intended to be installed and used in accordance with CSA B149.1, "Natural Gas and Propane Installation Code," on LP-gas systems other than those supplying fuel to internal combustion engines, where the maximum working pressure does not exceed 1720 kPa. Those suitable for use at pressures in excess of 1720 kPa are marked with the maximum pressure.

RELATED PRODUCTS

For LP-gas liquid-level gauges intended for use on engine fuel systems, see LP-Gas Accessories, Automotive Type Certified for Canada (ITPV7).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C565 (1975), "Indicators for Anhydrous Ammonia and LP-Gas."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Liquid Level Gauge for LP-Gas" or "Liquid Level Vent Valve for LP-Gas."

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GENERATORS CERTIFIED FOR CANADA (JZGZ7)

GENERAL

This category covers generators (also referred to as generator heads). They are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS/INSTALLATION INSTRUCTIONS

An enclosed-type generator has the enclosure type designation marked on the generator for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7). The generator may also be marked "Raintight" or "Rainproof."

An enclosed-type generator is not intended to be installed in an enclosure unless a marking on the generator, the installation instructions, or a stuffer sheet provided with the generator states that the generator may be enclosed. Specifications for the enclosure are included with the instructions or marking.

An open-type generator is intended to be installed in an enclosure suitable for the end use. The minimum size of the enclosure is marked on the generator, provided in the installation instructions, or as a stuffer sheet provided with the generator.

A generator that has running heating and locked-rotor protection is marked "Thermally Protected."

Generators are marked for use in a 40°C (104°F) or higher ambient.

All generators are provided with installation instruction information, which indicate the proper methods to secure the generator, electrically connect the generator to the prime mover, and connect it to the generator drive. The instructions also provide information concerning the type of load the generator can operate.

FIELD-EVALUATED PROVISIONS

Suitability of guards for the shaft or other moving parts must be determined in the end-use application.

If a generator does not have thermal protection as described above, protection needs to be provided in the end-use application, such as an overload relay. The generator has a marking indicating that the generator is not provided with thermal protection.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 100, "Motors and Generators," and CSA-C22.2 No. 77, "Motors with Overheating Protection."

Where indicated in the individual certifications, the spacings provided within these motors have additionally been investigated to CSA-C22.2 No. 0.2, "Insulation Coordination."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Electric Generator" or "Generator Head."

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GLASS BLOCKS CERTIFIED FOR CANADA (KCJU7)

GENERAL

This category covers glass blocks certified for a 3/4 h fire exposure and intended for installation in openings not exceeding 7.74 m sq (120 sq ft) in area nor 3658 mm (12 ft) in width or height, unless otherwise noted in the individual certifications.

Glass blocks are designed for the protection of openings in masonry walls unless otherwise noted in the individual certifications against fire when installed in accordance with ANSI/NFPA 80, "Fire Doors and Other Opening Protectives," and as specified in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S106, "Standard Method for Fire Tests of Window and Glass Block Assemblies."

UL MARK

The Classification Mark of UL on the product or carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

GLASS BLOCKS
AS TO 3/4 HR FIRE RATING ONLY
Control No.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

GLASS BLOCK INSTALLATION MATERIALS CERTIFIED FOR CANADA (KCLK7)

USE

This category covers glass block installation materials certified for a 3/4-h fire exposure and intended for installation with certified Glass Blocks Certified for Canada (KCJU7).

Glass blocks and glass block installation materials are designed for the protection of openings in masonry walls, unless otherwise noted in the individual certifications, against fire, when installed in accordance with ANSI/NFPA 80, "Fire Doors and Other Opening Protectives," and as specified in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN4-S106, "Standard Method for Fire Tests of Window and Glass Block Assemblies."

UL MARK

The Classification Mark of UL on the product or carton is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

GLASS BLOCK INSTALLATION MATERIAL
+ or -
CLASSIFIED
AS TO 3/4 HR FIRE RATING ONLY

+ Type of installation material

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FIRE-PROTECTION-RATED GLAZING MATERIALS CERTIFIED FOR CANADA (KCMZ7)

USE

This category covers fire-protection-rated glazing materials certified for 1/3 h (20 min), 3/4 h (45 min), 1 h (60 min), 1-1/2 h (90 min), and 2 h (120 min) fire ratings as indicated in the individual certifications.

Fire-protection-rated glazing materials are intended for installation in fire windows, fire doors, and fire door frames with transoms and/or sidelights that are provided with suitable glazing frame members.

Fire-protection-rated glazing materials are intended to be installed in accordance with ANSI/NFPA 80, "Fire Doors and Fire Windows," and/or the "National Building Code of Canada," in addition to the installation instructions provided by the manufacturer. The installation of glazing materials is intended to be in accordance with the local building code as determined by the Authority Having Jurisdiction.

Authorities Having Jurisdiction should be consulted before installation.

Fire-protection-rated glazing materials are not generally provided by the fire door, fire door frame or fire window frame manufacturer. These glazing materials are normally installed on the job site after the fire door, fire door frame, or fire window frame is installed in the building.

For 6.3 mm (1/4 in.) thick wired glass, the maximum exposed area for an individual light should not exceed 0.84 sq m (1296 sq in.) with no dimension of exposed wired glass greater than 1372 mm (54 in.), unless otherwise indicated in the individual certifications. The groove depth formed by the framing members used for retaining wired glass should have a minimum depth as shown in the following tabulation.

Max Area of Exposed Glazing Material	Min Depth of Groove
0.064 sq m (100 sq in.)	12.7 mm (1/2 in.)
0.323 sq m (500 sq in.)	15.9 mm (5/8 in.)

Max Area of Exposed Glazing Material	Min Depth of Groove
0.387 sq m (600 sq in.)	17.5 mm (11/16 in.)
0.840 sq m (1296 sq in.)	19.0 mm (3/4 in.)

Wired glass, 6.35 mm (1/4 in.) thick, is rated for 3/4 h (45 min) for an exposed area not exceeding 0.84 sq m (1296 sq in.) and rated for 1-1/2 h (90 min) for an area not exceeding 0.064 sq m (100 sq in.)

For fire-protection-rated glazing materials other than 6.35 mm (1/4 in.) thick wired glass, the maximum exposed area for an individual light, the minimum groove depth, and the rating should be as indicated in the individual certifications.

Unless otherwise indicated in the individual certifications, these glazing materials have not been investigated as safety glazing.

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate fire-protection-rated glazing materials for doors and door frames is CAN4-S104 (1980), "Standard Method for Fire Tests of Door Assemblies."

The basic standard used to investigate fire-protection-rated glazing materials for window frames is CAN4-S106 (1980), "Standard Method for Fire Tests of Window and Glass Block Assemblies."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FIRE-PROTECTION-RATED GLAZING MATERIAL
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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GRAPHIC ARTS EQUIPMENT CERTIFIED FOR CANADA (KCQT7)

GENERAL

This category covers pieces of complete equipment, control assemblies and accessories that are directly related to the graphics arts industry and used primarily in printing establishments.

Such equipment includes offset printing presses and controls, composing and typesetting machines and accessories, plate exposure machines, plate processors, exposure lamps, color graphic printers or plotters.

RELATED PRODUCTS

Office-type duplicating equipment, such as white printers, photocopy machines, typewriters, and desk-type reproducers are covered under Information Technology Equipment Including Electrical Business Equipment (NWGQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CSA-C22.2 No. 9.0, "General Requirements for Luminaires"
CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)"
CSA-C22.2 No. 142, "Process Control Equipment"
CAN/CSA-C22.2 No. 60950 or 60950-1, "Information Technology Equipment"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Graphic Arts Equipment," "Collator," "Paper Cutter," "Photocomposer," "Type Setter," or other appropriate product name as shown in the individual Listings.

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GROUND-FAULT CIRCUIT INTERRUPTERS CERTIFIED FOR CANADA (KCXS7)

GENERAL

This category covers ground-fault circuit interrupters (GFCI) intended for installation at nominal system voltages of 600 V or less, to de-energize automatically some part of an electrical circuit.

A GFCI is a device whose function is to interrupt the electric circuit to the load, within a predetermined time, when a fault current to ground exceeds a predetermined value that is less than that required to operate the overcurrent protective device of the circuit.

GFCIs are intended to be used only in electrical circuits where one of the conductors is solidly grounded.

Class A GFCIs are intended to provide protection from electric shock as specified in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

GFCIs may be designed for permanent installation or may be portable types. They may also be combined with circuit breakers or receptacles.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 144.1 (2006), ''Ground-Fault Circuit-Interrupters,'' in addition to one or more of the following as determined by the specific construction of the device:

CSA-C22.2 No. 42, ''General Use Receptacles, Attachment Plugs and Similar Wiring Devices''
CSA-C22.2 No. 0.4, ''Bonding of Electrical Equipment''
CSA-C22.2 No. 5, ''Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures''
CSA-C22.2 No. 14, ''Industrial Control Equipment''
CSA-C22.2 No. 29, ''Panelboards and Enclosed Panelboards''
CAN/CSA-C22.2 No. 94, ''Special Purpose Enclosures''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Ground Fault Circuit Interrupter Class A'' (or ''GFCI CL A'' or ''GFCI A'').

* *

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GROUND-FAULT SENSING AND RELAYING EQUIPMENT CERTIFIED FOR CANADA (KDAX7)

USE

This category covers ground-fault-current-sensing devices, relaying equipment, or combinations of ground-fault-current-sensing devices and relaying equipment, rated 750 V maximum, which operates to cause a disconnecting means to function at predetermined values of ground-fault current in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This equipment is intended to provide ground-fault protection of equipment at services and feeders.

This equipment is intended to operate devices with shunt-trip coils, such as fused power-circuit devices, molded-case circuit breakers, molded-case switches and the like, which constitute the disconnecting means. Ground-fault-sensing and relaying equipment does not incorporate means to prevent opening of a disconnecting device at any level of fault current. Therefore it is necessary that ground-fault-sensing and relaying equipment be coordinated with a disconnecting device to prevent the disconnecting device from interrupting a fault current that exceeds the interrupting capability of the disconnecting means.

This category covers enclosed equipment and also open-type equipment intended for use in certified equipment, such as panelboards, switchboards and the like, where the acceptability of the combination has been determined by UL.

PRODUCT MARKINGS

Ground-fault-sensing and relaying equipment is marked to indicate the maximum inrush and sealed current ratings of the output circuit. These values should be compatible with the ratings of the tripping coils of the associated disconnecting devices.

Ground-fault-sensing and relaying equipment is marked to indicate the maximum available fault currents it is capable of withstanding without damage.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CSA-C22.2 No. 14, ''Industrial Control Equipment''
CAN/CSA-C22.2 No. 5 (Appendix E), ''Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures''
CAN/CSA-C22.1, ''Canadian Electrical Code, Part I''
CAN/CSA-C22.2 No. 144, ''Ground Fault Circuit Interrupters''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Ground Fault Sensing and Relaying Equipment.''

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GROUNDING AND BONDING EQUIPMENT CERTIFIED FOR CANADA (KDER7)

USE

This category covers bonding devices, ground clamps, grounding and bonding bushings and locknuts, ground rods, armored grounding wire, protector grounding wire, grounding wedges, ground clips for securing the ground wire to an outlet box, water-meter shunts, and similar equipment.

Some devices are to be assembled to wire using a special tool specified by the manufacturer. Such special tooling is identified by appropriate marking on or within the device shipping carton.

Armored Grounding Wire — Armored grounding wire consisting of a single corrosion-resistant copper or aluminum conductor within helically-formed steel armor is marked with the size of the conductor and ''Bare Armored Grounding Wire.''

Ground Rods — Solid ground rods of nonferrous metal or solid ground rods of steel with a nonferrous metal or stainless-steel jacket not less than 12.7 mm (1/2 in.) in diameter are suitable for use as grounding electrodes in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC), and are also suitable for use in installation of lightning protection equipment.

Plate Electrodes — Plate electrodes are suitable for use as grounding electrodes for concrete encasement in accordance with the CEC.

Plate electrodes are bare or conductively coated iron or steel, or solid uncoated nonferrous metal (other than aluminum).

Plate electrodes are marked with the manufacturer's name, trade name, or both within 50 mm of the top.

Ground Clamps — Strap-type ground clamps are not suitable for attachment of the grounding conductor of an interior wiring system to a grounding electrode.

Ground clamps and other connectors suitable for use where buried in earth or embedded in concrete are marked for such use. The marking may be abbreviated ''DB'' (for ''Direct Burial'').

Ground clamps are also suitable for telecommunication applications, such as telephone, radio, CATV and the like, in accordance with the CEC, in addition to those covered under Grounding and Bonding Equipment, Communication Certified for Canada (KDSH7).

Ground clamps are intended for use with ground rods and/or pipe electrodes in accordance with the CEC and are marked with the size of electrode and electrode grounding conductor with which the clamp is intended to be used. Clamps suitable for use on copper water tubing are marked ''Copper Water Tubing,'' or the equivalent, preceded or followed by the size of tubing. Ground rods, pipe electrodes and water tubing trade sizes are stated in fractions, such as 1/2, 5/8, etc.

Ground clamps intended for use with re-bar are marked with the size of re-bar with which the clamp is intended. Re-bar sizes may be specified in

fractions, such as 1/2, 5/8, etc., or a number, such as 3, 4, 5, etc., where the number represents the numerator of the fraction when stated in eighth-inch increments, e.g., 4 = 4/8.

Grounding and Bonding Bushings — Bonding bushings for use with conduit fittings, tubing (EMT) fittings, threaded rigid metal and intermediate metal conduit, or unthreaded rigid metal and intermediate metal conduit are provided with means (usually one or more set screws) for reliably bonding the bushing (and the conduit on which it is attached) to the metal equipment enclosure or box. They provide the electrical continuity required by the CEC at service equipment and for circuits rated over 250 V. Means for connecting a grounding or bonding conductor are not provided and if there is need for such a conductor a grounding bushing should be used.

Grounding bushings for use with conduit fittings, tubing (EMT) fittings, threaded rigid metal and intermediate metal conduit, or unthreaded rigid metal and intermediate metal conduit have provision for the connection of a bonding or grounding wire or have means for mounting a wire connector available from the manufacturer. Such a bushing may also have means (usually one or more set screws) for reliably bonding the bushing to the metal equipment enclosure or box in the same manner that this is accomplished by a bonding bushing. Grounding bushings provide the electrical continuity required by the CEC at service equipment and for circuits rated over 250 V. They may be used with or without a bonding or grounding conductor as determined by the bonding or grounding function that is intended to be accomplished.

Insulating throat liners in grounding or bonding bushings are suitable for temperatures of 150°C if they are black or brown in color. Unless otherwise marked, insulating throat liners of any other color are suitable for temperatures of 90°C.

Grounding and Bonding Locknuts — Grounding and bonding locknuts serve in a similar manner to grounding and bonding bushings except they do not provide abrasion protection for the conductor at the end of the conduit.

Grounding and Bonding Hubs — Grounding and bonding hubs are certified hubs (see DWTT7) provided with a certified grounding or bonding locknut. They serve in a manner similar to grounding and bonding bushings except they are only for use with threaded rigid metal and intermediate metal conduit. Grounding hubs provide the electrical continuity required by Article 10 of the CEC at service equipment and the electrical continuity required by Article 10 of the CEC for circuits rated over 250 V.

Ground Clips — Ground clips are intended to be pressed on the flat surface of a square, rectangular, or octagonal box to hold a grounding conductor against the sidewall of the box. Ground clips are not intended for use with round boxes. Ground clips are typically used for connecting the grounding conductor of various wiring methods to outlet boxes or for connecting the bonding jumper from a receptacle, switch or other device to an outlet box.

Ground Mesh — The ground mesh consists of a copper wire mesh that is intended to be installed in ground or embedded in concrete and bonded to the grounding electrode system for the purpose of improving ground planes. Ground mesh is not intended to serve as a required grounding electrode.

Fittings — A fitting such as a hub, bushing or locknut intended to provide a raintight or liquidtight connection is marked "Raintight," "Type 3R," "Type 4" or "Wet Locations."

Protector Grounding Wires — Protector grounding conductors wires are intended for use in accordance with Section 60 of the CEC. They are marked with the manufacturer's name, size, and "Protector Grounding Wire."

Water-meter Shunts — Consists of a 4 AWG or larger solid copper wire connected between two ground clamps that comply with requirements for such ground clamps.

Grounding Couplings — Grounding couplings are certified rubber-gasketed fittings (see VIZM7) that have been additionally investigated for grounding/bonding in a 200 A maximum service-entrance capacity.

Miscellaneous Devices — Grounding and bonding equipment not specifically mentioned above, such as bonding locknuts, gaskets, grounding wedge lugs, adapters, grounding grids and the like, are investigated under the intent of the requirements in the standard.

PRODUCT MARKINGS

Some of the markings referred to above may be on a tag attached to the product.

RELATED PRODUCTS

Equipment for grounding and bonding for telecommunication applications is covered under Grounding and Bonding Equipment, Communication Certified for Canada (KDSH7).

Grounding and bonding hubs may additionally be covered as a hub under Conduit Fittings Certified for Canada (DWTT7).

Grounding couplings are additionally covered under Fittings, Rubber Gasketed Certified for Canada (VIZM7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 41, "Grounding and Bonding Equipment."

UL MARK

The Listing Mark of UL on the product, on a tag securely attached to the product or container, or on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Grounding Equipment," "Bonding Equipment," "Bonding Jumper," "Ground Clamp," or other appropriate product name as shown in the individual Listings.

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GROUNDING AND BONDING EQUIPMENT, COMMUNICATION CERTIFIED FOR CANADA (KDSH7)

USE

This category covers grounding devices intended for use in telecommunication applications, such as telephone, radio, CATV and the like, in accordance with Section 60 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

Strap-type ground clamps constructed of perforated or expanded metal are suitable for grounding conductor connections to electrodes for indoor telecommunications purposes only. Where permitted by the CEC, they are also suitable in both indoor and outdoor applications when used for bonding purposes only.

Strap-type ground clamps are intended for use with pipe electrodes in accordance with the CEC and are marked with the size of electrode and electrode grounding conductor with which the clamp is intended to be used. Clamps suitable for use on copper water tubing are marked "Copper Water Tubing" or the equivalent, preceded or followed by the size of tubing. Pipe electrodes and water tubing trade sizes are stated in fractions, such as 1/2, 5/8, etc.

PRODUCT MARKINGS

The required marking may be on a tag attached to the product.

Communication ground clamps are marked either "RADIO" or "COMM."

RELATED PRODUCTS

Ground clamps covered under Grounding and Bonding Equipment Certified for Canada (KDER7) are also suitable for use in applications as specified in this product category.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 41 (1987), "Grounding and Bonding Equipment."

UL MARK

The Listing Mark of UL on the product, on a tag securely attached to the product or container, or on the smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Ground Clamp – Communication."

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HAIR-CLIPPING AND -SHAVING APPLIANCES CERTIFIED FOR CANADA (KEFX7)

USE

This category covers hair-clipping and -shaving appliances intended for household or commercial use on persons or animals, and includes such appliances as lather makers and barber shop vacuum cleaners for use on persons. Commercial appliances are intended for use in beauty salons, barber shops and the like. Hair clippers intended for household use are clearly marked as such.

This category does not cover manicure, pedicure or personal grooming appliances used for similar purposes.

RELATED PRODUCTS

Hair-clipping and -shaving appliances investigated to CAN/CSA-E60335-1/4E, "Safety of Household and Similar Electrical Appliances, Part 1: General Requirements," and CAN/CSA-E60335-2-8, "Household and Similar Electrical Appliances – Safety – Part 2-8: Particular Requirements for Shavers, Hair Clippers and Similar Appliances," are covered under Shavers, Hair Clippers and Similar Appliances Certified for Canada (NBKG7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

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HEALTH CARE FACILITIES EQUIPMENT CERTIFIED FOR CANADA (KEVQ7)

GENERAL

This category covers appliances, utilization equipment and construction materials that have been judged to be particularly applicable to a health care facility.

The general information under the specific categories indicate the areas in which the individual Listings are intended to apply in health care facility installations.

This equipment, unless otherwise indicated, is for installations in unclassified (ordinary) areas of health care facilities.

* *

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ISOLATED POWER SYSTEMS EQUIPMENT CERTIFIED FOR CANADA (KEWV7)

GENERAL

This category covers isolated power centers that incorporate complete assemblies of isolation transformers and one or more isolated secondary circuits terminated in integrally mounted grounding-type load receptacles in an overall enclosure which are intended for use in health care facilities where it is considered desirable to minimize available leakage and short-circuit currents. Line isolation monitors may be included in the assembly to indicate the "condition" of the isolated circuit and its connected components with respect to electrical ground.

Other distribution panels certified as isolated power panelboards incorporate the same features as described above except that they may be supplied with power from a separate isolation transformer. They are connected by an approved wiring method to remote receptacles located in operating rooms or other anesthetizing location areas of health care facilities.

This category also covers accessory equipment, such as terminal assemblies located in patient care areas.

Isolated Power Systems Equipment Certified for Canada (KEWV7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Products included as part of isolated power systems equipment that are not separately certified are investigated to the appropriate end-product standard.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Isolated Power Systems Equipment."

* *

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ISOLATED POWER WALL MODULES CERTIFIED FOR CANADA (KEXS7)

GENERAL

This category covers isolated power wall modular sections for use in, within, or as part of health care facilities, and may be part of a building structure. They are designed for permanent connection to the building wiring in accordance with Section 24 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). These sections incorporate factory-installed wiring and equipment comprising part of an isolated power system such as the components of an isolated power center or an isolated power panelboard, or accessory equipment such as terminal assemblies located in patient care areas. In addition, they may incorporate various combinations of gas outlets, lighting fixtures, elapsed-time indicators, clocks, intercommunication equipment, etc.

These sections do not contain any grounded power systems except those necessary for connection to the primary of an isolating transformer, if provided. Sections intended for use with grounded power systems are covered under Sections and Units Certified for Canada (QQXX7).

The pre-installed components and wiring of a prefabricated section may be concealed and, except for the branch-circuit connections, may not be accessible for inspection at the inspection site.

The isolated power wall module sections have not been investigated to determine conformance with one or more model building or plumbing codes. They have been investigated to determine compliance with the CEC. These wall modular sections are intended for installation subject to approval by the Authority Having Jurisdiction.

RELATED PRODUCTS

See Isolated Power Systems Equipment Certified for Canada (KEWV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Products included as part of a wall module that are not separately certified are investigated to the appropriate end-product standard.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Isolated Power Wall Module."

* *

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PREFABRICATED MEDICAL HEADWALLS AND MEDICAL SUPPLY UNITS CERTIFIED FOR CANADA (KEZR7)

USE

This category covers prefabricated medical headwalls and medical supply units that are factory-built assemblies for use in, within, or part of health care facilities, and may be part of a building structure. These assemblies may incorporate certified equipment and pre-installed materials that are usually concealed and may not be accessible for inspection at the installation site. The certified equipment incorporated in these assemblies includes, but is not limited to, receptacles, switches, clocks, timing devices, patient monitors, vacuum stations and gas fittings.

These assemblies, including any field wiring for units which are not factory wired, are intended for installation subject to approval by the Authority Having Jurisdiction.

INSTALLATION CODES

Materials, including the methods used for the installation of electrical, mechanical, heating, and plumbing components included in these assemblies have been judged under requirements which are based on CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and the ''National Building Code of Canada.''

RATINGS

The fire hazard of building materials employed in the assemblies is judged to be no greater than that of ordinary lumber used in site-constructed buildings. Finished surfaces are of materials having flame-spread and smoke-developed ratings of 200 or less. Products with a rating less than 200 indicated in the individual certifications may be included as part of the product marking.

Structural requirements vary with type of building construction and occupancy, and stability is to a large measure dependent upon the attachment of the assemblies to field-erected or existing structures. Therefore, Authorities Having Jurisdiction should be consulted with respect to local requirements.

RELATED EQUIPMENT

Prefabricated assemblies for use in locations other than health care facilities are covered under Prefabricated Assemblies, Sections and Units Certified for Canada (QQXX7) and Wiring Assemblies Certified for Canada (QQYZ7).

ADDITIONAL INFORMATION

For additional information, see Health Care Facilities Equipment Certified for Canada (KEVQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' CSA-C22.2 No. 0.4, ''Bonding of Electrical Equipment,'' and CSA Z305.2, ''Low-Pressure Connecting Assemblies for Medical Gas Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name, such as ''Medical Headwall,'' ''Medical Supply Unit,'' ''Dental Unit'' or proprietary descriptive product name with further description where necessary.

One Listing Mark is applied to each assembly.

* *

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MEDICAL WASTE DISPOSAL SYSTEMS, EQUIPMENT AND ACCESSORIES CERTIFIED FOR CANADA (KFCC7)

The function of these products as indicated by the manufacturer is to neutralize or collect biological or medical waste. These products are intended for use in hospitals, nursing homes, medical care centers, medical and dental offices and similar professional health care facilities. They include, but are not limited to syringe destroyers, waste disposers and similar equipment.

UL's investigation is limited to Classification as to electrical fire, shock and mechanical hazards only. The environmental impact and health aspects associated with the use of these products and their ability to collect, identify, or neutralize biological and medical waste have not been investigated by UL. This limitation is specified in the instruction manual for all products covered under this category.

Medical Waste Disposal Systems, Equipment and Accessories Certified for Canada (KFCC7)−*Continued*

Unless otherwise noted, these products have not been investigated for use in the presence of flammable materials.

The basic standards used to investigate products in this category are C22.2 No. 1010.0-92, ''Saftey Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use: Part 1; General Requirements'', and C22.2 No. 68, ''Motor Operated Appliances (Household and Commercial)''.

The Classification Mark of UL on the product is the only method provided by UL to identify Medical Waste Disposal Systems, Equipment, and Accessories which have been produced under its Classification and Follow-Up Service.

The Classification Mark for these products includes the UL Mark for Canada symbol (as illustrated in the introduction of this Directory) together with the word ''CLASSIFIED'', a control number and the following statement as shown below.

(Product Name)
CIASSIFIED AS TO ELECTRICAL SHOCK,
FIRE AND MECHANICAL HAZARDS ONLY.
Control No.

* *

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POWER SUPPLIES FOR USE IN HEALTH CARE FACILITIES CERTIFIED FOR CANADA (KFCG7)

USE

This category covers indoor-use power supplies having input ratings not more than 600 V, direct and alternating current, intended for use with professional medical and dental equipment in ordinary locations of a health care facility in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Power supplies not provided with standard output receptacles are marked for use with the intended end-use equipment, the combination of which has been investigated for compliance with CAN/CSA-C22.2 No. 601.1, ''Medical Electrical Equipment – Part 1: General Requirements for Safety.'' Consideration should be given for the combination of products to be evaluated under Medical Equipment Certified for Canada (PIDF7).

REBUILT PRODUCTS

This category also covers power supplies that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt power supplies are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt power supplies are subject to the same requirements as new power supplies.

FACTORS NOT INVESTIGATED

These products have not been investigated for the effects they may have on the systems or the equipment to which they are connected.

RELATED PRODUCTS

Power supplies not provided with standard output receptacles and not marked for use with intended end-use equipment are covered under Power Supplies, Medical and Dental Certified for Canada (QQHM8).

ADDITIONAL INFORMATION

For additional information, see Health Care Facilities Equipment Certified for Canada (KEVQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 601.1, ''Medical Electrical Equipment – Part 1: General Requirements for Safety.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Supply,'' ''Power Conditioner,'' etc., preceded by ''Hospital,'' ''Health Care Facility,'' ''Medical'' or ''Dental'' as appropriate.

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for

Power Supplies for Use in Health Care Facilities Certified for Canada (KFCG7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

TELEVISION/VIDEO EQUIPMENT FOR USE IN HEALTH CARE FACILITIES CERTIFIED FOR CANADA (KFCV7)

GENERAL

This category covers power-operated television and video equipment intended for entertainment purposes in health care facilities. Equipment suitable for use in oxygen-enriched atmospheres is so indicated in the individual certifications.

Entertainment centers consisting of combinations of a television receiver and a radio receiver and/or other audio or video equipment are investigated to the requirements for television equipment.

This category also covers accessory equipment, including carts, stands, supporting arms and/or wall-mounting brackets, intended for use with television and video equipment in health care facilities.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, ''Audio, Video, and Similar Electronic Equipment,'' or CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, ''Audio, Video and Similar Electronic Apparatus – Safety Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''TV'' or ''TV Stand,'' or other appropriate product name as shown in the individual Listings, preceded by the words ''Hospital'' or ''Health Care Facility.''

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

UNINTERRUPTIBLE POWER SUPPLIES FOR USE IN HEALTH CARE FACILITIES CERTIFIED FOR CANADA (KFFG7)

USE

This category covers indoor-use uninterruptible power supplies that may be portable, stationary or fixed. The equipment is rated not more than 600 V ac, and is intended for use with professional medical and dental equipment in health care facilities in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

An uninterruptible power supply is used to provide alternating-current power to a load for a period of time marked on the unit in the event of a utility power failure. In addition, it may provide a more constant voltage and frequency supply to the load, reducing the effects of utility voltage and frequency variations.

Uninterruptible power supplies provided with nonstandard output receptacles are marked for use with the intended end-use equipment.

Unless marked ''Essential Electrical System,'' these uninterruptible power supplies have not been investigated with respect to the requirements for essential electrical systems as defined in Section 24 of the CEC.

REBUILT PRODUCTS

This category also covers uninterruptible power supplies that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt uninterruptible power supplies are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt uninterruptible power supplies are subject to the same requirements as new uninterruptible power supplies.

FACTORS NOT INVESTIGATED

The investigation of a product covered under this category does not include the effects it may have on the system or equipment to which it is connected.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Uninterruptible Power Supplies for Use in Health Care Facilities Certified for Canada (KFFG7)−*Continued*

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 107.1, ''General Use Power Supplies,'' and CSA-C22.2 No. 601.1/60601-1-1, ''Medical Electrical Equipment – Part 1: General Requirements for Safety,'' in addition to CSA-C22.2 No. 66, ''Specialty Transformers,'' and/or CSA-C22.2 No. 0.4, ''Bonding and Grounding of Electrical Equipment (Protective Grounding),'' as appropriate.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Uninterruptible Power Supply,'' preceded by ''Hospital,'' ''Health Care Facility,'' ''Medical'' or ''Dental,'' as appropriate.

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

HEATERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (KFHT7)

HEATERS, AIR FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (KFVR7)

GENERAL

This category covers natural convection, radiant heating, and fan-assisted-type air heaters. Heaters intended for surface mounting should be installed in a horizontal position and should not be recessed, obstructed or placed on or under shelves. Installation is intended to be in accordance with the instructions furnished with the heater.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 46 (1988), ''Electric Air-Heaters.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Air Heater for Hazardous Location.''

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HEAT TRACING CABLE SYSTEMS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (KGFR7)

USE

This category covers heat tracing cable systems intended for pipeline or vessel heat tracing. A heat tracing system is composed of heat tracing cable and connection kits, which are used for connecting power, connecting multiple heat tracing cables, terminating cables or other product specific uses as described in the individual certifications.

Heat Tracing Cable Systems for Use in Hazardous Locations Certified for Canada (KGFR7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standards used to investigate products in this category are CSA-C22.2 No. 0.4 (1982), ''Bonding of Electrical Equipment,'' and CAN/CSA-C22.2 No. 130 (2003), ''Requirements for Electrical Resistance Heating Cables and Heating Device Sets.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Heat Tracing Cable Set for Use in Hazardous Locations'' or ''Heat Tracing Cable System for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

HEATERS, INDUSTRIAL AND LABORATORY FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (KGIZ7)

GENERAL

This category covers paint heaters, ovens, hot plates, and other types of products as described in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 88 (1958), ''Construction and Test of Industrial Heating Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial and Laboratory Heater for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

SURFACE HEATERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (KHCM7)

USE

This category covers surface heaters intended for pipeline or vessel heating.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standards used to investigate products in this category are CSA-C22.2 No. 0.4 (1982), ''Bonding of Electrical Equipment,'' and CAN/CSA-C22.2 No. 130 (2003), ''Requirements for Electric Resistance Heating Cables and Heating Device Sets.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

Surface Heaters for Use in Hazardous Locations Certified for Canada (KHCM7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Surface Heater for Use in Hazardous Locations.''

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HEATERS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (KHTG7)

HEATERS, INDUSTRIAL AND LABORATORY FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (KIQU7)

GENERAL

This category covers paint heaters, ovens, hot plates, and other types of products as described in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 88, ''Industrial Heating Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial and Laboratory Heater for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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HEATERS AND HEATING EQUIPMENT CERTIFIED FOR CANADA (KKBV7)

This category covers equipment rated up to 600 V intended for household, industrial or commercial installations.

These products have not been investigated for outdoor use unless they are marked ''For Outdoor Use'' or the equivalent, in which case they are acceptable for both outdoor and indoor use.

AIR HEATERS, MOVABLE AND WALL OR CEILING HUNG CERTIFIED FOR CANADA (KKPT7)

USE AND INSTALLATION

This category covers cord-and-plug-connected air heaters of the natural convection and fan-assisted movable types, and also wall-hung (other than at the baseboard level) and ceiling-hung types.

Movable and wall- or ceiling-hung heaters are intended to act as sources of heat for the purpose of raising or maintaining the comfort level in a desired area.

Some movable and wall- or ceiling-hung heaters may present fire hazards if they come in contact with combustible materials, such as draperies, furniture, carpeting, bedding and the like, or if they are covered or blocked in any manner. In accordance with product markings and instructions for the user, such heaters should be placed so as to provide safeguards against such contact and should not be located where they can be covered or blocked, for example, at the baseboard level. Use that does not result in a fire hazard may still cause discoloration or scorching (but no glowing embers or flaming) of adjacent materials.

Certain air heaters subjected to the equivalent of a beating rain are considered to be acceptable for outdoor installation and are marked accordingly.

RELATED PRODUCTS

Fixed and location-dedicated electric room heaters are covered under Air Heaters, Room, Fixed and Location Dedicated Certified for Canada (KKWS7).

Permanently-mounted heaters having provisions for drawing in outside air are certified as room fan heater units under Heating and Cooling Equipment Certified for Canada (LZFE7).

Portable baseboard heaters and accessories are covered under Baseboard Heaters Certified for Canada (KLDR7) and Baseboard Heater Accessories Certified for Canada (KLQZ7), respectively.

These heaters have not been investigated for their acceptability when used in confined areas and operated at elevated temperatures for heat treatment or steam and dry-bath applications. Steam and dry-bath units are covered under Steam Bath Equipment Certified for Canada (KQBZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 46 (1988), ''Electric Air-Heaters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Movable Heater,'' ''Movable Fan Type Heater,'' ''Wall-Hung Heater,'' ''Ceiling-Hung Heater,'' ''Wall- or Ceiling-Hung Heater,'' ''Movable Radiant Glass Heater,'' ''Movable Floor Mounted Air Heater,'' or other appropriate product name as shown in the individual Listings.

* *

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AIR HEATERS, ROOM CERTIFIED FOR CANADA (KKWM7)

USE AND INSTALLATION

This category covers electric air heaters of the portable, fixed and stationary room type, intended for indoor use in household and commercial applications. They may be cord-and-plug connected, or provided with field-wiring terminals for permanent connection to the electrical supply.

These heaters are of the radiant, natural convection and fan-assisted types intended for mounting in various positions, such as on or in a wall, on, in or suspended from a ceiling, or inserted in a floor. Combination units that include lights have been investigated with regard to their suitability for use as luminaires. Commercial types include heaters intended to be suspended from a ceiling or wall, or to provide an air curtain in a doorway.

Heaters are intended to act as sources of heat for the purpose of raising or maintaining the comfort level in a desired area.

Some heaters may present fire hazards if they come in contact with combustible materials, such as draperies, furniture, carpeting, bedding and the like, or if they are covered or blocked in any manner. In accordance with product markings and instructions for the user, such heaters should be placed so as to provide safeguards against such contact and should not be located where they can be covered or blocked, for example, at the baseboard level. Use that does not result in a fire hazard may still cause discoloration or scorching (but no glowing embers or flaming) of adjacent materials.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' must be observed in installation or use, suitable warnings and necessary special instructions are marked on the equipment.

RELATED PRODUCTS

Movable and wall- or ceiling-hung heaters are covered under Air Heaters, Movable and Wall or Ceiling Hung Certified for Canada (KKPT7).

Fixed and location-dedicated electric room heaters are covered under Air Heaters, Room, Fixed and Location Dedicated Certified for Canada (KKWS7).

Portable baseboard heaters and accessories are covered under Baseboard Heaters Certified for Canada (KLDR7) and Baseboard Heater Accessories Certified for Canada (KLQZ7), respectively.

Permanently-mounted heaters having provisions for drawing in outside air are certified as room fan heater units under Heating and Cooling Equipment Certified for Canada (LZFE7).

These heaters have not been investigated for their acceptability when used in confined areas and operated at elevated temperatures for heat treatment or steam and dry-bath applications. Steam and dry-bath units are covered under Steam Bath Equipment Certified for Canada (KQBZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-E60335-1/4E, ''Household and Similar Electrical Appliances – Safety – Part 1: General Requirements,'' and CAN/CSA-E60335-2-30, ''Safety of Household and Similar Electrical Appliances – Part 2: Particular Requirements for Room Heaters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Radiant Heater,'' ''Panel Heater,'' ''Liquid-filled Heater,'' ''Fan Heater,'' ''Convector Heater,'' ''Tubular Heater,'' or other appropriate product name as shown in the individual Listings.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

AIR HEATERS, ROOM, FIXED AND LOCATION DEDICATED CERTIFIED FOR CANADA (KKWS7)

USE AND INSTALLATION

This category covers electric air heaters of the fixed and location-dedicated room type for residential, commercial and industrial applications. These heaters are of the radiant, natural convection and fan-assisted types intended for mounting in various positions, such as on or in a wall, (except at the baseboard level), on, in or suspended from a ceiling or inserted in a floor. Combination units that include lights have been investigated with regard to their suitability for use as fixtures. Commercial-industrial types include heaters intended to be suspended from a ceiling or wall, or to provide an air curtain in a doorway.

These air heaters are intended to act as sources of heat for the purpose of raising or maintaining the comfort level in a desired area. These units have not been investigated for their acceptability when installed in confined areas and operated at elevated temperatures for heat treatment or steam and dry-bath applications.

Some air heaters may present fire hazards if they come in contact with combustible materials, such as draperies, furniture, carpeting, bedding and the like, or if they are covered or blocked in any manner. Such heaters are intended to be installed as to provide safeguards against such contact and should not be located where they can be covered or blocked, for example, at the baseboard level. Installations that do not result in a fire hazard may still cause discoloration or scorching (but no glowing embers or flaming) of adjacent materials.

Certain room heaters have been investigated for outdoor use and are marked accordingly. All other heaters have been investigated for indoor

Air Heaters, Room, Fixed and Location Dedicated Certified for Canada (KKWS7)−*Continued*

installation only. The acceptability of such heaters when installed in semi-protected or otherwise shielded locations is determined by the Authority Having Jurisdiction.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' must be observed in installation or use, suitable warnings and necessary special instructions are marked on the equipment.

RELATED PRODUCTS

Movable and wall- or ceiling-hung heaters are covered under Air Heaters, Movable and Wall or Ceiling Hung Certified for Canada (KKPT7).

Heaters having provisions for drawing in outside air are certified as room fan heater units under Heating and Cooling Equipment Certified for Canada (LZFE7).

Portable baseboard heaters and accessories are covered under Baseboard Heaters Certified for Canada (KLDR7) and Baseboard Heater Accessories Certified for Canada (KLQZ7), respectively.

Steam and dry-bath units are covered under Steam Bath Equipment Certified for Canada (KQBZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 46, ''Electric Air-Heaters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Room Heater,'' or other appropriate product name as shown in the individual Listings.

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BASEBOARD HEATERS CERTIFIED FOR CANADA (KLDR7)

USE AND INSTALLATION

This category covers space heaters of the portable and permanently mounted types intended to be positioned or installed on or in the wall at the baseboard level, or on the floor.

Baseboard heaters have been investigated and found to incorporate suitable safeguards against establishment of fire hazards that might result from contact with draperies, furniture, carpeting, bedding and the like; however, discoloration or scorching (but no glowing embers or flaming) may result on adjacent materials.

Heaters, other than those marked to indicate that they are not for residential use, have been investigated to determine that the accessible surface temperatures are low enough to reduce the likelihood of burns from accidental contact.

Electrical cords, drapes, and other furnishings should be kept away from baseboard heaters. To reduce the likelihood of cords contacting the heater, the heater should not be located beneath electrical receptacles. Receptacle accessories for use with individual manufacturers' baseboard heaters are covered under Baseboard Heater Accessories Certified for Canada (KLQZ7).

Baseboard-mounted equipment consists of two types: (1) Complete units intended for individual mounting in specific locations, and (2) complete systems, which include accessories to enable the heating units to be interconnected around the perimeter of a room (see KLQZ7). With reference to these systems, each manufacturer is required to furnish detailed instructions covering the assembly of the basic units and accessories, and indicating the method in which ground continuity is intended to be maintained between adjacent sections.

Electrical fittings are provided with each heater of a system to ensure ground continuity between adjacent units and to protect interconnecting wiring, unless investigation shows that the standard fittings which are available in the field will accomplish the same result.

A system which is factory furnished with all interconnecting wiring, fittings, raceways, etc., to complete the installation is considered suitable for connection to a single-outlet branch circuit.

ADDITIONAL INFORMATION

Baseboard Heaters Certified for Canada (KLDR7)−*Continued*

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 46 (1988), ''Electric Air-Heaters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Baseboard Heater.''

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Baseboard Heater Accessories Certified for Canada (KLQZ7)

USE AND INSTALLATION

This category covers accessories intended to be used in conjunction with individual manufacturers' certified baseboard heater systems (see KLDR7). Accessories include wiring components for interconnection of individual units, corner, blank and filler sections, to facilitate perimeter installation, temperature-regulating components and other general- and special-use receptacle and switch components to be mounted in line with baseboard heater installations.

Attachment plug receptacle sections of baseboard heating systems provided for installation, together with the other components of baseboard air heating systems, are intended to be supplied by means of conventional wiring methods from separate branch circuits not interconnected with the heating system.

Combination transfer switch-receptacle sections of baseboard heating systems which permit the use of either the heating system by itself, or a separate room air conditioner by itself, are intended to be connected to a single branch circuit of appropriate size.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 46 (1988), ''Electric Air-Heaters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Baseboard Heater Accessory.''

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CLOTHES DRYERS CERTIFIED FOR CANADA (KMEX7)

USE AND INSTALLATION

This category covers clothes dryers intended for use only where water has been used as the cleaning agent. Unless specifically marked or indicated in the installation instructions, these clothes dryers are intended for freestanding installation with no spacing required between the back and any side to combustible wall surfaces, but are not intended to be operated in closets, alcoves, or other confined areas, nor stacking one unit above another.

A wall-insert clothes dryer is considered to be an appliance intended to be mounted permanently in a wall or other vertical surface of a building, or in a cabinet. A wall-insert clothes dryer is considered to be suitable for installation as a recessed clothes dryer, or as a freestanding clothes dryer.

A recessed clothes dryer is considered to be an appliance intended (1) to be supported by the floor, (2) to rest against a wall in the rear, (3) to rest against a wall, a cabinet, or another appliance on one side, and (4) to rest against a cabinet or other appliance on the other side. If the design per-

Clothes Dryers Certified for Canada (KMEX7)−*Continued*

mits, a countertop may cover the clothes dryer and the adjacent cabinets and appliances. A recessed clothes dryer is not intended for permanent attachment to the building structure or to adjacent cabinets or appliances. A recessed clothes dryer is considered suitable for installation as a free-standing clothes dryer.

A clothes dryer intended to be installed in a closet should be installed in accordance with the marked required clearances to all adjacent surfaces and the required ventilation in the door.

Clothes dryers are provided with means of connection of the metallic parts of the enclosure to ground.

Motor-overcurrent protection is included in motor-operated dryers if adequate protection would not be provided by branch circuits to which they would properly be connected.

Clothes dryers, other than condenser-type clothes dryers, are intended to be connected to a clothes dryer exhaust duct to the outdoors. The maximum duct length and number of bends is intended to be in accordance with the clothes dryer installation instructions.

The operation of condenser-type clothes dryers is such that air from the heater of the dryer is circulated across the clothes and then across a condenser. The condenser transforms the vapor to water, which collects in a reservoir in the clothes dryer. As the vapor changes to a liquid, it carries the lint with it to an internal reservoir. The air that passes across the condenser then recirculates across the heater in the clothes dryer in a continuous operation until the clothes are dry. There is no venting of moisture/lint-laden air to the outside. All moisture/lint-laden air is continuously recirculated.

Provision should be made for the periodic removal of accumulation of lint that results from normal operation of this type of equipment.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installation or use, the necessary special instructions are provided on or with the equipment. An individual branch circuit should be provided for each clothes dryer.

RELATED PRODUCTS

For dryers other than electrically heated types, see Dryers Certified for Canada (LEFZ7), Gas-fired Clothes Dryers, Type 1 Certified for Canada (LETA7) and Gas-fired Clothes Dryers, Type 2 Certified for Canada (LETX7).

For combination washer/dryers, see Washing Machines Certified for Canada (ZCTT7).

Products Verified for energy efficiency are covered under Clothes Dryers, Household Electric Verified for Energy Efficiency (ZYFX).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 112, "Electric Clothes Dryers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Clothes Dryer."

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HEATERS, COOKING APPLIANCES CERTIFIED FOR CANADA (KMSV7)

Commercial Cooking Appliances Certified for Canada (KNGT7)

USE AND INSTALLATION

This category covers cooking equipment intended for commercial use, such as coffee machines, espresso coffee makers (single or grouped dispensers), conductive cookers, food warmers including heated food servers, fryers, griddles, nut warmers, ovens, popcorn machines, steam kettles, ranges, and other appliances for use in commercial kitchens, restaurants, or other business establishments where food is dispensed.

This category also covers custom-built food preparation and/or serving equipment consisting of drop-in components, shelf heaters, plate warmers, lighted and/or heated food displays, etc.

Commercial Cooking Appliances Certified for Canada (KNGT7)−*Continued*

These appliances are intended for commercial use in unclassified locations in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and are required to comply with the "National Building Code of Canada."

Commercial cooking appliances of certain types are designed for permanent connection to water supply and sewer lines at the point of installation. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

If a product is suitable for built-in installation, side-by-side mounting or stacking, it is indicated in the installation instructions.

PRODUCT MARKINGS

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of the CEC must be observed in installation or use, suitable warnings or special instructions are marked on the equipment.

Appliances covered under this category are suitable for wiring with either copper or aluminum power-supply conductors unless marked "Use Copper Wire Only For Power Supply Connections."

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by use of these appliances has been investigated.

RELATED PRODUCTS

Appliances provided with integral ventilation or recirculating equipment have been investigated to the construction requirements of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations," and are covered under Commercial Cooking Equipment with Integral Recirculating Ventilation Systems Certified for Canada (KNKG7).

ADDITIONAL INFORMATION

For additional information, see Heaters and Heating Equipment Certified for Canada (KKBV7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 109, "Commercial Cooking Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Cooking Appliance" or "Cooking Appliance," or other appropriate product name as shown in the individual Listings.

* *

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Commercial Cooking Appliance Assemblies Certified for Use with Other Manufacturers' Appliances Certified for Canada (KNJA7)

USE AND INSTALLATION

This category covers commercial cooking appliance assemblies intended for retrofit installation on other manufacturers' certified commercial cooking appliances.

The devices consist of a controller assembly that is designed for use with a specific manufacturer and model of a commercial cooking appliance.

PRODUCT MARKINGS

The markings on and the literature provided with the controller indicate the specific end-use appliance for which it is intended to be used.

FACTORS NOT INVESTIGATED

The operation of the appliance utilizing these controllers is intended to be identical to the operation with the factory-supplied control; however, any programming functions that vary from the original control have not been investigated.

RELATED PRODUCTS

See Commercial Cooking Appliances Certified for Canada (KNGT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

Commercial Cooking Appliance Assemblies Certified for Use with Other Manufacturers' Appliances Certified for Canada (KNJA7)−*Continued*

The basic standard used to investigate products in this category is CSA-C22.2 No. 109 (1981), "Commercial Cooking Appliances."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

COMMERCIAL COOKING APPLIANCE CONTROLLER FOR USE WITH UL LISTED [MANUFACTURER'S NAME AND MODEL NUMBER(S)]
COMMERCIAL COOKING APPLIANCE(S)
Control No.

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Commercial Cooking Appliances with Integral Recirculating Ventilation Systems Certified for Canada (KNKG7)

USE AND INSTALLATION

This category covers cooking equipment intended for commercial use, such as deep fat fryers, griddles and other appliances for use in commercial kitchens, restaurants, or other business establishments where food is prepared. Each appliance covered under this category is manufactured with an integral recirculating ventilation system.

The integral recirculating ventilation systems of these appliances consist of a fan, collection hood, and an air filtering system consisting of a grease filter, and may also incorporate other air filtering devices. These hoods incorporate an automatic fire extinguisher unit which has been investigated with the cooking equipment section.

Integral recirculating ventilation systems are intended for venting captured and filtered air back into the room in which the equipment is located. These products are not intended for connection to a ducted exhaust system.

These appliances are intended for commercial use in unclassified locations in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and are required to comply with the "National Building Code of Canada." The "National Building Code of Canada" requires that systems for the ventilation of commercial cooking equipment comply with the construction and installation requirements of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations."

Commercial cooking appliances of certain types are designed for permanent connection to water supply and sewer lines at the point of installation. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

PRODUCT MARKINGS

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of the CEC must be observed in installation or use, suitable warning or special instructions are marked on the equipment.

Appliances covered under this category are suitable for wiring with either copper or aluminum power-supply conductors unless marked "Use Copper Wire Only For Power Supply Connections."

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by use of these appliances have been investigated.

RELATED PRODUCTS

For products that are intended for installation with ducts, see Exhaust Hoods with Exhaust Dampers Certified for Canada (YXZR7) and Exhaust Hoods Without Exhaust Dampers Certified for Canada (YYCW7).

For cooking-oil filters that are not an integral part of another appliance, see Filters for Cooking Oil, Commercial Certified for Canada (KNRF7).

ADDITIONAL INFORMATION

For additional information, see Heaters and Heating Equipment Certified for Canada (KKBV7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 109, "Commercial Cooking Appliances."

Commercial Cooking Appliances with Integral Recirculating Ventilation Systems Certified for Canada (KNKG7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Cooking Appliance" or "Cooking Appliance," or other appropriate product name as shown in the individual Listings, together with the words "With Integral Recirculating Ventilation System" or "With Ductless Hood."

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Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air Certified for Canada (KNLZ7)

USE AND INSTALLATION

This category covers cooking equipment intended for commercial use, such as pressurized deep fat fryers and other appliances for use in commercial kitchens, restaurants or other business establishments where food is prepared. Each appliance covered in this category is manufactured with an integral system feature to limit the emission of grease-laden air from the cooking process to the room ambient.

These appliances have been investigated for the limit of 5 mg/m^3 for the emission of grease-laden air to the room ambient in accordance with the recommendations of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations," using the EPA-202 test method prescribed for cooking appliances provided with integral recirculating air systems.

These products are not intended for connection to a ducted exhaust system.

Appliances in this category are not provided with an integral fire extinguishing system. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to fire extinguishing systems, such as the need for field installed systems in accordance with ANSI/NFPA 96.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installations or use, suitable warning or special instructions are marked on the equipment.

Commercial cooking appliances of certain types are designed for permanent connections to water supply and sewer lines at the point of installation. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by use of these appliances has been investigated.

RELATED PRODUCTS

For products with integral recirculating systems including fire extinguishing systems, see Commercial, with Integral Recirculating Systems Certified for Canada (KNKG7).

ADDITIONAL INFORMATION

For additional information, see Heaters and Heating Equipment Certified for Canada (KKBV7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 109, "Commercial Cooking Appliances".

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Cooking Appliance" or "Cooking Appliance," or other appropriate product name as shown in the individual Listings, together with the words "with integral system for limiting the emission of grease-laden air."

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Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air Certified for Canada (KNLZ7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Custom-built Food Service Equipment Certified for Canada (KNNS7)

GENERAL

This category covers custom-built commercial food serving and/or cooking equipment that includes various combinations of electric broilers, food warmers including heated food servers, fryers, griddles, ranges, ovens, lighted and/or heated food displays, shelf heaters, plate warmers, convenience receptacles, and the like. It may also include refrigerated beverage cooler/dispensers, drinking water coolers, freezers, ice makers, ice cream makers, refrigerators, soda fountain units, and the like.

INSTALLATION

Certain types of custom-built food service equipment are designed for permanent connections to water supply and sewer lines at the point of installation. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

It is considered desirable from the standpoint of safety to persons that the framework of this equipment be permanently and securely grounded.

INSTALLATION INSTRUCTIONS

Custom-built food service equipment of such size that shipment in one carton or fully assembled is impractical, may be divided into sections. Each section is required to bear a "Custom-built Food Service Equipment Section" Certification Mark and is marked "Section _____ of _____." The first blank space is filled with the number of the section. The second blank space is filled with a number indicating the total number of custom-built food service equipment sections that constitute the complete custom-built food service equipment. The custom-built food service equipment has suitable installation instructions describing or illustrating the proper assembly, mounting and connection of the numbered custom-built food service equipment sections. The acceptability of the assembled sections in the field rests with the Authority Having Jurisdiction.

PRODUCT MARKINGS

This equipment includes factory-built assemblies incorporating preinstalled materials and components which after installation are usually concealed and may not be accessible for inspection at the installation site. Electrical connections made during installation, other then supply connections, are identified by markings on the product.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installation or use, suitable warnings or special instructions are marked on the equipment.

Equipment in this category is suitable for wiring with either copper or aluminum power-supply conductors unless marked "Use copper wire only for power supply connections."

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared or served by use of this equipment has been investigated.

RELATED PRODUCTS

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Heaters and Heating Equipment Certified for Canada (KKBV7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 109, "Commercial Cooking Appliances," and CSA-C22.2 No. 120, "Refrigeration Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Custom-built Food Service Equipment" or "Custom-built Food Service Equipment Section," or other appropriate product name related to commercial preparation/serving of food such as "Food Kiosk" or "Food Service Work Table."

* *

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Custom-built Food Service Equipment Certified for Canada (KNNS7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Filters for Cooking Oil, Commercial Certified for Canada (KNRF7)

GENERAL

This category covers cooking-oil filters rated 600 V or less, intended for commercial use. This category covers portable filters and fixed filters whether intended for use with specific fryers or for general use.

These appliances filter the cooking oil used in deep-fat fryers usually found in commercial kitchens, restaurants, or other business establishments where food is prepared. They include a pump and may include an integral oil heater.

Filters suitable for built-in installation, side-by-side mounting or stacking are indicated in the installation instructions for the filter.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installation or use, suitable warnings or special instructions are marked on the equipment.

These appliances are suitable for wiring with either copper or aluminum power-supply conductors unless marked "Use copper wire only for power supply connections" or the equivalent.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared using filtered oil from these appliances has been investigated.

RELATED PRODUCTS

Cooking-oil filters that form an integral part of another appliance are covered under:

Commercial Cooking Appliances Certified for Canada (KNGT7)
Commercial Cooking Appliances with Integral Recirculating Ventilation Systems Certified for Canada (KNKG7)
Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air Certified for Canada (KNLZ7)
Custom-built Food Service Equipment Certified for Canada (KNNS7)
Gas-fired Food Service Equipment Certified for Canada (LGQX7)

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 109, "Commercial Cooking Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Filter for Cooking Oil," or other appropriate product name.

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Household Cooking Appliances Certified for Canada (KNUR7)

USE AND INSTALLATION

This category covers appliances intended for household use that are designed to heat or cook food products for human consumption.

This category also covers:

Products combining features for food preparation and cooking, such as bread makers and coffee grinder/makers
Cord-connected pet food cookers and pet treat makers intended for indoor household use that are designed to heat or cook food for pet consumption

In cases where the nature or construction of equipment is such that special safety precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installation or use of the appliances, the necessary special instructions are marked on the appliances themselves or are included in the installation instructions provided with the appliance.

FACTORS NOT INVESTIGATED

Household Cooking Appliances Certified for Canada (KNUR7)−*Continued*

Neither the toxicity of coatings nor the physiological effects consuming food prepared by use of these appliances has been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CSA-C22.2 No. 64, ''Household Cooking and Liquid-Heating Appliances''

or

CSA-C22.2 No. 1335.1 (1993), ''Portable Electrical Motor-Operated and Heating Appliances: General Requirements,''
CSA-C22.2 No. 1335.2.9 (1993), ''Portable Electrical Motor-Operated and Heating Appliances: Particular Requirements for Portable Electric Cooking Appliances,'' and
CSA-C22.2 No. 1335.2.15 (1993), ''Portable Electrical Motor-Operated and Heating Appliances: Particular Requirements for Liquid-Heating Appliances''

or

CAN/CSA-E335-1 (1994, 2nd ed.), ''Safety of Household and Similar Electrical Appliances – Part 1: General Requirements,'' or CSA-E335-1/3E (1994, 3rd ed.), ''Safety of Household and Similar Electrical Appliances – Part 1: General Requirements,'' in conjunction with:
CAN/CSA-E60335-2-9 (1994), ''Household and Similar Electrical Appliances – Safety – Part 2-9: Particular Requirements for Grills, Toasters and Similar Portable Cooking Appliances,'' or
CAN/CSA-E60335-2-13 (1994), ''Household and Similar Electrical Appliances – Safety – Part 2-13: Particular Requirements for Deep Fat Fryers, Frying Pans and Similar Appliances,'' or
CAN/CSA-E60335-2-15 (1994), ''Household and Similar Electrical Appliances – Safety – Part 2-15: Particular Requirements for Appliances for Heating Liquids''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Bun Warmer,'' ''Corn Popper,'' ''Griddle,'' ''Coffee Maker,'' ''Household Cooking Appliance,'' ''Pet Food Cooker,'' ''Pet Treat Maker,'' or the name of the specific type of product as shown in the individual Listings.

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DE-ICING AND SNOW-MELTING EQUIPMENT CERTIFIED FOR CANADA (KOBQ7)

GENERAL

This category covers fixed, outdoor, electric de-icing and snow-melting systems for use in accordance with Section 62 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC). The equipment is provided with means for permanent wiring connections, except that equipment rated 20 A or less and 150 V ac or less to ground may be of cord-and-plug-connected construction.

To supplement the general requirements in the CEC, the manufacturer is required to provide specific installation instructions concerning any limitations of the installation and/or use of the equipment.

PRODUCT MARKINGS

These products are marked with a Designation Code according to the following table:

Designation	Intended Use
2B	Snow melting
2C	Animal pens
2D	Pool decks
2E	Roof de-icing

RELATED PRODUCTS

Pipe-heating cable is covered under Mobile/Manufactured Home Pipe-heating Cable Certified for Canada (KQVU7), Industrial and Commercial Pipe-heating Cable Certified for Canada (KQXR7) and Residential Pipe-heating Cable Certified for Canada (KQYI7).

ADDITIONAL INFORMATION

De-icing and Snow-melting Equipment Certified for Canada (KOBQ7)−*Continued*

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 130 (2003), ''Requirements for Electrical Resistance Heating Cables and Heating Device Sets.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''De-icing and Snow-Melting Equipment'' or ''Roof De-icing Equipment,'' or other appropriate product name as shown in the individual Listings.

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DUCT HEATERS, ELECTRIC CERTIFIED FOR CANADA (KOHZ7)

GENERAL

This category covers fixed electric duct heaters and remote control assemblies, rated 600 V or less, typically used in the air stream of a ducted system.

A duct heater is a self-contained heater (external to the air-moving unit), field installed in the air stream of a ducted system. It is designed to be installed where an adequate flow of air from a separate interlocked fan or blower system is provided. Such a heater may be located in the main supply duct of an air heating system or in one of the branch ducts. Two or more duct heaters may be installed in a group (in proximity to one another in the duct) if tests indicate acceptable results when the heaters are installed in accordance with the manufacturer's instructions.

A duct heater intended to be employed in conjunction with another source of heat is judged on the basis of its compliance with CSA-C22.2 No. 155-1986, ''Electric Duct Heaters,'' and further examination and tests to determine whether or not the combination is acceptable.

Wiring Termination Provisions

For permanently connected equipment, the wiring termination provisions are based on tests and Table 2 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' (CEC), as follows:

1. 75°C insulated conductors at the 75°C ampacities.
2. 90°C insulated conductors at the 75°C ampacities, in which case the equipment is marked for 90°C conductors.
3. Insulation temperature rating of 75 or 90°C and wire size as marked on the unit.

Also see **INSTALLATION REQUIREMENTS** (Appliance and Utilization Equipment Terminations) under Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and **ELECTRICAL INSTALLATIONS** under Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

INSTALLATION

This equipment is intended to be installed in accordance with the CEC.

Wiring Diagrams

The proper method of electrical installation (number of branch circuits, control wiring connections, etc.) is shown on the wiring diagram and/or marking attached to the equipment.

Electric Heat Considerations

In duct heaters rated more than 48 A, the loads are subdivided so that each load does not exceed 48 A and is protected at not more than 60 A. The overcurrent devices are either included as an integral part of the heater or are furnished as a separate assembly. If the overcurrent devices are furnished as a separate assembly, the heater is marked to specify that it is to be used with that particular separate assembly.

Unless specifically indicated in the individual certifications as ''Suitable for zero clearance installation,'' the duct heater units are intended to be installed in ducts with the clearances to combustible materials as specified in the manufacturer's installation instructions and marked on the duct heater unit itself. Care should be taken to ensure that duct heaters are positioned properly (horizontal air flow or vertical air flow) since required clearances are affected by the position of the duct work in some instances.

Unless otherwise indicated, the designated clearances (other than ''zero'') are based on tests of units with uninsulated sheet-metal ducts attached. Under these conditions, temperatures below established criteria

Duct Heaters, Electric Certified for Canada (KOHZ7)−*Continued*

have been measured on a wooden test enclosure, representing combustible construction, spaced at the specified clearance (air) from the unit and ducts.

Each duct heater incorporates integral limit controls intended to protect against abnormal operating conditions that might arise from blocked inlets, blocked outlets, or fan failures. Magnetically-operated switching devices or similar components required for use with these limit controls are either included as an integral part of the heater or are furnished as a separate assembly as described above. Supplementary controls are not necessarily supplied as part of the duct heater.

A separate room thermostat must be provided to control the room air temperatures. For certifications of thermostats and similar devices, see Temperature-indicating and -Regulating Equipment Certified for Canada (XAPX7). Provision for an interlock circuit, to ensure operation of the separate blower when the duct heater is energized, is included in the heater or in the separate assembly as described above.

Tests have indicated that no adverse thermal effects are obtained when duct heaters marked to indicate that they are suitable for use with heat pumps, or central cooling air conditioners or fan-coil units are installed with certain of these units [See Heating and Cooling Equipment Certified for Canada (LZFE7)], provided the duct heater is used only in horizontal or upflow systems, and the duct heater is located downstream at least 4 ft from the nearest surfaces of the heat pump, central cooling air conditioner, or fan-coil unit.

Unit Installation

Duct heaters are intended for installation in noncombustible ducts and are designed to be used individually and in groups as supplementary heat sources in air-heating systems or as primary heat sources with separate blowers where the available heat from the duct heaters is sufficient for local conditions.

Duct heaters suitable for outdoor installation are so marked. Heaters not marked as suitable for outdoor installation are for indoor use only.

The manufacturer's application and installation instructions furnished with each heater should be consulted to determine the factors applicable to the particular installation, including required distances between the heater and turns in the duct, changes in duct sizes, air filters, humidifiers, etc. Unless these instructions specify other distances for horizontal or upflow installations, (1) turns in the duct on the inlet side of the heater should be located at least 4 ft from the heater, (2) turns in the duct on the outlet side of the heater should be located at least 2 ft from the heater, and (3) changes in duct sizes, air filters, humidifiers, etc., should be located at least 4 ft from either side of the heater. Duct heaters having instructions describing particular design characteristics and/or installations are investigated for those specific characteristics and/or installations.

The proper installation of these heaters requires careful consideration of the individual manufacturer's design characteristics, taking into consideration the number of heaters employed, the volume of air passing through the heaters, and the ambient temperatures and source of the air on the input side of the heater installation.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 155 (1986), "Electric Duct Heaters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Duct Heater."

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HEATERS, SAUNA AND STEAM BATH CERTIFIED FOR CANADA (KPJV7)

Sauna Heating Equipment Certified for Canada (KPSX7)

USE AND INSTALLATION

Sauna Heating Equipment Certified for Canada (KPSX7)−*Continued*

This category covers heating equipment intended for concentrated heating at elevated temperatures in relatively confined areas with or without the addition of moisture.

Particular attention should be paid to the heater installation restrictions, such as warning markings, remote thermostats and control installations, guards, minimum size of room, and distance from adjacent surfaces that are marked on the heater.

This equipment is intended for permanent connection to the supply source, except for some sauna heater-room combination units that may be cord connected as specifically indicated.

FACTORS NOT INVESTIGATED

The physiological effects of heat, reduced ventilation, and other conditions that may be found within the room where the heater is installed have not been investigated.

RELATED PRODUCTS

Steam bath equipment is covered under Steam Bath Equipment Certified for Canada (KQBZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 164, "Electric Sauna Heating Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sauna Heater" or "Sauna," or other appropriate product name as shown in the individual Listings.

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Steam Bath Equipment Certified for Canada (KQBZ7)

USE AND INSTALLATION

This category covers steam bath generators combination room and steam generator systems, and steam bath cabinets intended for high-humidity concentrated heating at elevated temperatures for personal bathing.

Steam bath equipment accessories, such as gangable steam units, timer options, and drain options, are also covered under this category. These accessories are intended for installation only on certified equipment as designated in the individual certifications. The accessories are intended primarily for field installation, but may be factory installed.

Information concerning field-wiring connections, mounting location, installation clearances, end-use equipment catalog numbers, etc., are marked on the accessory, and/or in detailed installation instructions accompanying each accessory.

Particular attention should be paid to installation instructions of the steam generator and markings on the product for restrictions, such as minimum distances to adjacent surfaces, valving of the steam outlet, etc.

Steam generators covered under this category have not been investigated for their suitability as a source of steam for space-heating purposes or for industrial or commercial use.

FACTORS NOT INVESTIGATED

The physiological effects of heat, reduced ventilation, and other conditions that may be found within the room where the steam is discharged or where the steam bath is installed have not been investigated.

RELATED PRODUCTS

Sauna heating equipment is covered under Sauna Heating Equipment Certified for Canada (KPSX7).

Steam generators for industrial or commercial use are covered under Heaters, Industrial and Laboratory Certified for Canada (KQLR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 64, "Household Cooking and Liquid-Heating Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Steam Bath Equipment Certified for Canada (KQBZ7)−*Continued*

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Steam Bath Heater,'' ''Steam Bath Equipment,'' ''Steam Bath Cabinet,'' ''Shower/Steamer Unit,'' or other appropriate product name as shown in the individual Listings.

The Listing Mark for accessories may appear on the smallest unit container in which the product is packaged.

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HOSPITALITY-USE APPLIANCES CERTIFIED FOR CANADA (KQDA7)

Hospitality-use Drip-type Coffee Makers Certified for Canada (KQDJ7)

USE AND INSTALLATION

This category covers hospitality-use drip-type coffee makers and other similar drip-type brewing appliances intended for use by the general public in hotel sleeping areas and office environments.

Hospitality-use drip-type coffee makers are subject to the same requirements as household drip-type coffee makers and are grounded.

In cases where the nature or construction of component equipment is such that special precautions beyond the requirements of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' must be observed in installation or use of the appliances, the necessary special instructions are marked on the appliances themselves or are included in the installation instructions provided with the appliance.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects of consuming food prepared by use of these appliances has been investigated.

RELATED PRODUCTS

Drip-type coffee makers intended for commercial use that are found in commercial kitchens, restaurants, or other business establishments where food is dispensed are covered under Commercial Cooking Appliances Certified for Canada (KNGT7).

Drip-type coffee makers intended for household residential use are covered under Household Cooking Appliances Certified for Canada (KNUR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 64 (2010), ''Household Cooking and Liquid-Heating Appliances.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Hospitality-use Drip-type Coffee Maker'' or ''Hospitality-use Coffee Maker.''

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IMMERSION-TYPE LIQUID HEATERS, INDUSTRIAL CERTIFIED FOR CANADA (KQGV7)

USE AND INSTALLATION

This category covers immersion-type liquid heaters intended for heating water-based liquids. The corrosion resistance of the immersed parts has been investigated on the basis of water. The degree of corrosion resistance to acidic, alkaline, etc., water-based liquids may vary depending on the material and/or coating on the immersed parts and the type and strength of the solution. The heater manufacturer's information should be consulted in selecting a heater for an application.

Immersion-type Liquid Heaters, Industrial Certified for Canada (KQGV7)−*Continued*

Through-the-wall heaters should be operated only while the heating element is completely immersed in a water-based liquid. Other immersion-type liquid heaters should be immersed to a depth as marked on the product or as indicated in the installation and use instructions.

The heaters incorporate a temperature-limiting device that responds to the temperatures created by the heater; or the heater is marked to specify that a low-liquid-level cutoff control should be installed and connected to de-energize the heater upon a low-liquid-level condition.

Heaters intended to be installed through the wall of a vessel have means for permanent wiring connections to the electrical supply. Other immersion-type liquid heaters may have either a power-supply cord for cord-and-plug connection or provision for permanent wiring connections to the electrical supply.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 72, ''Heater Elements,'' and CSA-C22.2 No. 88, ''Construction and Test of Industrial Heating Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Immersion Type Liquid Heater.''

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HEATERS, INDUSTRIAL AND LABORATORY CERTIFIED FOR CANADA (KQLR7)

USE AND INSTALLATION

This category covers heating appliances rated 600 V or less and intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC), for industrial and laboratory applications.

Heating appliances covered under this category include branding irons, brazers, dental laboratory heaters, electric kilns, etchers, glue pots, heat guns, heating cable, hot plates, incubators of the air flow and water types, laboratory furnaces and dryers, mobile drying ovens, soldering guns and irons, soldering stations and tools, vacuum ovens and water baths.

Portable electric heating devices of the soldering iron-type present certain inherent hazards. The temperatures necessary for their normal use are high enough to cause fire if they are left in contact with combustible materials.

Infrared heating equipment has not been investigated for use in hazardous (classified) locations as defined in the CEC.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of the CEC must be observed in installation or use, suitable warnings and necessary special instructions are marked on the equipment.

Industrial and laboratory hot plates, ovens and other similar products have not been investigated for explosion and fire hazards involved in the heating of chemicals.

Vapor degreasers are intended for use only with the specific cleaning fluids. Adequate ventilation is required for this equipment and the manufacturer's installation and operation instructions should be followed. The physiological effects of the cleaning fluids intended for use with the degreasing equipment have not been investigated.

An explosion hazard may exist in steam generators because of the accumulation of oxygen and hydrogen in an unvented system operated under standby conditions for long periods of time, or to which condensate is returned. Suitable venting devices should be installed and such systems should be purged frequently.

Steam generators and boilers have not been investigated for their suitability as a source of hot water or steam for space-heating purposes.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following:

Heaters, Industrial and Laboratory Certified for Canada (KQLR7)−*Continued*

CSA-C22.2 No. 88, "Construction and Test of Industrial Heating Equipment"
CSA-C22.2 No. 122, "Hand-Held Electrically Heated Tools"
CSA-C22.2 No. 221, "Electrically Heated Hobby and Educational Type Kilns"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Laboratory Hot Plate," "Soldering Iron," "Laboratory Incubator," "Water Bath," "Branding Iron," or the name of the specific type of product as shown in the individual Listings.

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MICROWAVE COOKING APPLIANCES CERTIFIED FOR CANADA (KQSQ7)

GENERAL

This category covers cooking equipment incorporating one or more microwave generators capable of generating less than 25 kW of microwave power operating in the normal ISM bands above 890 MHz. This equipment includes portable and stationary microwave cooking appliances employing resistive-type heating elements for baking, broiling, browning, convection cooking, or similar operations.

This category also covers combination microwave oven vent-hood fans, and kits for converting counter-top units to built-in, under-cabinet, wall-mounted or similar installations.

These appliances are intended for use in homes, restaurants, food vending or service establishments, and similar locations, in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

All microwave cooking appliances, cord-connected and permanently connected, have provision for being properly grounded.

Products specifically designed for field installation in or on a microwave cooking appliance or to adapt a microwave cooking appliance from one type of installation to another are indicated in the individual certifications and are marked to identify the microwave cooking appliance(s) with which they have been investigated.

Counter-top and under-cabinet mounted units have been investigated individually in two-sided right-angle alcoves.

These microwave cooking appliances are provided with a marking indicating whether they are intended for household use, commercial use, or both.

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by use of these appliances have been investigated.

REBUILT PRODUCTS

This category also covers microwave cooking appliances which are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt microwave cooking appliances are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned component parts. Rebuilt microwave cooking appliances are subject to the same requirements as new microwave cooking appliances.

RELATED PRODUCTS

Household electric ranges and built-in ovens incorporating a microwave cooking feature are covered under Ranges, Household Electric Certified for Canada (KRMX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 150 (1989), "Microwave Ovens."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Microwave Oven," "Microwave Food Warmer," "Microwave Cooking Appliance," "Microwave/Oven Vent Hood Fan," or other appropriate product name as shown in the individual Listings.

Microwave Cooking Appliances Certified for Canada (KQSQ7)−*Continued*

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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PIPE-HEATING CABLE CERTIFIED FOR CANADA (KQUF7)

GENERAL

This category covers electric heating cable, either as an unfinished resistance heating cable or a discrete unit or cable set, or a parallel heating set. This cable may be for cord or permanent connection, for commercial, industrial and residential applications, for use outdoors or indoors.

Indoor uses include soil heating, animal-pen heating and frost protection. Outdoor uses are soil heating, water-pipe frost protection and pipeline heat tracing.

To supplement the general requirements in CAN/CSA-C22.1, "Canadian Electrical Code, Part I," the manufacturer is required to provide specific installation instructions concerning any limitations of the installation and/or use of the equipment.

These products are marked with a Designation Code for their intended use.

The certifications appear separately under the following subcategories: Mobile/Manufactured Home Pipe Heating Cable Certified for Canada (KQVU7), Industrial and Commercial Pipe Heating Cable Certified for Canada KQXR7() and Residential Pipe Heating Cable Certified for Canada (KQYI7).

RELATED PRODUCTS

For de-icing and snow melting equipment, see De-icing and Snow Melting Equipment Certified for Canada (KOBQ7).

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Mobile/manufactured Home Pipe-heating Cable Certified for Canada (KQVU7)

USE AND INSTALLATION

This category covers electric heating cable intended to reduce the likelihood of water freezing in exposed pipes of mobile/manufactured homes. The cable is provided with an attachment plug and intended to be connected to a ground-fault circuit interrupter (Class A type) protected receptacle outlet on the underside of the mobile/manufactured home.

This category applies to heating cable for installation and use in accordance with Section 70 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," on systems having nominal voltages of 250 V or less. Pipe-heating cable is intended to be installed in accordance with the manufacturer's installation instructions.

Unless specifically indicated otherwise by marking on the heating cable or in the installation instructions, this heating cable is intended for use only on metallic pipes.

RELATED PRODUCTS

Heating cable for use as fixed outdoor electric de-icing and snow-melting systems is covered under De-icing and Snow-melting Equipment Certified for Canada (KOBQ7).

Heating cable for use to reduce the likelihood of water freezing in residential pipes is covered under Residential Pipe-heating Cable Certified for Canada (KQYI7).

ADDITIONAL INFORMATION

For additional information, see Pipe-heating Cable Certified for Canada (KQUF7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 130 (2003), "Requirements for Electrical Resistance Heating Cables and Heating Device Sets."

UL MARK

Mobile/manufactured Home Pipe-heating Cable Certified for Canada (KQVU7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Mobile Home Pipe Heating Cable'' or ''Mobile/Manufactured Home Pipe Heating Cable.''

* *

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Industrial and Commercial Pipe-heating Cable Certified for Canada (KQXR7)

USE AND INSTALLATION

This category covers electric heating cable for pipe and vessel heat tracing in industrial and commercial locations, designed to be installed in accordance with Section 62 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

PRODUCT MARKINGS

These products are marked with a Designation Code according to the following table:

Designation	Intended Use
2A	Soil heating
3A	Pipe and vessel tracing (fixed)
3B	Pipe and vessel tracing (fixed)
3C	Pipe and vessel tracing (fixed)
3D	Pipe and vessel tracing (cord-connected)
4A	Heating sets installed in metal pipe, tanks, etc.
4B	Heating sets installed in thermoplastic pipe, tanks, etc.
5A	Pipe and vessel tracing (fixed), damp location
5B	Pipe and vessel tracing (fixed), wet location

RELATED PRODUCTS

See Pipe-heating Cable Certified for Canada (KQUF7).

ADDITIONAL INFORMATION

For additional information, see Pipe-heating Cable Certified for Canada (KQUF7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 130 (2003), ''Requirements for Electrical Resistance Heating Cables and Heating Device Sets.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Heating Cable'' or ''Pipe Heating Cable,'' or other appropriate product name as shown in the individual Listings.

* *

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Residential Pipe-heating Cable Certified for Canada (KQYI7)

USE

This category covers electric heating cable intended to reduce the likelihood of water freezing in residential pipes. The cable is provided with a flexible cord and attachment plug and is intended specifically for residential pipe-heating uses, such as sprinkler systems and in crawl spaces, basements, well houses, and the like.

This category applies to heating cable for installation and use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' on systems having nominal voltages of 600 V or less.

This cable is intended for use in accessible locations only.

HEATERS AND HEATING EQUIPMENT CERTIFIED FOR CANADA (KKBV7)

Residential Pipe-heating Cable Certified for Canada (KQYI7)−*Continued*

This cable is suitable for use on metal and rigid plastic water-filled pipes. Some units incorporate a thermostat that automatically turns on the heating cable when the temperature drops below a predetermined value. The ability of the heating cable to maintain temperatures of liquids in pipes has not been investigated; it depends upon ambient temperature conditions. Heating cable is intended to be installed in accordance with the manufacturer's installation instructions.

ADDITIONAL INFORMATION

For additional information, see Pipe-heating Cable Certified for Canada (KQUF7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 130 (2003), ''Requirements for Electrical Resistance Heating Cables and Heating Device Sets.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Residential Pipe Heating Cable.''

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RADIANT HEATING EQUIPMENT CERTIFIED FOR CANADA (KQYZ7)

USE AND INSTALLATION

This category covers electric heating cable, cable on a carrier, and flexible and rigid electric heating panels and heating panel sets, intended to be installed as fixed equipment for radiant space heating and/or floor warming in accordance with Section 62 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC). These products form an integral part of the building construction after on-site assembly, installation and connection.

The manufacturer is required to provide with the heating devices specific installation instructions concerning any limitations of the installation and/or use of the equipment. These supplement the installation requirements for electric space-heating systems in the CEC. Failure to comply with all installation instructions may result in a risk of fire or electric shock.

The instructions for heating devices intended for burial in concrete specifically indicate that the slab must be a double pour (poured in two parts) if that is the only acceptable means of installation. If such a limitation is not specifically mentioned, either a single or double pour may be used. Cable units are provided with a tag attached to the nonheating leads, which supplement the installation instructions.

Heating products include instructions concerning the intended method of connection to building power, and if additional protection (e.g., conduit) of nonheating leads is anticipated during installation.

Connectors to be assembled to wire or panel busbars in the field using a special tool are intended to be assembled using the tool specified by the manufacturer.

Stapling guns, if used in the installation of heating cable devices require specially designed heads to prevent damage to the conductor insulation. Only those guns recommended by the cable unit manufacturer should be used for this purpose.

PRODUCT MARKINGS

Radiant heating panels and heating panel sets are marked ''Radiant Ceiling Heating Panel,'' ''Radiant Floor Heating Panel,'' ''Radiant Heating Panel'' or ''Radiant Concrete Heating Panel,'' or equivalent, as appropriate. Heating cable sets for installation in ceilings are marked as being specifically intended for this application. Heating devices intended for concrete installation are further marked ''Concrete Installation Only.''

The Certification Mark (as noted under **UL MARK** below) is provided on the product by the manufacturer, or is included with the above marking and is shipped with the product, for attachment to the nonheating leads 3 in. (75 mm) from the source of supply during installation.

The Certification Mark will not appear on other field-applied labels provided with the radiant heating equipment, such as labels for the panel, heating controls, or any other device.

RELATED PRODUCTS

Cable intended for pipe heating is covered under Pipe Heating Cable Certified for Canada (KQUF7).

Radiant Heating Equipment Certified for Canada (KQYZ7)−*Continued*

Heating devices intended for snow melting and de-icing are covered under De-icing and Snow-melting Equipment Certified for Canada (KOBQ7).

Heating panels intended to be installed in a dropped or suspended ceiling are covered under Air Heaters, Room, Fixed and Location Dedicated Certified for Canada (KKWS7).

ADDITIONAL INFORMATION

For additional information, see Heaters and Heating Equipment Certified for Canada (KKBV7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' and CAN/CSA-C22.2 No. 130-03 (2008), ''Requirements for Electrical Resistance Heating Cables and Heating Devices Sets.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Radiant Heating Cable,'' ''Radiant Heating Panel Unit'' or ''Radiant Heating Embedded Unit,'' or other appropriate product name as shown in the individual Listings, preceded by the words ''Radiant Heating.''

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RANGES, HOUSEHOLD ELECTRIC CERTIFIED FOR CANADA (KRMX7)

GENERAL

This category covers household-type, electric freestanding, cord-connected ranges, and permanently connected built-in ranges, ovens and counter-mounted cooking units, or any combination of the above, having a rating not exceeding 250 V and 21 kW, and designed to be installed and used in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Cooking equipment is investigated to determine that it can be properly installed in accordance with the installation instructions provided by the manufacturer.

This category does not cover cooking equipment/refrigerator combinations, hot plates or rangettes.

REBUILT PRODUCTS

This category also covers household electric ranges that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt household electric ranges are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt household electric ranges are subject to the same requirements as new household electric ranges.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by use of these appliances has been investigated.

RELATED PRODUCTS

Products Verified for energy efficiency are covered under Ranges, Household Electric Verified for Energy Efficiency (ZZKM).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations (AALZ) and Heating, Cooling, Ventilating and Cooking Equipment (AAHC).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 61, ''Household Cooking Ranges.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate:

''Electric Range,'' with any of the following as an optional prefix, suffix or modifier: ''Counter-level,'' ''Built-in,'' ''Eye Level,'' ''Drop-in,'' ''Set-in,'' ''Free-standing,'' ''Cooking,'' ''Convection,'' ''Unit.''

Ranges, Household Electric Certified for Canada (KRMX7)−*Continued*

''Electric Oven,'' with any of the following as an optional prefix, suffix or modifier: ''Built-in,'' ''Convection,'' ''Wall-mounted,'' ''Unit.''

''Electric Counter-mounted Cooking Unit,'' ''Electric Counter Cooking Unit'' or ''Electric Cook Top,'' with any of the following as an optional prefix, suffix or modifier: ''Built-in,'' ''Surface,'' ''Radiant,'' ''Smooth Top.''

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

* *

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WATER HEATERS CERTIFIED FOR CANADA (KSAV7)

Commercial Storage Tank and Booster Water Heaters Certified for Canada (KSBZ7)

USE AND INSTALLATION

This category covers water heaters intended to supply hot water for commercial or industrial use, and intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These water heaters are equipped with a temperature-regulating control that limits the water temperature to a maximum of 93°C (200°F). These heaters are also equipped with a manually reset temperature-limit control that restricts the water temperature to a maximum of 99°C (210°F) should the regulating control fail.

A combination temperature-pressure relief value is supplied or factory installed on these heaters. When supplied separately, instructions for mounting the valve are provided with the heater.

ADDITIONAL INFORMATION

For additional information see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 110 (1994), ''Construction and Test of Electric Storage-Tank Water Heaters.''

For commercial water heaters having storage tanks with an inside diameter of 610 mm or greater, the tank is additionally required to meet the applicable pressure vessel requirements of CSA B51 (2009), ''Boiler, Pressure Vessel, and Pressure Piping Code.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Commercial Storage Tank Water Heater'' or ''Booster Water Heater,'' or other appropriate product name as shown in the individual Listings.

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Water Heaters, Space Heating Certified for Canada (KSDR7)

USE AND INSTALLATION

This category covers water heaters intended for the heating of water and storage of hot water for space-heating purposes, to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' These heaters are for use in jurisdictions that permit the use of hot water space-heating systems that do not employ tanks constructed and stamped in accordance with the ''Boiler and Pressure Vessel Act of a Province or Territory of Canada.'' Authorities Having Jurisdiction should be consulted before installation.

These heaters are equipped with temperature-regulating devices that allow a water temperature not higher than 90°C (194°F) and also with temperature-limiting devices that limit the water temperature to a maximum of 99°C (210°F).

Water Heaters, Space Heating Certified for Canada (KSDR7)−*Continued*

A temperature-pressure relief mechanism is provided as part of the certified space-heating water heater.

RELATED PRODUCTS

Pressurized electric water heaters intended for space-heating applications that are constructed and marked in accordance with the "Boiler and Pressure Vessel Act of a Province or Territory of Canada" are covered under Boilers, Electric Certified for Canada (BDJS7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 165, "Electric Boilers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Space-heating Water Heater," or other appropriate product name as shown in the individual Listings.

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Household Water Heaters, Storage Tank Certified for Canada (KSDT7)

USE AND INSTALLATION

This category covers storage tank water heaters rated 600 V or less and 12 kW or less and having a tank capacity of more than 3.78 liters and not more than 454.2 liters.

These water heaters are intended for household use and permanent connection to the supply source in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Household storage tank water heaters are equipped with a temperature-regulating control intended to restrict the water temperature to a maximum of 90°C (194°F). These heaters are also equipped with a manually reset temperature-limit control that restricts the water temperature to a maximum of 96°C (205°F) should a regulating control fail.

Safety devices, such as temperature-pressure-relief mechanisms, are not required to be furnished as part of the certified water heater, but markings and instructions accompany each water heater indicating that a suitable safety device which complies with the local plumbing codes shall be connected to the heater at the time it is installed.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 110 (1990), "Electric Storage Tank Water Heaters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Household Storage Tank Water Heater," or other appropriate product name as shown in the individual Listings.

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Immersion Water Heaters Certified for Canada (KSFX7)

GENERAL

This category covers immersion water heaters, both cord-connected and for permanent connection.

Immersion Water Heaters Certified for Canada (KSFX7)−*Continued*

Some immersion water heaters intended for permanent connection incorporate thermostats and auxiliary switches which respond to the temperatures created by the immersion water heaters. The acceptability of thermostats or auxiliary switch construction; as temperature regulating and/or safety controls when incorporated in the ultimate equipment assembly for which they are intended, must be determined in accordance with the requirements applicable to that equipment.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 72 (1984), "Heater Elements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Immersion Heater," or other appropriate product name as shown in the individual Listings.

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Miscellaneous Water Heaters Certified for Canada (KSGR7)

GENERAL

This category covers instantaneous heaters, strap-on-type heaters, heaters for sink or water-cooler mounting, and other water heaters not covered under Household Water Heaters, Storage Tank Certified for Canada (KSDT7), Commercial Storage Tank and Booster Water Heaters Certified for Canada (KSBZ7) or Immersion Water Heaters Certified for Canada (KSFX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 64 (1991), "Household Cooking and Liquid-Heating Appliances," or CSA-C22.2 No. 88 (1958), "Industrial Heating Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Instantaneous Water Heater" or "Water Heater," or other appropriate product name as shown in the individual Listings.

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Alternative-energy Water-storage Tanks and Multi-energy Water Heaters Certified for Canada (UZWZ7)

USE AND INSTALLATION

This category covers water-storage tanks intended for use as components of alternative-energy, such as geothermal or solar, heating systems to provide potable hot water for domestic and/or commercial use. Installation is intended to be in accordance with the manufacturer's instructions employing the heat-transfer fluid(s) specified by the manufacturer.

This category also covers multi-energy water heaters which, in addition to their use as components of alternative-energy heating systems, employ an integral energy source, such as electricity, gas or oil, to supplement the alternative-energy source for heating the water.

Alternative-energy Water-storage Tanks and Multi-energy Water Heaters Certified for Canada (UZWZ7)−*Continued*

For domestic-use, alternative-energy water-storage tanks, safety devices, such as temperature-pressure-relief mechanisms, may not be furnished as part of the certified water-storage tank. However, markings and instructions accompany each tank indicating that a suitable safety-relief device that complies with the local plumbing codes is intended to be connected to the heater at the time it is installed. Alternative-energy water-storage tanks used in commercial applications are factory supplied with a combination temperature-pressure-relief valve.

Multi-energy water heaters are equipped with pressure- and temperature-relief devices to prevent rupture of the storage tank due to internal pressure. Other safety controls, such as a thermostat and a high-limit control, are also provided in accordance with the applicable standard, as noted below.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate alternative-energy water-storage tanks in this category is CAN/CSA-C22.2 No. 110 (1994), ''Construction and Test of Electric Storage-Tank Water Heaters.''

The basic standards used to investigate multi-energy water heaters in this category are:

Electric: CAN/CSA-C22.2 No. 110 (1994)

Gas-fired: ANSI Z21.10.1/CSA 4.1 (2009), ''Gas Water Heaters – Volume I, Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less,'' or ANSI Z21.10.3/CSA 4.3 (2004), ''Gas Water Heaters – Volume III, Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous''

Oil-fired: CSA B140.12 (2003), ''Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Alternative-energy Water-storage Tank'' or ''Multi-energy Water Heater.''

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HEATERS, SPECIALTY CERTIFIED FOR CANADA (KSOT7)

USE

This category covers heating appliances rated 600 V or less for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC). This includes heating appliances intended for household and industrial applications, as well as products that generate steam for other than space-heating purposes, and have an electrical power rating of 15 kW or less per steam-generating vessel. A heating appliance is defined as an electrically energized product that directly or indirectly generates heat to perform its intended function.

Heating devices may present certain inherent hazards. The temperature necessary for their normal use can be high enough to cause fire if they are left in contact with combustible materials.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of the CEC must be observed in installation or use, necessary special instructions are marked on the equipment.

REBUILT PRODUCTS

This category also covers steam-cleaning machines, steam-cleaning machines with sweeper features and steam-cleaning machines with vacuum features that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt steam-cleaning machines, steam-cleaning machines with sweeper features and steam-cleaning machines with vacuum features are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt steam-cleaning machines, steam-cleaning machines with sweeper features and steam-cleaning machines with vacuum features are subject to the same requirements as new steam-cleaning machines, steam-cleaning machines with sweeper features and steam-cleaning machines with vacuum features.

Heaters, Specialty Certified for Canada (KSOT7)−*Continued*

Rebuilt products are required to be provided with a date code indicating the date of rebuilding.

RELATED PRODUCTS

Fan-type hand warmers are covered under Fans, Electric Certified for Canada (GPWV7).

Industrial and laboratory heaters, including mobile drying ovens, soldering stations and tools, laboratory furnaces, incubators, hot plates, electric kilns, dental laboratory heaters, and the like are covered under Heaters, Industrial and Laboratory Certified for Canada (KQLR7).

Devices intended for vaporization of water, certain medicaments in water solution and glycol are covered under Vaporizers Certified for Canada (YEIV7).

Incubators and brooders intended for use on farms and commercial hatcheries are covered under Incubators and Brooders Certified for Canada (NHYZ7).

Heated air deodorizers and air fresheners are covered under Deodorizers and Air Fresheners Certified for Canada (EOGX7).

Instantaneous water heaters, strap-on heaters, heaters for sink or water-cooler mounting are covered under Miscellaneous Water Heaters Certified for Canada (KSGR7).

Heaters intended for installation in or adjacent to swimming pools or spas are covered under Heaters Certified for Canada (WBRR7).

Household vacuum cleaners provided with a steam-cleaning feature, where the vacuum cleaner is the appliance's primary function, are covered under Vacuum Cleaning Machines and Blower Cleaners Certified for Canada (DMLW7).

Steam-cleaning machines with sweeper features, where the sweeper function is the appliance's primary function, are covered under Cleaning Machines, Motor Operated Certified for Canada (DMGK7).

High-pressure cleaning machines provided with steam-cleaning features, where the high-pressure-cleaning function is the appliance's primary function, are covered under High-pressure Cleaning Machines, Electrically Operated Certified for Canada (DMKK7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following:

CSA-C22.2 No. 122, ''Hand-Held Electrically Heated Tools''

CSA-C22.2 No. 36, ''Hairdressing Equipment''

CAN/CSA-C22.2 No. 191, ''Engine Heaters and Battery Warmers''

CAN/CSA-C22.2 No. 64, ''Household Cooking and Liquid-Heating Appliances''

Pet-warming mats and pet beds are investigated to CAN/CSA-C22.2 No. 15, ''Electrically Heated Warming Pads.''

Steam-cleaning machines with vacuum-cleaning features, where the steam cleaner is the appliance's primary function, are additionally investigated to CSA-C22.2 No. 243, ''Vacuum Cleaners, Blower Cleaners and Household Floor Finishing Machines.''

Steam-cleaning machines with sweeper features, where the steam cleaner is the appliance's primary function, are additionally investigated to CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial).''

Steam-cleaning machines with high-pressure-cleaning features, where the steam cleaner is the appliance's primary function, are additionally investigated to CAN/CSA-C22.2 No. 68.

Additional standards may be applicable based on the features employed. In addition, the following requirements are also used as applicable:

CSA Technical Information Letter No. C-37, ''Input Ratings for Cord-Connected Heating and Cooking Appliances, Hairdressing Equipment and Electric Irons for Household Use'' (issued 2-28-05)

CSA Technical Information Letter No. C-38, ''Guidelines Regarding Selection of Thermostats for Testing'' (issued 6-20-05)

CSA Technical Information Letter No. C-40, ''Hair Straighteners and Crimpers Intended for Household Use'' (issued 8-16-06)

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Hand Dryer,'' ''Pet Dryer,'' ''Embosser,'' ''Stock Tank Heater,'' ''Charcoal Igniter,'' or the name of the specific type of product as shown in the individual Listings.

For rebuilt products, the word ''Rebuilt,'' ''Refurbished'' or ''Remanufactured'' precedes the product name.

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Heaters, Specialty Certified for Canada (KSOT7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

HEATERS, EMITTER TYPE, CERTIFIED FOR USE IN SPECIFIED EQUIPMENT CERTIFIED FOR CANADA (KSSG7)

USE

This category covers heaters intended for installation on specific models of UL-certified heating equipment that are shipped from the factory without heaters installed. These heaters have been investigated by UL in specific models identified in markings or instructions to determine that, when used in accordance with the manufacturer's instructions, the complete product complies with applicable requirements.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 72, ''Heater Elements.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY]
FOR USE WITH [identification of specified UL Listed product]
Control No.
*** ***

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HEATING APPLIANCES CERTIFIED FOR CANADA (KTCR7)

GENERAL

This category covers heating appliances intended for installation and use in accordance with appropriate standards as required by the province in which the appliance is being installed, such as:

- CAN/CSA-B139-1991, ''Installation Code for Oil-Burning Equipment''
- CAN/CGA-B149.1-1991, ''Natural Gas Installation Code''
- CAN/CGA-B149.2-1991, ''Propane Installation Code''
- CAN/CGA-B149.4-1991, ''Natural Gas for Vehicles Installation Code''
- CAN/CSA-C22.1, ''Canadian Electrical Code, Part I''
- CAN/CSA-A405-1987, ''Design and Construction of Masonry Chimneys and Fireplaces''
- ''National Building Code of Canada''

Heating appliances are investigated to determine the suitability of the construction and performance of the appliances as an assembly and of the fuel-burning apparatus, controls, electrical features and other parts furnished by the manufacturer as part of the Listed assembly. It is also determined that combustible walls and surfaces adjacent to or in contact with the appliance will not attain unsafe temperatures when the appliance is installed and used as directed.

Heating appliances are marked to indicate minimum clearances in mm (inches), type of flooring, when they may be installed in an alcove or closet, and the total free area of the required air openings into a closet. Unless otherwise indicated, the designated clearances (other than ''zero'') are based on tests of units with uninsulated sheet-metal ducts and plenum attached. Under these conditions, temperatures below established criteria have been measured on a wooden test enclosure, representing combustible construction, spaced at the specified clearance (air) from the unit, ducts and plenum.

When the Listing Mark on an appliance includes the statement ''For Operation Only In Presence of Competent Attendant,'' such appliances are not furnished with primary safety controls and are intended for operation only in the presence of a competent attendant.

The Listing Mark applied to an oil-burning appliance designates the ANSI/ASTM D396 grade number of the fuel oil, or other fuel, for which the appliance is Listed.

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ABSORPTION AIR CONDITIONING EQUIPMENT CERTIFIED FOR CANADA (KTFV7)

USE

This category covers unitary-type equipment rated 600 V or less employing an absorption type refrigeration system. The equipment is intended for air conditioning or liquid heating and cooling for air conditioning and similar purposes. This category includes equipment intended for indoor and/or outdoor use.

The direct energy source for cooling and heating is a gas-, oil-, or gas-oil-fired burner(s) and may additionally include hot fluid (such as gas, liquid or steam) as obtained from an external source such as a solar-heat system or waste-heat. The oil- or gas-oil-fired burners are intended to burn standard grade fuel oils as specified in CAN/CGSB 3.2, ''Heating Fuel Oil.''

INSTALLATION

This equipment is intended to be installed in accordance with the markings on the equipment and the installation instructions provided with the equipment, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, as well as the current editions of the following, as applicable:

- CSA B139, ''Installation Code for Oil-Burning Equipment''
- CSA B149.1, ''Natural Gas and Propane Installation Code''
- CAN/CGA-B149.2, ''Propane Storage and Handling Code''
- CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC)
- CSA B140.0, ''Oil-Burning Equipment: General Requirements''
- CAN/CGSB 3.2, ''Heating Fuel Oil''
- ''National Building Code of Canada''

Unitary absorption air conditioning equipment consists of one or more factory-built sections. If the equipment is provided in two or more sections, each such section is designed for field interconnection with a matched section(s) to make the absorption air conditioning assembly. Equipment provided in two or more sections is marked to identify the appropriate sections for proper installation.

In units employing two or more motors or a motor(s) and other loads operating from a single supply circuit, the motor overload protective devices (including thermal protection for motors) and other factory-installed motor circuit components and wiring are investigated on the basis of compliance with the motor branch circuit, short-circuit and ground-fault protection requirements of the CEC. Such multi-motor and combination load equipment is intended to be connected only to a circuit protected by fuses or a circuit breaker with a rating which does not exceed the value marked on the data plate. This marked protective device rating is the maximum for which the equipment has been investigated and found acceptable.

This equipment is marked with information specifying the type(s) of gas supply and/or grade of fuel oil supply to which it is intended to be connected. It is also marked with the type of refrigerant used.

Units suitable for outdoor installation are so marked. Sections not marked as suitable for outdoor installation are intended for indoor use only.

RELATED PRODUCTS

For absorption air conditioning equipment that utilizes only a hot fluid (such as gas, liquid or steam) as the direct-energy source for cooling and heating, see Heating and Cooling Equipment Certified for Canada (LZFE7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 236-2005, ''Heating and Cooling Equipment,'' in addition to the applicable standards noted in the following table:

Equipment	Gas-fired Input Rating	Standard
Gas-fired	≤ 400,000 Btu/h (117.23 kW)	ANSI Z21.40.1/CGA 2.91[1]

Absorption Air Conditioning Equipment Certified for Canada (KTFV7)−*Continued*

Equipment	Gas-fired Input Rating	Standard
Gas-fired	≥ 400,000 Btu / h (117.23 kW)	CSA / CAN1-3.1[2]
Gas-Oil-fired	≤ 400,000 Btu / h (117.23 kW)	ANSI Z21.40.1 / CGA 2.91[1] and CSA B140.7[3]
Gas-Oil-fired	≥ 400,000 Btu / h (117.23 kW)	CSA / CAN1-3.1[2] and CSA B140.7[3]
Oil-fired	—	CSA B140.7[3]

[1] Refers to the current edition and effective addenda thereto of the American National Standards Institute / CGA Standard, "Gas-Fired, Heat Activated Air-Conditioning and Heat Pump Appliances"

[2] Refers to the Standard for "Industrial and Commercial Gas-Fired Package Boilers"

[3] Refers to the Standard for "Oil-Burning Equipment: Steam and Hot-Water Boilers"

UL MARK

(Gas Only and Gas-Oil Equipment)

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name "Gas-fired (or Gas-Oil-fired) Absorption Air Conditioning Equipment," and

1

(a) for equipment with gas-fired inputs up to and including 400,000 Btu / h (117.23 kW), the standard designation "ANS Z21.40.1(+) CGA 2.91(+)-(++)"
(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

or

(b) for equipment with gas-fired inputs over 400,000 Btu / h (117.23 kW), no standard reference

and

2

(a) for gas-fired equipment designed for installation of the burner in the field or at another factory, the statement "For Use Only with [Company Name] Listed Gas-Burner Model(s) ____, Max Input ____ BTU Per Hour. Refer to Burner Label for Control and Fuel Specifications."

or

(b) for gas-oil-fired equipment designed for installation of the burner in the field or at another factory, the statement "For Use Only with [Company Name] Listed Gas-Oil Burner Model(s) ____, Max Input-Oil ____ Gals Per Hour, Gas ____ BTU Per Hour. Refer to Burner Label for Control and Fuel Specifications."

For 2 (a) and 2 (b) above, the UL Listing Mark on the air conditioning equipment covers the air conditioning equipment only. The burner bears a separate UL Listing Mark as described under Domestic Gas Conversion Burners Certified for Canada (KXSB7), Commercial / Industrial Gas Burners Certified for Canada (KXWT7) or Gas-Oil Burners Certified for Canada (KYKR7).

UL MARK

(Oil Only Equipment)

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name "Oil-fired Absorption Air Conditioning Equipment," and for oil-fired equipment designed for installation of the burner in the field or at another factory(+), the statement "For Use Only with [Company Name] Listed Oil Burner Model(s) _____, Max Input _____ Gals Per Hour. Refer to Burner Label for Control and Fuel Specifications."

(+) For this situation, the UL Listing Mark on the air conditioning equipment covers the air conditioning equipment only. The burner bears a separate UL Listing Mark as described under Oil Burners Certified for Canada (KYXZ7).

*** ***

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ACCESSORIES FOR BURNERS CERTIFIED FOR CANADA (KTJQ7)

USE AND INSTALLATION

Accessories for Burners Certified for Canada (KTJQ7)−*Continued*

This category covers accessories intended for gas and / or oil burners as identified in the individual certifications. They have been investigated only to determine that when installed in accordance with the manufacturer's instructions, they do not adversely affect the operation of the specified certified burner.

RELATED PRODUCTS

See Domestic Gas Conversion Burners Certified for Canada (KXSB7), Commercial / Industrial Gas Burners Certified for Canada (KXWT7), Gas-Oil Burners Certified for Canada (KYKR7) and Oil Burners Certified for Canada (KYXZ7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA B140.0, "Oil-Burning Equipment: General Requirements," CSA B140.2.1 (1990), "Atomizing-Type Oil Burners," and CSA / CGA 3.4, "Industrial and Commercial Gas-Fired Conversion Burners."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY]
FOR USE WITH LISTED [TYPE OF BURNER] ONLY
Control No.

*** ***

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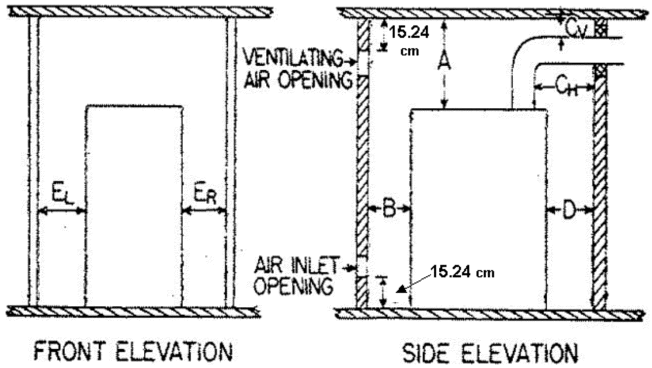
BOILER ASSEMBLIES CERTIFIED FOR CANADA (KVFT7)

USE AND INSTALLATION

This category covers gas-, gas-oil-, and oil-fired boiler assemblies intended for installation on the type of floors and with clearances to combustible construction not less than indicated on the boiler assembly. They are provided with primary safety controls as indicated in the boiler assembly Listing Mark or in the burner Listing Mark and with limit controls.

The sketches, dimension symbols and abbreviations as illustrated below are referenced in the individual Listings to indicate minimum clearances in cm (inches), type of flooring, when an appliance may be installed in an alcove or closet, and the total free area of the required air openings into a closet. This information is also marked on the appliance. The clearances so designated are the minimums required to avoid overheating; additional clearances may be needed for accessibility.



Installation Symbols and Abbreviations

Descriptions of symbols and abbreviations applicable to the installation of boiler assemblies are as follows:

A – Clearance above top of boiler

B – From front of boiler. Prefix "C" to numeral indicates suitability for closet or alcove installations; prefix "A" indicates suitability for alcove installation only

C_H – From chimney or vent connector measured horizontally or below pipe

C_V – From chimney or vent connector measured vertically above pipe

Boiler Assemblies Certified for Canada (KVFT7)−*Continued*

D – From back of boiler
E_L – From left side of boiler
E_R – From right side of boiler
F – Indicates type of flooring: NC = Noncombustible, C = Combustible
G – Total minimum free area, in square mm (square inches), of air openings into a closet

Typical Installation Clearances for Gas-, Gas-Oil-, and Oil-fired Boiler Assemblies

When a gas-, gas-oil-, or oil-fired boiler assembly is Listed for typical installation clearances, the individual Listings may refer to the Form designation. Form designations for typical installation clearances for these types of boiler assemblies installed in rooms are indicated in the table below. Clearances may be indicated in the individual Listings. If a boiler assembly Listed for alcove or closet installation is installed in a room which is large in relation to the size of the boiler assembly, it may be installed at the minimum clearances specified for closet and alcoves or as indicated by the designated optional Form.

Form	Standard Minimum Clearances, cm (in.)							
	A	B	C_H	C_V	D	E_L	E_R	F
II	15.24 (6)	60.96 (24)	42.74 (18)	42.74 (18)	15.24 (6)	15.24 (6)	15.24 (6)	NC
IIa	15.24 (6)	60.96 (24)	42.74 (18)	42.74 (18)	15.24 (6)	15.24 (6)	15.24 (6)	C
III	42.74 (18)	121.92 (48)	42.74 (18)	42.74 (18)	42.74 (18)	42.74 (18)	42.74 (18)	NC
IIIa	42.74 (18)	121.92 (48)	42.74 (18)	42.74 (18)	42.74 (18)	42.74 (18)	42.74 (18)	C
IV	121.92 (48)	243.84 (96)	91.44 (36)	91.44 (36)	91.44 (36)	91.44 (36)	91.44 (36)	NC
IVa	121.92 (48)	243.84 (96)	91.44 (36)	91.44 (36)	91.44 (36)	91.44 (36)	91.44 (36)	C
XII	15.24 (6)	42.74 (18)	15.24 (6)	15.24 (6)	15.24 (6)	15.24 (6)	15.24 (6)	NC
XIIa	15.24 (6)	42.74 (18)	15.24 (6)	15.24 (6)	15.24 (6)	15.24 (6)	15.24 (6)	C

Gas-, gas-oil-, and oil-fired boiler assemblies Listed for Forms II, IIa, III, and IIIa are low-heat appliances; those Listed for Forms IV and IVa are medium-heat appliances, all of which are intended to be flue connected to suitable chimneys

Gas-, gas-oil-, and oil-fired boiler assemblies Listed for Forms XII and XIIa and those Listed for Form III and IIIa equipped with draft hoods are low-heat gas appliances suitable for venting to Type B vents for gas appliances

Solid-fuel-fired boiler assemblies are intended for installation on the type of floor and with clearances to combustible construction from sides, rear, front and chimney connector not less than indicated on the boiler assembly. The chimney connectors should be connected to a chimney suitable for use with residential type and building heating appliances that burn solid fuel.

Solid-fuel-fired boiler assemblies are intended for installation on the type of floor and with clearances to combustible construction from sides, rear, front and chimney connector not less than indicated on the boiler assembly. The chimney connectors should be connected to a chimney suitable for use with residential type and building heating appliances that burn solid fuel.

* *

Gas-fired Boiler Assemblies Certified for Canada (KVTR7)

USE AND INSTALLATION

This category covers factory-built, gas-fired boiler assemblies with inputs of more than 400,000 Btu/hr intended for commercial and industrial use.

These boiler assemblies are intended to be installed in accordance with the markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, in addition to local codes.

The minimum clearance markings may be in the form of symbols, Form designations (for typical installations) and abbreviations as noted under Boiler Assemblies Certified for Canada (KVFT7). This information is also included in the individual Listings.

RELATED PRODUCTS

See Commercial/Industrial Gas Burners Certified for Canada (KXWT7), Gas-fired Low-pressure Steam and Hot Water Boilers Certified for Canada (KVUY7) and Oil-fired Boiler Assemblies Certified for Canada (KWUX7).

ADDITIONAL INFORMATION

For additional information, see Boiler Assemblies Certified for Canada (KVFT7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

Gas-fired Boiler Assemblies Certified for Canada (KVTR7)−*Continued*

The basic standard used to investigate products in this category is CSA/CAN1-3.1, "Industrial and Commercial Gas-Fired Package Boilers."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and one of the following product names and information as appropriate:

(A) "Gas-fired Boiler Assembly. For Use With Integral Primary Safety Controls."

(B) "Boiler Assembly. For Use Only With [Company Name] Listed Gas Burner Model(s) ____. Max Input ____ BTU Per Hour. Refer to Burner Label for Control and Fuel Specifications."

A gas-fired boiler assembly that includes the burner assembly as part of the factory-furnished assembly bears a Listing Mark with the product name and information similar to (A).

A boiler assembly designed for installation of the burner in the field or at another factory bears a Listing Mark with the product name and information similar to (B), which covers the boiler only.

The burner bears a separate Listing Mark as described for gas burners (see KXWT7). The proper assemblies of boilers and burners to make unit assemblies are as specified in the boiler Listing Mark.

* *

Gas-fired Low-pressure Steam and Hot Water Boilers Certified for Canada (KVUY7)

USE AND INSTALLATION

This category covers self-contained gas-fired boilers with integral burners, rated 12,500,000 Btu/h or less and 3.45 kPa inlet pressure or less, for supplying hot water or steam primarily intended for space-heating purposes as identified in the individual certifications. Hot water boilers are limited to 1.10 MPa water pressure and 121°C water temperature. Low-pressure -steam boilers are limited to 103.42 kPa steam pressure.

Gas-fired, low-pressure steam and hot water boilers in this category are intended to be installed in accordance with the instructions and markings, including specified gas supply, on the appliance and with the current edition of CAN/CSA-B149.1, "Natural Gas and Propane Installation Code." CAN/CSA-B149.1 specifies that vents constructed using plastic piping shall comply with ULC-S636, "Type BH Gas Venting Systems." This requirement includes standard vents and vent fittings, including but not limited to, transitions and termination kits.

BOILER CATEGORIES

Boilers of other than the direct-vent type are divided into four categories based on the pressure produced in the vent and the flue loss:

Category I – A boiler that operates with a non-positive vent static pressure and with a flue loss no less than 17%.
Category II – A boiler that operates with a non-positive vent static pressure and with a flue loss less than 17%.
Category III – A boiler that operates with a positive vent static pressure and with a flue loss no less than 17%.
Category IV – A boiler that operates with a positive vent static pressure and with a flue loss less than 17%.

Boilers may also be of the direct-vent type.

ADDITIONAL INFORMATION

For additional information, see Boiler Assemblies Certified for Canada (KVFT7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.13/CSA 4.9, "Gas-Fired Low Pressure Steam and Hot Water Boilers."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation "ANS Z21.13(+) CSA 4.9(+)-(++) Low-Press. Boiler."

(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

Gas-fired Low-pressure Steam and Hot Water Boilers Certified for Canada (KVUY7)−*Continued*

* *

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Gas-oil-fired Boiler Assemblies Certified for Canada (KWGZ7)

USE AND INSTALLATION

This category covers factory-built, gas-oil-fired boiler assemblies intended for commercial or industrial use and for use with standard fuel gases, such as propane and natural gas, and standard grade fuel oils as specified in ANSI/ASTM D396, ''Standard Specification for Fuel Oils.'' A gas-oil-fired boiler assembly may be furnished either as a unit assembly with a factory-installed gas-oil burner or in two segments, one the boiler assembly and the other the gas-oil burner, each factory built to accommodate the other.

These boiler assemblies are intended to be installed in accordance with the markings on the equipment and the installation instructions provided with the equipment, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, in addition to the appropriate local installation codes.

The minimum clearance markings may be in the form of symbols, Form designations (for typical installations) and abbreviations as noted under Boiler Assemblies Certified for Canada (KVFT7). This information is also included in the individual Listings.

RELATED PRODUCTS

See Gas-fired Boiler Assemblies Certified for Canada (KVTR7), Oil-fired Boiler Assemblies Certified for Canada (KWUX7) and Gas-Oil Burners Certified for Canada (KYKR7).

ADDITIONAL INFORMATION

For additional information, see Boiler Assemblies Certified for Canada (KVFT7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-B140.7, ''Oil-Burning Equipment: Steam and Hot Water Boilers,'' and CSA/CAN1-3.1, ''Industrial and Commercial Gas-Fired Package Boilers.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and one of the following product names and information as appropriate:

(A) ''Gas-Oil-fired Boiler Assembly. For Use With Integral Primary Safety Controls.''

(B) ''Boiler Assembly. For Use Only With [Company Name] Listed Gas-Oil Burner Model(s) ____. Max Input – Oil ____ Gals Per Hour, Gas ____ BTU Per Hour. Refer to Burner Label for Control and Fuel Specifications.''

A gas-oil-fired boiler assembly that includes the burner as part of the factory-furnished assembly bears a Listing Mark with the product name and information similar to (A).

A boiler assembly designed for installation of the burner in the field or at another factory bears a Listing Mark with the product name and information similar to (B), which covers the boiler only. The burner bears a separate Gas-fired Listing Mark as described for gas-oil burners (see KYKR7). The proper assemblies of boilers and burners to make unit assemblies are as specified in the boiler Listing Mark.

* *

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Oil-fired Boiler Assemblies Certified for Canada (KWUX7)

USE AND INSTALLATION

This category covers factory-built, oil-fired boiler assemblies intended for commercial and industrial use and for use with standard grade fuel oils as specified in CSA B140.0, ''Oil-Burning Equipment: General Requirements,'' and CAN/CGSB 3.2, ''Heating Fuel Oil.'' An oil-fired boiler assembly may

Oil-fired Boiler Assemblies Certified for Canada (KWUX7)−*Continued*

be furnished either as a unit assembly with a factory-installed oil burner or in two segments, one the boiler assembly and the other the oil burner, each factory built to accommodate the other.

These boiler assemblies are intended to be installed in accordance with the markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, in addition to the appropriate Canadian installation codes and standards and local codes.

The minimum clearance markings may be in the form of symbols, Form designations (for typical installations) and abbreviations as noted under Boiler Assemblies Certified for Canada (KVFT7). This information is also included in the individual Listings.

RELATED PRODUCTS

See Oil Burners Certified for Canada (KYXZ7) and Gas-Oil-fired Boiler Assemblies Certified for Canada (KWGZ7).

ADDITIONAL INFORMATION

For additional information, see Boiler Assemblies Certified for Canada (KVFT7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B140.7, ''Oil-Burning Equipment: Steam and Hot Water Boilers.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names and information as appropriate:

(A) ''Oil-fired Boiler Assembly. For Use With Integral Primary Safety Controls. Oil Not Heavier Than No. ____.''

(B) ''Boiler Assembly. For Use Only With [Company Name] Listed Oil Burner Model(s) ____. Max Input ____ Gals Per Hour. Refer to Burner Label for Control and Fuel Specifications.''

An oil-fired boiler that includes the burner as part of the factory-furnished assembly bears a Listing Mark with the product name and information similar to (A).

A boiler assembly designed for installation of the burner in the field or at another factory bears a Listing Mark with the product name and information similar to (B), which covers the boiler only. The burner bears a separate Listing Mark as described for oil burners (see KYXZ7). The proper assemblies of boilers and burners to make unit assemblies are as specified in the boiler Listing Mark.

* *

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Solid-fuel-fired Hydronic Heating Appliances and Boiler Assemblies Certified for Canada (KXBW7)

USE AND INSTALLATION

This category covers factory-built, manually and/or automatically fueled, solid-fuel-fired hydronic heating appliances and boiler assemblies intended to burn solid fuels, such as wood, coal, or any other biomass fuel, as specified by the manufacturer and as indicated in the individual certifications. These appliances are provided with an integral chimney and termination or intended for connection to an approved chimney, suitable for use with residential type and building heating appliances that burn solid fuel. They are intended for installation in accordance with CAN/CSA-B365, ''Installation Code for Solid Fuel Burning Appliances and Equipment.''

A hydronic heating appliance is defined as an appliance that maintains a constant atmospheric internal working pressure (nonpressurized vessel) and is designed to heat a liquid, such as water, that is circulated between a heating load and the heating source (appliance).

A boiler is defined as a closed vessel in which water or some other liquid is heated or in which steam is generated or superheated, under pressure or vacuum, by direct application of heat.

The installation is intended to be accomplished by a qualified agency (one who is engaged in, and is responsible for, or is thoroughly familiar with the installation and operation of solid-fuel-burning heating appli-

Solid-fuel-fired Hydronic Heating Appliances and Boiler Assemblies Certified for Canada (KXBW7)−*Continued*

ances, who is experienced in such work, familiar with all precautions required, and has complied with all the requirements of the Authority Having Jurisdiction).

The installation is intended to be in strict accordance with the manufacturer's installation instructions furnished with the solid-fuel-fired appliance, and with the clearances to combustible material not less than marked on the unit. The type of floor (combustible or noncombustible) on which the appliance may be installed is also marked.

When the boiler assembly is permitted to be installed on a combustible floor, the floor beneath the boiler assembly is to be covered with insulating, noncombustible floor protection as specified in the manufacturer's instructions and in CAN/CSA-B365.

The chimney connector of the appliance should be installed to provide clearances to combustible material not less than specified in the individual certifications and marked on the unit.

ADDITIONAL INFORMATION

For additional information, see Boiler Assemblies Certified for Canada (KVFT7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-B366.1, "Solid-Fuel-Fired Central Heating Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Hydronic Heating Appliance," "Solid Fuel Boiler" or "Solid Fuel-fired Boiler Assembly."

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Commercial/industrial Gas Burners Certified for Canada (KXWT7)

USE AND INSTALLATION

This category covers commercial/industrial gas burners with input ratings over 400,000 Btu/h (117.23 kW) intended for installation in heating appliances, such as boilers, furnaces, heaters, ovens, water heaters, incinerators, etc. These gas burners are provided with primary safety controls as indicated in the Listing Mark, permitting their operation without a competent attendant being present while the burner is firing.

These burners may be a one-piece assembly or may include subassemblies such as a main electrical control panel, etc., intended for remote mounting as indicated in the individual Listings. When a burner includes subassemblies intended for remote mounting, the subassemblies specifically Listed are intended to be employed unless otherwise specified on the marking on the burner.

These burners are intended to be installed in accordance with the markings on the burner and the installation instructions provided with the burner, and the following as applicable:

- the current edition of CAN/CSA-B149.1, "Natural Gas and Propane Installation Code"
- the current edition of CAN/CSA-C22.1, "Canadian Electrical Code, Part I"
- local codes

These burners are marked with information specifying the type(s) of gas supply to which the burner is intended to be connected.

RELATED PRODUCTS

See Domestic Gas Conversion Burners Certified for Canada (KXSB7), Gas-Oil Burners Certified for Canada (KYKR7) and Oil Burners Certified for Canada (KYXZ7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA/CGA 3.4, "Industrial and Commercial Gas-Fired Conversion Burners."

UL MARK

Commercial/industrial Gas Burners Certified for Canada (KXWT7)−*Continued*

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name "Commercial/Industrial Gas Burner," and the statement "For Use With Integral Primary Safety Controls."

The Listing Mark of UL on subassemblies intended for remote mounting is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Control Panel Section of Gas Burner," or other appropriate product name as shown in the individual Listings.

The Listing Marks cover only the burner and appurtenant subassemblies and do not cover any appliance to which the burner may be applied.

****

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Gas-oil Burners Certified for Canada (KYKR7)

USE AND INSTALLATION

This category covers both domestic and commercial/industrial gas-oil burners intended for installation in heating appliances, such as boilers, furnaces, heaters, ovens, water heaters, incinerators, etc. These gas-oil burners are provided with primary safety controls as indicated in the Listing Mark, permitting their operation without a competent attendant being present while the burner is firing. These burners are intended to burn standard grade fuel oils as specified in CSA B140.0, "Oil-Burning Equipment: General Requirements."

These burners may be a one-piece assembly or may include subassemblies such as a main electrical control panel, oil or air pump set, etc., intended for remote mounting as indicated in the individual Listings. When a burner includes subassemblies intended for remote mounting, the subassemblies specifically Listed are intended to be employed unless otherwise specified on the marking on the burner.

These burners are intended to be installed in accordance with the markings on the burner and the installation instructions provided with the burner, and the following as applicable:

- the current edition of CSA B149.1, "Natural Gas and Propane Installation Code"
- the current edition of CSA B139, "Installation Code for Oil-Burning Equipment"
- the current edition of CAN/CSA-C22.1, "Canadian Electrical Code, Part I"
- local codes

These burners are marked with information specifying the type(s) of gas supply and the heaviest grade of fuel oil supply to which the burner is intended to be connected.

RELATED PRODUCTS

See Domestic Gas Conversion Burners Certified for Canada (KXSB7) and Oil Burners Certified for Canada (KYXZ7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate domestic gas-oil burners with gas-fired inputs up to and including 400,000 Btu/h (117.23 kW) are the current edition and effective addenda thereto of ANSI Z21.17/CSA 2.7, "Domestic Gas Conversion Burners," and the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA B140.2.1-1990, "Atomizing-Type Oil Burners."

The basic standards used to investigate commercial/industrial gas-oil burners with gas-fired inputs over 400,000 Btu/h (117.23 kW) are the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA/CGA 3.4, "Industrial and Commercial Gas-Fired Conversion Burners," and the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA B140.2.1-1990.

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes

Gas-oil Burners Certified for Canada (KYKR7)−*Continued*

the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name "Gas-Oil Burner," the statement "For Use With Integral Primary Safety Controls. Oil Not Heavier Than No. ____," and

(a) for gas-oil burners with inputs up to and including 400,000 Btu/h (117.23 kW), the standard designation "ANS Z21.17(+) CSA 2.7(+)-(++) Conversion Burner"
(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

or

(b) for gas-oil burners with inputs over 400,000 Btu/h (117.23 kW), the standard designation "CSA/CGA 3.4."

The Listing Mark of UL on subassemblies intended for remote mounting is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Control Panel Section of Gas-Oil Burner" or "Oil Pump Section of Gas-Oil Burner," or other appropriate product name as shown in the individual Listings.

The Listing Marks cover only the burner and appurtenant subassemblies and do not cover any appliance to which the burner may be applied.

* *

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Oil Burners Certified for Canada (KYXZ7)

USE AND INSTALLATION

This category covers oil burners intended for installation in heating appliances such as boilers, furnaces, heaters, ovens, water heaters, incinerators, etc. These oil burners are provided with primary safety controls as indicated in the Listing Mark, permitting their operation without a competent attendant being present while the burner is firing. These burners are intended to burn standard grade fuel oils as specified in CSA B140.0, "Oil-Burning Equipment: General Requirements," and CAN/CGSB 3.2, "Heating Fuel Oil."

These burners may be a one-piece assembly or may include subassemblies, such as a main electrical control panel, oil or air pump set, etc., intended for remote mounting as indicated in the individual Listings. When a burner includes subassemblies intended for remote mounting, the subassemblies specifically Listed are intended to be employed unless otherwise specified on the burner marking.

These burners are intended to be installed in accordance with the markings on the burner and in the installation instructions provided with the burner, and the following as applicable:

- the current edition of CSA B139, "Installation Code for Oil-Burning Equipment"
- the current edition of CAN/CSA-C22.1, "Canadian Electrical Code, Part I"
- local codes

These burners are marked with information specifying the heaviest grade of fuel oil supply to which the burner is to be connected.

RELATED PRODUCTS

See Domestic Gas Conversion Burners Certified for Canada (KXSB7), Commercial/Industrial Gas Burners Certified for Canada (KYKR7) and Gas-Oil Burners Certified for Canada (KYKR7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda, Amendments, Bulletins, Notices, Technical Information Letters thereto of CSA B140.2.1-1990, "Atomizing-Type Oil Burners."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name "Oil Burner," and the statement "For Use With Integral Primary Safety Controls. Oil Not Heavier Than No. ____."

The Listing Mark for subassemblies intended for remote mounting includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Control Panel Section of Oil Burner," "Oil Pump Section of Oil Burner," "Air Pump Section of Oil Burner," "Air/Oil Pump Section of Oil Burner," or other appropriate product name as shown in the individual Listings.

Oil Burners Certified for Canada (KYXZ7)−*Continued*

The Listing Mark covers only the burner and appurtenant subassemblies and does not cover any appliance to which the burner may be applied.

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BURNERS CERTIFIED FOR CANADA (KXIV7)

Domestic Gas Conversion Burners Certified for Canada (KXSB7)

USE AND INSTALLATION

This category covers domestic gas conversion burners, rated 400,000 Btu/h or less, for installation in heating appliances such as boilers, furnaces, heaters, ovens, water heaters, incinerators, etc.

The burners are intended to be installed and used in accordance with the manufacturer's instructions and CAN/CSA-B149.1, "Natural Gas and Propane Installation Code," and CAN/CSA-B149.2, "Propane Storage and Handling Code."

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.17/CSA 2.7, "Domestic Gas Conversion Burners."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation "ANS Z21.17(+) CSA 2.7(+)-(++) Conversion Burner."

(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

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CENTRAL FURNACES CERTIFIED FOR CANADA (KZLX7)

USE AND INSTALLATION

This category covers central furnaces designed for connection to a warm air supply duct system. These are independent or supplementary furnaces designed to burn gas, oil, gas or oil, solid fuel (such as wood, coal or biomass) or solid fuel in combination with electric, gas-fired, gas- or oil-fired, or oil-fired capability as indicated in the individual product categories.

These central furnaces are intended for installation on the type of floor and with clearances to combustible construction not less than indicated in the marking on the furnace. The minimum clearance markings may be in form of the following symbols and abbreviations to indicate the minimum clearances in centimeters (inches), type of flooring, when a furnace may be installed in an alcove or closet, and the total free area of the required air openings into a closet. The specified clearances are the minimum required to avoid overheating; additional clearances may be needed for accessibility. Unless otherwise indicated, the designated clearances (other than "zero") are based on tests of units with uninsulated sheet metal ducts and plenum attached. Under these conditions, temperatures below established criteria have been measured on a wooden test enclosure, representing combustible construction, spaced at the specified clearance (air) from the unit, ducts and plenum.

These furnaces are not intended for attic or outdoor installation unless so designated in the individual Listings.

Central Furnaces Certified for Canada (KZLX7)−*Continued*

These central furnaces are intended for installation in accordance with current editions of the appropriate standards as required by the province in which the appliance is being installed, such as:

- CAN/CSA-B149.1, "Natural Gas and Propane Installation Code"
- CAN/CSA-B139-2000, "Installation Code for Oil Burning Equipment"
- CAN/CSA-C22.1, "Canadian Electrical Code, Part I"
- CAN/CSA A405-1987, "Design and Construction of Masonry Chimneys and Fireplaces"
- National Building Code of Canada

Horizontal gas-, oil-, and gas-oil-fired furnaces that may be used in garages are also intended to be installed in accordance with the above referenced standards.

Installation Symbols and Abbreviations

Descriptions of symbols and abbreviations applicable to the installation of central furnaces are as follows:

A - – Clearance above top of furnace casing, bonnet or plenum

A_D - – Clearance from horizontal warm-air duct within 0.91 m (3 ft) of furnace

B - – Clearance from front of furnace. Prefix "C" to numeral indicates suitability for closet or alcove installation; prefix "A" indicates suitability for alcove installation only

C_H - – Clearance from single wall metal chimney or vent connector measured horizontally or below connector

C_V - – Clearance from single wall metal chimney or vent connector measured vertically or above connector

D - – Clearance from back of furnace

E_L - – Clearance from left side of furnace

E_R - – Clearance from right side of furnace

E_P - – Clearance from any side of furnace plenum (downflow furnaces have plenum beneath furnace). **E_P** is only specified for furnaces to be equipped with external plenums for connection to duct systems; its omission indicates furnace equipped with integral plenum and if furnace is otherwise installed, clearances specified are not valid

F - – Indicates type of flooring: NC = Noncombustible, C = Combustible; numeral indicates minimum clearance below suspended appliances to combustible material

G - – Total minimum free area, in square mm (square inches), of air openings into a closet

Typical Installation Clearances for Gas-, Gas-Oil-, or Oil-fired Central Furnaces

When a gas-, gas-oil-, or oil-fired central furnace is Listed for typical installation clearances, the Listing may refer to the Form designation. Form designations for typical installation clearances for these types of furnaces installed in rooms are indicated in the table below. Clearances may be indicated in the individual Listings. If a furnace designated as suitable for alcove or closet installation is installed in a room which is large in relation to the size of the furnace, it may be installed at the minimum clearances specified for closets and alcoves or as indicated by the designated optional Form.

Form	Standard Minimum Clearances (cm)									
	A	A_D	B	C_H	C_V	D	E_L	E_R	E_P	F
I	2.54	2.54	60.96	45.72	45.72	15.24	15.24	15.24	2.54*	NC
Ia	2.54	2.54	60.96	45.72	45.72	15.24	15.24	15.24	2.54*	C
IIa	15.24	2.54	60.96	45.72	45.72	15.24	15.24	15.24	2.54	C or 0
IIb	15.24	2.54	60.96	45.72	45.72	15.24	15.24	15.24	2.54	15.24
III	45.72	45.72	121.92	45.72	45.72	45.72	45.72	45.72	45.72	NC
IIIa	45.72	45.72	121.92	45.72	45.72	45.72	45.72	45.72	45.72	C
IIIb	45.72	45.72	121.92	45.72	45.72	45.72	45.72	45.72	45.72	45.72
XI	2.54	2.54	45.72	15.24	15.24	15.24	15.24	15.24	2.54*	NC
XIa	2.54	2.54	45.72	15.24	15.24	15.24	15.24	15.24	2.54*	C
XIIa	15.24	2.54	45.72	15.24	15.24	15.24	15.24	15.24	2.54	C or 0
XIIb	15.24	2.54	45.72	15.24	15.24	15.24	15.24	15.24	2.54	15.24

* For downflow furnaces the minimum clearance is 15.24 cm unless otherwise indicated in the individual Listings

Furnaces Listed for Forms I, Ia, IIa, IIb, III, IIIa and IIIb are low-heat appliances intended for flue connection to suitable chimneys

Furnaces Listed for Forms XI, XIa, XIIa and XIIb are low-heat gas appliances suitable for venting to Type B gas vents

* *

Gas-fired Central Furnaces Certified for Canada (KZZV7)

USE

Gas-fired Central Furnaces Certified for Canada (KZZV7)−*Continued*

This category covers automatically operating, gas-fired central furnaces designed to supply heated air through ducts to spaces remote from or adjacent to the furnace location, and intended for use in residential, commercial, and industrial structures. This includes furnaces for direct vent and outdoor installations with inputs up to and including 400,000 Btu/h (117.23 kW). A cooling unit may be included with these furnaces.

INSTALLATION

These central furnaces are intended to be installed in accordance with the markings on the appliance and in the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, in addition to the appropriate Canadian installation codes and standards, and local codes. CAN/CSA-B149.1, "Natural Gas and Propane Installation Code," specifies vents constructed using plastic piping shall comply with ULC-S636, "Type BH Gas Venting Systems." This requirement includes standard vents and vent fittings, including but not limited to, transitions and termination kits.

The minimum clearance markings may be in the form of symbols and abbreviations as noted under Central Furnaces Certified for Canada (KZLX7). This information is also included in the individual Listings.

These furnaces are marked with information specifying the type(s) of gas supply to which the product is intended to be connected.

These furnaces may be furnished either as a unit assembly with a factory-installed gas burner or in two segments, one the central furnace and the other the gas burner, each factory-built to accommodate the other. If furnished in two segments, the proper assembly of furnace and burner to make a unit assembly is specified on the cross-reference marking described under **UL MARK** below.

Furnaces with inputs up to and including 400,000 Btu/h (117.23 kW) that are suitable for installation indoors only, outdoors only, or either are so indicated by a marking on the product.

RELATED PRODUCTS

See Heating and Cooling Equipment Certified for Canada (LZFE7), Gas-Oil-fired Central Furnaces Certified for Canada (LANT7), Oil-fired Central Furnaces Certified for Canada (LBBR7), Solid Fuel Combination Central Furnaces Certified for Canada (LBEV7) and Solid-fuel-fired Central Furnaces Certified for Canada (LBHZ7).

Products Verified for energy efficiency are covered under Furnaces, Gas and Oil Fired Verified for Energy Efficiency (ZYOD).

ADDITIONAL INFORMATION

For additional information, see Central Furnaces Certified for Canada (KZLX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate gas-fired central furnaces with inputs up to and including 400,000 Btu/h (117.23 kW) is the current edition and effective addenda thereto of ANSI Z21.47/CSA 2.3, "Gas-Fired Central Furnaces."

The basic standard used to investigate gas-fired central furnaces with inputs over 400,000 Btu/h (117.23 kW) is the current edition and effective addenda thereto of CGA 3.2-1976, "Industrial and Commercial Gas-Fired Package Furnaces."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and

1

(a) for furnaces with inputs up to and including 400,000 Btu/h (117.23 kW), the standard designation "ANS Z21.47(+) CSA 2.3(+)-(++) Central Furn"

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

or

(b) for furnaces with inputs over 400,000 Btu/h (117.23 kW), the standard designation "CGA 3.2-1976" and the product name "Central Furnace"

and

2

(a) for gas-fired central furnaces that include the burner as part of the factory-furnished assembly, the statement "Gas-Fired Furnace. For Use With _____ Primary Safety Controls."

or

(b) for gas-fired central furnaces designed for installation of the burner in the field or at another factory, the statement "Gas-Fired Furnace For Use Only With [Company Name] Labeled Gas Burner Model(s) _____, Max Input _____ BTU Per Hour. Refer to Burner Label for Control and Fuel Specifications."

Gas-fired Central Furnaces Certified for Canada (KZZV7)−*Continued*

For this situation, the UL Listing Mark on the furnace covers the furnace only. The burner bears a separate UL Listing Mark as described under Domestic Gas Conversion Burners Certified for Canada (KXSB7) or Commercial/Industrial Gas Burners Certified for Canada (KXWT7).

* *

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Gas-fired Crop-drying Equipment Certified for Canada (LABI7)

USE AND INSTALLATION

This category covers direct-gas-fired equipment with inputs up to and including 10,000,000 Btu/hr (3000 kW) intended for drying farm crops.

The complete crop dryers are intended to be installed in accordance with the installation instructions and markings on the appliance, and are intended to be connected to a gas supply of the type specified on the appliance. The equipment is intended to be installed in accordance with the current edition of CSA B149.1, ''Natural Gas and Propane Installation Code.''

ADDITIONAL INFORMATION

For additional information, see Central Furnaces Certified for Canada (KZLX7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of CSA 3.8, ''Gas-Fired Equipment for Drying Farm Crops.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Crop Dryer.''

* *

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Gas-oil-fired Central Furnaces Certified for Canada (LANT7)

USE AND INSTALLATION

This category covers gas-oil-fired central furnaces, including forced-air furnaces of the downflow, horizontal, and upflow types, for indoor and outdoor installations.

These central furnaces are intended to be installed in accordance with the markings on the appliance and in the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, in addition to the appropriate Canadian installation codes and standards, and local codes.

The minimum clearance markings may be in the form of symbols and abbreviations as noted under Central Furnaces Certified for Canada (KZLX7). This information is also included in the individual Listings.

These furnaces may be furnished either as a unit assembly with a factory-installed gas-oil burner or in two segments, one the central furnace and the other the gas-oil burner, each factory built to accommodate the other. If furnished in two segments, the proper assembly of furnace and burner to make a unit assembly is specified on the cross-reference marking described under **UL MARK** below.

Furnaces suitable for indoor or outdoor installation or for outdoor installation only are so indicated by a marking on the product. Also, furnaces with gas-fired inputs up to and including 400,000 Btu/h (117.23 kW) that are suitable for installation indoors only are so indicated by a marking on the product.

RELATED PRODUCTS

See Heating and Cooling Equipment Certified for Canada (LZFE7), Gas-fired Central Furnaces Certified for Canada (KZZV7), Oil-fired Central Furnaces Certified for Canada (LBBR7), Solid Fuel Combination Central Furnaces Certified for Canada (LBEV7) and Solid-fuel-fired Central Furnaces Certified for Canada (LBHZ7).

Gas-oil-fired Central Furnaces Certified for Canada (LANT7)−*Continued*

Products Verified for energy efficiency are covered under Furnaces, Gas and Oil Fired Verified for Energy Efficiency (ZYOD).

ADDITIONAL INFORMATION

For additional information, see Central Furnaces Certified for Canada (KZLX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate gas-oil-fired central furnaces with gas-fired inputs up to and including 400,000 Btu/h (117.23 kW) are the current edition and effective addenda thereto of ANSI Z21.47/CSA 2.3, ''Gas-Fired Central Furnaces,'' and the current edition and effective addenda, Amendments, Bulletins, Notices, Technical Information Letters thereto of CSA B140.4 (1974), ''Oil-Fired Warm Air Furnaces.''

The basic standard used to investigate gas-oil-fired central furnaces with gas-fired inputs over 400,000 Btu/h (117.23 kW) are the current edition and effective addenda thereto of CGA 3.2 (1976), ''Industrial and Commercial Gas-Fired Package Furnaces,'' and the current edition and effective addenda, Amendments, Bulletins, Notices, Technical Information Letters thereto of CSA B140.4 (1974).

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and

1

(a) for furnaces with inputs up to and including 400,000 Btu/h (117.23 kW), the standard designation ''ANS Z21.47(+) CSA 2.3(+)-(++) Central Furn''
(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

or

(b) for furnaces with inputs over 400,000 Btu/h (117.23 kW), the standard designation ''CGA 3.2-1976'' and the product name ''Central Furnace''

and

2

(a) for gas-oil-fired central furnaces that include the burner as part of the factory-furnished assembly, the product name and statement ''Gas-Oil-fired Furnace. For Use With Integral Primary Safety Controls. Oil Not Heavier Than No. _____.''

or

(b) for gas-oil-fired central furnaces designed for installation of the burner in the field or at another factory, the product name and statement ''Gas-Oil-fired Furnace. For Use Only With [Company Name] Listed Gas-Oil Burner Model(s) _____. Max Input – Oil _____ Gals Per Hour, Gas _____ BTU Per Hour. Refer to Burner Label for Control and Fuel Specifications.''
For this situation, the UL Listing Mark on the furnace covers the furnace only. The burner bears a separate UL Listing Mark as described under Gas-Oil Burners Certified for Canada (KYKR7).

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Oil-fired Central Furnaces Certified for Canada (LBBR7)

USE AND INSTALLATION

This category covers oil-fired central furnaces, including forced-air furnaces of the downflow, horizontal and upflow types, for indoor and outdoor installations.

These central furnaces are intended to be installed in accordance with the markings on the appliance and in the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, in addition to the appropriate Canadian installation codes and standards, and local codes.

The minimum clearance markings may be in the form of symbols and abbreviations as noted under Central Furnaces Certified for Canada (KZLX7). This information is also included in the individual Listings.

These furnaces may be furnished either as a unit assembly with a factory-installed oil burner or in two segments, one the central furnace and the other the oil burner, each factory built to accommodate the other.

Oil-fired Central Furnaces Certified for Canada (LBBR7)−*Continued*

If furnished in two segments, the proper assembly of furnace and burner to make a unit assembly is specified on the cross-reference marking described under **UL MARK** below.

Furnaces suitable for indoor or outdoor installation or for outdoor installation only are so indicated by a marking on the product.

RELATED PRODUCTS

See Heating and Cooling Equipment Certified for Canada (LZFE7), Gas-Oil-fired Central Furnaces Certified for Canada (LANT7), Gas-fired Central Furnaces Certified for Canada (KZZV7), Solid Fuel Combination Central Furnaces Certified for Canada (LBEV7) and Solid-fuel-fired Central Furnaces Certified for Canada (LBHZ7).

Products Verified for energy efficiency are covered under Furnaces, Gas and Oil Fired Verified for Energy Efficiency (ZYOD).

ADDITIONAL INFORMATION

For additional information, see Central Furnaces Certified for Canada (KZLX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda, Amendments, Bulletins, Notices, Technical Information Letters thereto of CSA B140.4-1974, ''Oil-Fired Warm Air Furnaces.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and

(a) for oil-fired central furnaces that include the burner as part of the factory-furnished assembly, the product name and statement ''Oil-fired Furnace. For Use With Integral Primary Safety Controls. Oil Not Heavier Than No. _____.''

or

(b) for oil-fired central furnaces designed for installation of the burner in the field or at another factory, the product name and statement ''Furnace. For Use Only With [Company Name] Listed Oil Burner Model(s) _____. Max Input _____ Gals Per Hour. Refer to Burner Label for Control and Fuel Specifications.''

For this situation, the Listing Mark on the furnace covers the furnace only. The burner bears a separate Listing Mark as described under Oil Burners Certified for Canada (KYXZ7).

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Oil-fired Crop-drying Equipment Certified for Canada (LBDG7)

USE AND INSTALLATION

This category covers indirect-fired crop-drying equipment only. These appliances may be either complete units or retrofit units.

Retrofit crop-dryer units are intended to be installed only in the crop-dryer models identified in the installation instructions. The complete crop dryers are intended to be installed in accordance with the installation instructions and markings on the appliance, and are intended to be connected to an oil supply of the type specified on the appliance. The equipment is intended to be installed in accordance with the current edition of CSA B139, ''Installation Code for Oil-Burning Equipment.''

ADDITIONAL INFORMATION

For additional information, see Central Furnaces Certified for Canada (KZLX7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

Products in this category comply with the requirements outlined in Technical Information Letter R-12, dated August 22, 2001.

The basic standards used to investigate products in this category are the current edition and effective addenda thereto of CSA B140.4, ''Oil-Fired Warm Air Furnaces,'' and CSA B140.0, ''Oil-Burning Equipment: General Requirements.''

The following sections of CSA B140.4 are waived: 4.16.3 Simulated Life Test, 7.3.1.1 Rated Output Capacity and 7.3.1.2 Maximum Flue Gas Loss. The following section of CSA B140.4 is revised: 7.3.1.1 Air Temperature Rise - The air temperature rise shall be as recommended by the manufacturer when the appliance is tested in accordance with the procedures of clause 7.3.2.

UL MARK

Oil-fired Crop-drying Equipment Certified for Canada (LBDG7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Retrofit Crop-dryer Unit'' or ''Crop Dryer.''

****

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Solid-fuel-combination Central Furnaces Certified for Canada (LBEV7)

USE AND INSTALLATION

This category covers combination electric and solid-fuel-fired, gas- and solid-fuel-fired, or oil- and solid-fuel-fired central furnaces designed for connection to a supply and return air duct system. The installation should be accomplished by a qualified agency (one who is engaged in, and is responsible for, or is thoroughly familiar with the installation and operation of solid-fuel-burning heating appliances, who is experienced in such work, familiar with all precautions required, and has complied with all the requirements of the Authority Having Jurisdiction). The type of solid fuel (wood and/or coal) and the combination fuel (gas or oil) which the appliance is designed to burn is indicated in the individual Listings.

The combination gas- and solid-fuel-fired central furnaces covered under this category are provided with a manual reset device that will shut off gas to the main burner in the event of sustained flue gas spillage.

The installation should be in strict accordance with the manufacturer's installation instructions furnished with the solid-fuel-combination central furnace. The chimney connectors must be connected to a chimney suitable for use with residential type and building-heating appliances that burn solid fuel.

When the furnace is permitted to be installed on a combustible floor, the floor beneath the furnace is to be covered over an area extending at least 450 mm (18 in.) beyond the fuel charging area and 200 mm (8 in.) beyond other sides with brick, concrete, hollow metal, stone, tile or other appropriate material as required by the current edition of CAN/CSA-B365, ''Installation Code for Solid-Fuel-Burning Appliances and Equipment.''

ADDITIONAL INFORMATION

For additional information, see Central Furnaces Certified for Canada (KZLX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are the current editions of CAN/CSA-B366.1, ''Solid-Fuel-Fired Central Heating Appliances,'' CAN/CSA-C22.2 No. 23.1, ''Electric Furnaces in Combination with Solid Fuel Fired Furnaces,'' and ANSI Z21.47/CSA 2.3, ''Gas-Fired Central Furnaces.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names and information as appropriate:

(A) ''Electric and Solid Fuel-fired Central Furnace.''

(B) ''Gas-Solid Fuel-fired Central Furnace. For Use With Integral Primary Safety Controls.''

(C) ''Gas-Solid Fuel-fired Central Furnace. For Use Only With [Company Name] Listed Gas Burner Model(s) ____. Max Input ____ BTU Per Hour. Refer to Burner Marking for Control and Fuel Specifications.''

(D) ''Oil-Solid Fuel-fired Central Furnace. For Use With Integral Primary Safety Controls. Oil Not Heavier Than No. ____. ''

(E) ''Oil-Solid Fuel-fired Central Furnace. For Use Only With [Company Name] Listed Oil Burner Model(s) ____. Max Input ____ Gal Per Hour. Refer to Burner Marking for Control and Fuel Specifications.''

(F) ''Gas- or Oil- and Solid Fuel-fired Central Furnace. For Use Only With Listed [Company Name and Model] Gas Burner or [Company Name and Model] Oil Burner. Max Input Firing Gas ____ BTU Per Hour, Firing Oil _____ Gal Per Hour. Refer to Burner Marking for Control and Fuel Specifications.''

A combination-solid-fuel central furnace that includes an electric heater(s) bears a Listing Mark with the product name similar to (A).

Solid-fuel-combination Central Furnaces Certified for Canada (LBEV7)−*Continued*

A combination-solid-fuel central furnace that includes the gas or oil burner as part of the factory-furnished assembly bears a Listing Mark with the product name and information similar to (A) or (C), as applicable.

A combination-solid-fuel central furnace designed for installation of only a gas burner or only an oil burner in the field or at another factory bears a Listing Mark with the product name and information similar to (B) or (D), as applicable.

A combination-solid-fuel central furnace designed for installation of either a gas or oil burner in the field or at another factory bears a Listing Mark with the product name and information similar to (E).

The Listing Marks (B), (D) and (E) cover the furnace only. The burner bears a separate Listing Mark as described for gas burners (see KXWT7) or oil burners (see KYXZ7). The proper assembly of a furnace and burner to make up a unit assembly is as specified in the furnace Listings.

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Solid-fuel-fired Central Furnaces Certified for Canada (LBHZ7)

USE AND INSTALLATION

This category covers solid-fuel-burning air heaters designed for connection to a supply-and-return air duct system. Solid fuel is considered to be wood, coal or shelled corn fuels. The type of solid fuel which the appliance is designed to burn is indicated in the individual certifications.

The installation is intended to be accomplished by a qualified agency (one who is engaged in, and is responsible for, or is thoroughly familiar with the installation and operation of solid-fuel-burning heating appliances, who is experienced in such work, familiar with all precautions required, and has complied with all the requirements of the Authority Having Jurisdiction).

The installation is intended to be in strict accordance with the manufacturer's installation instructions furnished with the solid-fuel-fired central furnace. The chimney connector should be connected to a chimney suitable for use with residential type and building heating appliances that burn solid fuel.

When the furnace is permitted to be installed on a combustible floor, the floor beneath the furnace should be covered over an area extending at least 450 mm (18 in.) beyond the fuel-charging area, and 200 mm (8 in.) beyond other sides with brick, concrete, hollow metal, stone, tile or other appropriate material as required by CAN/CSA-B365 (1991), ''Installation Code for Solid-Fuel-Burning Appliances and Equipment.''

RELATED PRODUCTS

See Solid-fuel Combination Central Furnaces Certified for Canada (LBEV7).

ADDITIONAL INFORMATION

For additional information, see Central Furnaces Certified for Canada (KZLX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-B366.1 (1991), ''Solid-Fuel-Fired Central Heating Appliances.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Solid Fuel-fired Central Furnace.''

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COOKING APPLIANCES, GAS FIRED, HOUSEHOLD CERTIFIED FOR CANADA (LCCZ7)

USE

This category covers cooking appliances intended for household use, using only gas or a combination of gas and electric for cooking. These include ranges, ovens, broilers, griddles, counter-mounted cooking units, and the like, as well as combinations of these in one appliance as identified in the individual certifications. These appliances are suitable for use in manufactured (mobile) homes or recreational park trailers.

This category does not cover compact cooking gas appliances intended for use in recreational vehicles (including recreational park trailers) as defined in the current edition and effective addenda thereto of ANSI Z21.1, ''Household Cooking Gas Appliances.''

This category does not cover cooking gas appliances intended for use in a marine environment such as aboard boats or ships.

Cooking Appliances, Gas Fired, Household Certified for Canada (LCCZ7)−*Continued*

INSTALLATION

Gas-fired household cooking appliances are intended to be installed in accordance with the markings on the appliance and in the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, spacings between individual appliances, proper vent installation, the specific type of gas vent to be used, and clearances from a vent, and the following as applicable:

- the current edition of CSA B149.1, ''Natural Gas and Propane Installation Code,''
- the current edition of CAN/CSA C22.1, ''Canadian Electrical Code, Part I'' (CEC),
- the current edition of CAN/CSA-Z240 MH, ''Mobile Homes,''
- the current edition of ANSI A119.5, ''Standard for Recreational Park Trailers,''
- local codes.

These appliances may be floor-supported, built-in, drop-in, or slide-in units.

These appliances are marked with information specifying the type(s) of gas supply to which the product is intended to be connected.

Appliances with electrical equipment have a current limitation of 20 A. Appliances using only gas for cooking are designed for connection to a nominal 120 V electrical supply. Appliances using gas and electric for cooking are designed for connection to either a nominal 120 V, 240 V or less, or 120/240 V or less (four-wire) electrical supply.

The flexible metallic conduit and high temperature insulated leads provided with some appliances are evaluated as a component part of the appliance. Unless a conduit fitting or outlet box is installed at the factory, tape or other means is provided at the end of the conduit to protect the conductors during shipment. This protection is not intended to take the place of a conduit bushing or fitting which is required by the CEC.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by the use of these appliances has been investigated.

The thermal efficiency of these appliances has not been investigated (see Products Verified for Energy Efficiency in Accordance with Canadian Regulations or Standards [ZYAA]).

RELATED PRODUCTS

For household-type, all-electric, freestanding, cord-connected ranges and permanently connected built-in ranges, ovens and counter-mounted cooking units, or any combination of the above, having a rating not exceeding 250 V and 21 kW, see Heaters, Ranges, Household Electric Certified for Canada (KRMX7).

For cooking equipment intended for commercial indoor use, see Commercial Cooking Appliances Certified for Canada (KNGT7).

For custom-built commercial food serving and/or cooking equipment that includes various combinations of electric cooking and food warming appliances, see Custom-built Food Service Equipment Certified for Canada (KNNS7).

For gas-fired food service equipment intended for commercial use, see Gas-fired Food Service Equipment Certified for Canada (LGQX7).

For microwave cooking appliances that have been investigated and found suitable for built-in installation, side-by-side mounting, stacking or field installation over electric or gas appliances, see Microwave Cooking Appliances Certified for Canada (KQSQ7).

For fans and accessories intended for use over residential gas and electric cooking equipment, see Fans, Electric Certified for Canada (GPWV7).

For electric or gas cooking equipment-refrigerator combinations, see Kitchen Units, Refrigerated Certified for Canada (SJPT7).

For equipment verified for energy efficiency in accordance with Canadian regulations or standards, see Products Verified for Energy Efficiency in Accordance with Canadian Regulations or Standards (ZYAA).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

Cooking Appliances, Gas Fired, Household Certified for Canada (LCCZ7)−*Continued*

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.1, ''Household Cooking Gas Appliances,'' supplemented by CGA Interim Requirement 58 (IR 58). Gas-fired cooking appliances that also use electrical energy for cooking are also investigated to UL 858, ''Household Electric Ranges,'' per a reference in ANSI Z21.1.

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designations ''ANS Z21.1(+)-(++) Household Cooking Appl.'' and ''CGA IR 58, 1995 Household Cooking Appl.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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COOKING APPLIANCES, GAS FIRED, OUTDOOR CERTIFIED FOR CANADA (LCGL7)

USE AND INSTALLATION

This category covers gas-fired cooking appliances intended for outdoor use only. These include barbecues, broilers, grills, top and surface units (side burners), or any combination thereof, as identified in the individual certifications. These appliances may be either portable or stationary, and are provided with a means of support by the manufacturer, as part of the appliance.

This category also covers outdoor cooking gas appliances intended for mounting to the exterior of a recreational vehicle for connection to the recreational vehicle's low-pressure LP-gas supply system. It does not cover outdoor cooking gas appliances intended for installation in the interior living space of a recreational vehicle.

These appliances are not intended for installation in or on boats.

Outdoor cooking gas appliances are intended to be installed in accordance with the markings on the appliance pertaining to clearance and types of surfaces. Appliances suitable for built-in installation or side-by-side mounting are indicated in the installation instructions. These appliances are intended for connection to a fixed fuel piping system or a self-contained liquefied petroleum gas supply system. Appliances intended for connection to a self-contained liquefied petroleum gas supply system with an integral cylinder mounting means are designed to accommodate a single cylinder, vertically mounted, with a maximum size of:

20 lb (9.1 kg) of fuel for outdoor cooking gas appliances with input ratings less than 80,000 Btu/h

30 lb (13.6 kg) of fuel for outdoor cooking gas appliances with input ratings greater than or equal to 80,000 Btu/h

Applicable codes and Authorities Having Jurisdiction should be consulted as to the requirements for these appliances with respect to installation and connection to the fuel supply.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by the use of these appliances has been investigated.

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.58/CSA 1.6, ''Outdoor Cooking Gas Appliances.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.58(+) CSA 1.6(+)-(++) Outdoor Cooking Gas Appliances.''

(+) Suffix letter of latest addendum if applicable

Cooking Appliances, Gas Fired, Outdoor Certified for Canada (LCGL7)−*Continued*

(++) Issue year of latest addendum or standard

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COOKING APPLIANCES, GAS FIRED, OUTDOOR, SPECIALTY CERTIFIED FOR CANADA (LCGQ7)

USE AND INSTALLATION

This category covers cooking specialty gas appliances for outdoor use only. These include smokers, table-top grills, or any combination thereof, as identified in the individual certifications. These appliances may be either portable or stationary, and are provided with a means of support by the manufacturer, as part of the appliance.

Outdoor cooking specialty gas appliances are to be installed in accordance with the marking on the appliance pertaining to clearance and types of surfaces. Appliances suitable for built-in installation or side-by-side mounting are indicated in the installation instructions. These appliances are intended for connection to a fixed fuel piping system or a self-contained liquefied petroleum gas supply system. Appliances for connection to a self-contained system incorporate means for attachment of a single cylinder with a maximum size of 20 lbs (9.1 kg) of fuel. Applicable codes and Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to installation and connection to the fuel supply.

These products are not intended for installation in or on recreational vehicles and/or boats.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by the use of these appliances has been investigated.

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.89/CSA 1.18, ''Outdoor Cooking Specialty Gas Appliances.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.89(+) CSA 1.18(+)-(++) Outdoor Cooking Specialty Gas Appliance.''

(+) Suffix letter of latest addendum if applicable

(++) Last two digits of issue year of latest addendum or standard

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CAMPING EQUIPMENT, GAS FIRED, PORTABLE TYPE CERTIFIED FOR CANADA (LCHF7)

USE AND INSTALLATION

This category covers portable type gas-fired camp heaters, lights and stoves intended solely for use outdoors as camping equipment, as noted in the individual certifications. These products are intended for use with propane, butane, liquefied petroleum gas and any combination thereof as marked on the appliance. Camp heaters and lights have input ratings of 12,000 Btu/h (3.5 kW) or less per burner.

These appliances are not intended for indoor use. These products are not intended for installation in or on recreational vehicles and/or boats.

These appliances are intended to be used in accordance with the marking on the appliance pertaining to clearance to combustible materials. These appliances are intended for connection to self-contained disposable

Camping Equipment, Gas Fired, Portable Type Certified for Canada (LCHF7)−*Continued*

fuel cylinders, self-contained refillable fuel cylinders, or to remote fuel cylinders. These appliances are not intended for connection to a fixed fuel piping system.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by the use of these appliances has been investigated.

RELATED PRODUCTS

See Illuminating Appliances, Gas Fired, Indoor/Outdoor Certified for Canada (NCOG7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.63/CSA 11.3, "Portable Type Gas Camp Heaters," ANSI Z21.72/CSA 11.2, "Portable Type Gas Camp Stoves," or ANSI Z21.73/CSA 11.1, "Portable Type Gas Camp Lights."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and one of the following product names and standard designations:

ANS Z21.63(+) CSA 11.3(+)-(++) Camp Heater
ANS Z21.72(+) CSA 11.2(+)-(++) Camp Stove
ANS Z21.73(+) CSA 11.1(+)-(++) Camp Light
(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

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COOKING APPLIANCES, WOOD FIRED CERTIFIED FOR CANADA (LCJX7)

USE AND INSTALLATION

This category covers wood-fired cooking appliances, including broilers, ranges, rotisseries, ovens, and the like, as identified in the individual Listings, and intended for use in commercial establishments such as restaurants or for outdoor residential use. These appliances are intended to burn solid wood only, including particulate wood products. Some equipment may be provided with door assemblies, floor protectors and wall shields, adjustable flue gas dampers, or other optional features as specified in the manufacturer's installation and operating instructions.

This equipment is intended to be installed in accordance with appropriate installation standards, such as the current editions of:

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- CAN/CSA-B365-2001, "Installation Code for Solid-Fuel-Burning Appliances and Equipment"
- CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC)
- "National Building Code of Canada"
- Local codes

Installation is intended to be accomplished by a qualified agency – one who is engaged in and is responsible for (or is thoroughly familiar with) the installation and operation of solid fuel-burning heating and/or cooking appliances and who is experienced in such work, familiar with all precautions required, and has complied with all the requirements of the Authority Having Jurisdiction.

Installation is intended to be in strict accordance with the markings on the appliance and the manufacturer's installation instructions furnished with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation. Equipment suitable for built-in installation, side-by-side mounting, or stacking is indicated in the installation instructions. Some equipment is intended to be placed on noncombustible floors, or on combustible floors covered with an insulating, noncombustible floor protector as specified in the manufacturer's installation instructions and CAN/CSA-B365-2001, as applicable.

All equipment, but especially equipment that may emit grease laden vapors, is intended to be provided with an exhaust ventilating system in accordance with ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations." See Exhaust Hoods with Exhaust Dampers Certified for Canada (YXZR7), Exhaust Hoods Without Exhaust Dampers Certified for Canada (YYCW7) or Grease Ducts for Restaurant Cooking Appliances Certified for Canada (YYGQ7). Exhaust hood assemblies covered under these categories are intended to be installed in accordance with the manufacturer's installation instructions, and ANSI/NFPA 96 and the CEC, as applicable. All exhaust hoods are marked relative to minimum exhaust airflow and maximum supply airflow directed into the hood and/or out the bottom (if provided). Airflow rates are established under draft-free laboratory conditions. Greater exhaust and/or lesser supply airflow rates may be required for each specific installation to obtain complete vapor and smoke removal.

Cooking Appliances, Wood Fired Certified for Canada (LCJX7)−*Continued*

UNEVALUATED FACTORS

The structural and sanitation properties of the appliance, the toxicity of the products of combustion, the physiological effects on persons consuming food products prepared or served by use of these appliances, the structures in which the appliance may be installed, and the toxicity of coatings have not been investigated.

RELATED PRODUCTS

See Gas-Wood-fired Food Service Equipment Certified for Canada (LGRC7), Gas-fired Food Service Equipment Certified for Canada (LGQX7) and Heaters, Ranges, Household, Electric Certified for Canada (KRMX7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are the current editions of ULC-S627-2000, "Space Heaters for Use with Solid Fuels," and ULC/ORD-C1482-1990, "Space Heaters for Use with Particulate Solid Fuels."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name, such as "Wood-fired Oven," or other appropriate product name as shown in the individual Listings, and for appliances that require additional parts to complete the installation, the statement "For Use With [Company Name] Listed Wood-fired Equipment Parts." (+)

(+) Each additional part includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wood-fired Equipment Part."

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DIRECT-FIRED INDUSTRIAL HEATERS CERTIFIED FOR CANADA (LCQV7)

USE AND INSTALLATION

This category covers direct-fired industrial heaters intended for use exterior to buildings or in well-ventilated commercial or industrial occupancies where unvented open-flame combustion equipment is permitted. All air to the heater is intended to be ducted directly from outdoors and the products of combustion generated by the heater are released into the air stream being heated.

These heaters are intended to be permanently installed in accordance with the installation instructions and markings on the appliance, the current edition of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and local codes.

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Gas-burning Direct-fired Industrial Heaters Certified for Canada (LDET7)

USE

This category covers gas-burning, direct-fired heaters intended for industrial or commercial use and whose purpose is to offset building heat loss by heating only incoming outdoor air. These heaters are complete packaged heaters with integral air-moving components and are intended to discharge air at a temperature of 160°F (71°C) or less. These heaters are not intended for use in any area containing sleeping quarters.

INSTALLATION

Gas-burning, direct-fired heaters are intended to be installed in accordance with the installation instructions and markings on the heater, including markings and instructions pertaining to clearances and types of adjacent surfaces, and the current edition of CSA B149.1, ''Natural Gas and Propane Installation Code.''

These heaters are marked with information specifying the type(s) of gas supply to which the product is to be connected. Heaters suitable for installation indoors only, outdoors only, or either are so indicated by a marking on the product.

PRODUCT MARKINGS

These heaters are marked ''Direct Industrial Air Heater'' and ''For Industrial/Commercial Use.'' These heaters are also marked to indicate the minimum ambient air temperature, maximum discharge air temperature, and maximum temperature rise for which the heater has been certified.

RELATED PRODUCTS

See Gas-fired Construction Heaters Certified for Canada (LGNH7).

ADDITIONAL INFORMATION

For additional information, see Direct-fired Industrial Heaters Certified for Canada (LCQV7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z83.4/CSA 3.7, ''Non-Recirculating Direct Gas-Fired Industrial Air Heaters.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z83.4(+) CSA 3.7(+)-(++) Non-Recirculating Direct Industrial Air Htr.''

(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

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GAS-FIRED DUCT FURNACES CERTIFIED FOR CANADA (LDUT7)

USE AND INSTALLATION

This category covers gas-fired duct furnaces with inputs up to and including 10,000,000 Btu/h (2931 kW) intended for commercial or industrial use. These furnaces are intended for use with natural gas with inlet gas pressures up to and including 34.5 kPa (5.0 psi) and/or liquefied petroleum (LP) gas.

These furnaces are intended to be installed in accordance with the markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, as well as the current editions of the following, as applicable:

- CSA B149.1, ''National Gas and Propane Installation Code''
- ''International Fuel Gas Code''
- ANSI/NFPA 211, ''Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances''
- ''International Mechanical Code''
- Local codes

The minimum clearances are included in the individual Listings.

These furnaces are marked with information specifying the type(s) of gas supply and/or grade of fuel oil supply to which it is intended to be connected. Furnaces suitable for installation outdoors are so indicated by a marking on the product.

ADDITIONAL INFORMATION

Gas-fired Duct Furnaces Certified for Canada (LDUT7)−*Continued*

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current editions and effective addenda thereto of ANSI Z83.8/CSA 2.6, ''Gas Unit Heaters, Gas Packaged Heaters, Gas Utility Heaters and Gas-Fired Duct Furnaces.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the designation ''ANS Z83.8(+) CSA 2.6(+)-(++) Duct Furnace for Industrial/Commercial Use.''

(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

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DRYERS CERTIFIED FOR CANADA (LEFZ7)

USE AND INSTALLATION

This category covers dryers intended for use only in removing excess water or moisture from the product being dried. The normal use of a dryer creates a large volume of humid air, which is to be exhausted to the outside in accordance with the manufacturer's instructions. Unless so exhausted, this moisture could affect electrical wiring or other electrical devices in the vicinity.

These dryers are intended to be installed in accordance with the installation instructions and markings on the appliance, and the current edition of CSA B149.1, ''Natural Gas and Propane Installation Code,'' the current edition of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and local codes, as applicable.

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Gas-fired Clothes Dryers, Type 1 Certified for Canada (LETA7)

USE

This category covers gas-fired Type 1 clothes dryers, which are appliances used to dry wet laundry by means of heat derived from the combustion of fuel gases. These appliances are intended for use only with water washed fabrics. Type 1 clothes dryers can be household or commercial, classified as follows:

Type 1 Household:

1. Intended for use in residential homes.
2. Gas supply pressure not exceeding 3.5 kPa.

Type 1 Commercial:

1. Intended for intermittent duty in common laundry facilities of multi-family dwellings, with or without payment collection means.
2. May include installations requiring the appliance to be fastened to the building structure.
3. Gas supply pressure not exceeding 3.5 kPa.

Type 1 clothes dryers may be for use with natural gas, manufactured gas, mixed gas, propane gas, liquefied petroleum gases, or LP gas-air mixture as marked on the dryer rating plate, and/or for mobile home installation as marked on the dryer rating plate.

These appliances are provided with means for disposal of moisture and lint.

INSTALLATION

Type 1 clothes dryers are intended to be installed in accordance with the marking on the dryer and in the installation instructions provided with the dryer, including markings and instructions pertaining to clearances, closet installation (if applicable), and types of adjacent surfaces. Type 1 household clothes dryers are provided with installation, operating and maintenance instructions. Type 1 commercial clothes dryers are provided with installation and maintenance instructions.

Gas-fired Clothes Dryers, Type 1 Certified for Canada (LETA7)−*Continued*

These appliances may be connected to an existing permanent duct system provided as part of the building structure.

Clothes dryers suitable for installation in a mobile home are intended to be installed in accordance with the current edition of CAN/CSA-Z240 MH, "Mobile Homes."

FACTORS NOT INVESTIGATED

Unless specifically indicated by a marking on the machine, the burglary and theft protection features of payment-operated machines have not been investigated.

RELATED PRODUCTS

For electric clothes dryers, see Clothes Dryers Certified for Canada (KMEX7).

ADDITIONAL INFORMATION

For additional information, see Dryers Certified for Canada (LEFZ7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.5.1/CSA 7.1, "Gas Clothes Dryers, Volume I – Type 1 Clothes Dryers."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation "ANS Z21.5.1(+) CSA 7.1(+)-(++) Clothes Dryers, Vol. I."

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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Gas-fired Clothes Dryers, Type 2 Certified for Canada (LETX7)

USE

This category covers gas-fired Type 2 clothes dryers, which are appliances used to dry wet laundry by means of heat derived from the combustion of fuel gases. These appliances are intended for use only with water washed fabrics. Type 2 clothes dryers are classified as follows:

1. Intended for continuous duty in multiple family and commercial applications, with or without a payment collection means.
2. May include installations requiring the appliance to be fastened to the building structure.
3. Gas supply pressure not exceeding 3.5 kPa.

Type 2 clothes dryers may be for use with natural gas, manufactured gas, mixed gas, propane gas, liquefied petroleum gases, or LP gas-air mixture as marked on the dryer rating plate.

These appliances are provided with means for disposal of moisture and lint.

INSTALLATION

Type 2 clothes dryers are intended to be installed in accordance with the marking on the dryer and in the installation instructions provided with the dryer, including markings and instructions pertaining to clearances and types of adjacent surfaces. Type 2 clothes dryers are provided with instructions for field assembly, installation, use, operation, and operator maintenance of the dryer.

FACTORS NOT INVESTIGATED

Unless specifically indicated by a marking on the machine, the burglary and theft protection features of payment-operated machines have not been investigated.

RELATED PRODUCTS

For electric clothes dryers, see Clothes Dryers Certified for Canada (KMEX7).

ADDITIONAL INFORMATION

For additional information, see Dryers Certified for Canada (LEFZ7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.5.2/CSA 7.2, "Gas Clothes Dryers, Volume II – Type 2 Clothes Dryers."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and

Gas-fired Clothes Dryers, Type 2 Certified for Canada (LETX7)−*Continued*

Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation "ANS Z21.5.2(+) CSA 7.2(+)-(++) Clothes Dryers, Vol. II."

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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CONSTRUCTION HEATERS CERTIFIED FOR CANADA (LGMM7)

Gas-fired Construction Heaters Certified for Canada (LGNH7)

USE AND INSTALLATION

This category covers gas-fired construction heaters of the direct-fired type with rated inputs up to and including 10,000,000 Btu/h (2930 kW). These appliances are primarily intended for temporary use in heating buildings or structures under construction, alteration or repair.

Gas-fired construction heaters are intended to be installed in accordance with the marking on the appliance pertaining to clearance and types of surfaces. These appliances are self-contained heaters with or without integral means for air circulation and not intended for connection to other than that provided by the manufacturer. They may also be forced draft, fan-equipped heaters provided with duct systems supplied by the manufacturer.

Applicable codes and Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to its installation and use.

RELATED PRODUCTS

See Gas-burning Direct-fired Industrial Heaters Certified for Canada (LDET7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z83.7/CSA 2.14, "Gas-Fired Construction Heaters."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation "ANS Z83.7 CSA 2.14(+)-(++) Construction Heater."

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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GAS-FIRED FOOD SERVICE EQUIPMENT CERTIFIED FOR CANADA (LGQX7)

USE AND INSTALLATION

This category covers gas-fired food service equipment intended for commercial use, including unit broilers, baking and roasting ovens, coffee brewers, food warmers, deep-fat fryers, griddles, ranges, steam generators, and the like, as identified in the individual certifications.

Gas-fired food service equipment is intended to be installed in accordance with markings on the equipment pertaining to clearances and types of surfaces. Equipment suitable for built-in installation, side-by-side mounting or stacking is indicated in the installation instructions. Equipment provided with a flue collar is intended to be vent connected. These appliances are intended to be connected to a gas supply of the type speci-

Gas-fired Food Service Equipment Certified for Canada (LGQX7)−*Continued*

fied on the appliance. Equipment is intended to be installed in accordance with the current editions of ANSI Z223.1/NFPA 54, ''National Fuel Gas Code,'' and CAN/CGA-B149, ''Natural Gas and Propane Installation Code.''

Commercial cooking equipment that may emit grease-laden vapors is intended to be provided with exhaust ventilating systems in accordance with ANSI/NFPA 96, ''Ventilation Control and Fire Protection of Commercial Cooking Operations.''

Food service equipment of certain types is designed for permanent connection to water supply and sewer lines at the point of installation. Applicable codes and Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

PRODUCT MARKINGS

Equipment or section(s) of the equipment suitable for outdoor installation are so marked. Units not so marked are intended for indoor use only.

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared or served by use of this equipment has been investigated.

RELATED PRODUCTS

For electric cooking appliances, see Commercial Cooking Appliances Certified for Canada (KNGT7).

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z83.11/CSA 1.8, ''Gas Food Service Equipment.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z83.11(+) CSA 1.8(+)-(++) Food Service Equip.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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GAS-WOOD-FIRED FOOD SERVICE EQUIPMENT CERTIFIED FOR CANADA (LGRC7)

USE

This category covers combination gas-wood-fired food service equipment intended for commercial use, including broilers, ranges, rotisseries, ovens, and the like, as identified in the individual certifications. This equipment is intended to burn solid wood, including particulate wood products, as well as gas. Some equipment may be provided with door assemblies, floor protectors and wall shields, adjustable flue gas dampers, or other optional features as specified in the manufacturer's installation and operating instructions.

INSTALLATION

This equipment is intended to be installed in accordance with appropriate installation standards, such as the current editions of:

- CAN/CSA-B149.1, ''Natural Gas and Propane Installation Code''
- CAN/CSA C22.1, ''Canadian Electrical Code, Part I'' (CEC)
- CAN/CSA-A405-M87, ''Design and Construction of Masonry Chimneys and Fireplaces''
- CAN/CSA-B365-01, ''Installation Code for Solid-Fuel-Burning Appliances and Equipment''
- ''National Building Code of Canada''
- Local codes

Installation is intended to be accomplished by a qualified agency – one who is engaged in and is responsible for (or is thoroughly familiar with) the installation and operation of solid-fuel-burning heating and/or cooking appliances and who is experienced in such work, familiar with all precautions required, and has complied with all the requirements of the Authority Having Jurisdiction.

Gas-Wood-fired Food Service Equipment Certified for Canada (LGRC7)−*Continued*

Installation is intended to be in strict accordance with the markings on the equipment and the manufacturer's installation instructions furnished with the equipment, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation. Equipment suitable for built-in installation, side-by-side mounting, or stacking is indicated in the installation instructions. Some equipment is intended to be placed on noncombustible floors, or on combustible floors covered with an insulating, noncombustible floor protector as specified in the manufacturer's installation instructions, CAN/CSA-B365-01 and CAN/CSA-A405-M87, as applicable. Equipment provided with flue collars is intended to be vent connected.

The equipment is intended to be connected to a gas supply of the type(s) specified on the equipment.

Food service equipment of certain types is designed for permanent connection to water supply and sewer lines at the point of installation. Applicable codes and Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

All equipment, but especially equipment that may emit grease laden vapors, is intended to be provided with an exhaust ventilating system in accordance with NFPA 96, ''Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.'' See Exhaust Hoods with Exhaust Dampers Certified for Canada (YXZR7), Exhaust Hoods Without Exhaust Dampers Certified for Canada (YYCW7), or Grease Ducts for Restaurant Cooking Appliances Certified for Canada (YYGQ7). Exhaust hood assemblies covered under these categories are intended to be installed in accordance with the manufacturer's installation instructions and ANSI/NFPA 96 and the CEC, as applicable. All exhaust hoods are marked relative to minimum exhaust airflow and maximum supply airflow directed into the hood and/or out the bottom (if provided). Airflow rates are established under draft-free laboratory conditions. Greater exhaust and/or lesser supply airflow rates may be required for each specific installation to obtain complete vapor and smoke removal.

FACTORS NOT INVESTIGATED

The toxicity of coatings, the physiological effects on persons consuming food products prepared or served by use of this equipment, the structural and sanitation properties of the equipment, the toxicity of the products of combustion, and the structures in which the equipment may be installed have not been investigated.

RELATED PRODUCTS

See Gas-fired Food Service Equipment Certified for Canada (LGQX7), Cooking Appliances, Wood Fired Certified for Canada (LCJX7) and Commercial Cooking Appliances Certified for Canada (KNGT7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are the current edition and effective addenda thereto of ANSI Z83.11/CSA 1.8, ''Gas Food Service Equipment,'' the current edition of ULC-S627, ''Space Heaters for Use with Solid Fuels,'' and ULC/ORD C1482, ''Space Heaters for Use with Particulate Solid Fuels.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name ''Gas-Wood-fired Oven'' or other appropriate product name as shown in the individual Listings, the standard designation ''ANS Z83.11(+) CSA 1.8(+)-(++) Food Service Equip.,'' and for equipment that requires additional parts to complete the installation, the statement ''For Use With [Company Name] Listed Wood-fired (or Gas-Wood-fired) Equipment Parts.'' (+++)

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

(+++) Each additional part includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas-Wood-fired Equipment Part.''

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Gas-Wood-fired Food Service Equipment Certified for Canada (LGRC7)−*Continued*

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GAS-FIRED PROCESS TUBE HEATERS CERTIFIED FOR CANADA (LGTY7)

USE AND INSTALLATION

This category covers gas-fired process tube heaters with a maximum rating of more than 400,000 Btu/h, and intended for commercial or industrial installation. The heating medium for which the device is intended for use (water, glycol, thermal fluid or other) is specified in the individual Listings.

The process tube heater may be furnished either with an integral burner or intended for installation in the field with a separate burner designed for use with the process tube heater as indicated in the individual Listings. The process tube heater is marked to identify burner usage as indicated below.

Authorities Having Jurisdiction should be consulted with regard to the inspection of process tube heater assemblies in a particular area.

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN1-3.1-77, "Industrial and Commercial Gas-Fired Package Boilers."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the following product name and information as appropriate:

(A) "Gas-fired Process Tube Heater Assembly"

(B) "Gas-fired Process Tube Heater Assembly. For Use Only With [Company Name] Listed Gas Burner Model(s) _____, Max Input ____ BTU Per Hour."

A gas-fired process tube heater assembly that includes the burner assembly as part of the factory-furnished assembly bears a Gas-fired Listing Mark as noted in (A).

A process tube heater assembly designed for installation of the burner in the field or at another factory bears a Gas-fired Listing Mark and information as noted in (B), which covers the process tube heater only.

A field-installed burner bears a separate Listing Mark as described for gas burners (see KXWT7). The proper assemblies of process tube heater and burners to make unit assemblies are as specified on the process tube heater Gas-fired Listing Marks.

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MANUFACTURED HOME AND RECREATIONAL VEHICLE APPLIANCES CERTIFIED FOR CANADA (LHKX7)

USE AND INSTALLATION

This category covers fuel-burning appliances, such as space-heating appliances, cooking appliances, and water heaters designed specifically for installation in manufactured (mobile) homes, recreational vehicles and/or recreational park trailers. These appliances are designed to burn only gas or gas fuel in combination with electric heating capability as indicated in the individual product categories, and are equipped with primary safety controls.

These appliances are intended for installation in accordance with appropriate installation standards, such as the current editions of:

CAN/CSA-B149.1, "Natural Gas and Propane Installation Code"
CAN/CSA-B139-00, "Installation Code for Oil Burning Equipment"
CAN/CSA-C22.1, "Canadian Electrical Code, Part I"
CAN/CSA-Z240 MH Series-1992, "Mobile Homes"
CAN/CSA-Z240 RV Series-1999, "Recreational Vehicles"
CAN/CSA-Z241 Series-1992, "Park Model Trailers"
CAN/CSA-A405-1987, "Design and Construction of Masonry Chimneys and Fireplaces"
"National Building Code of Canada"

Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7)−*Continued*

These appliances may be installed on combustible surfaces with clearances to combustible construction not less than indicated in the marking on the appliance. The minimum clearance markings used in the individual Listings indicate minimum clearances in centimeters. The specified clearances are the minimums required to avoid overheating; additional clearances may be needed for accessibility.

These appliances are intended to be secured to the manufactured home or recreational vehicle structure. Above or under-the-floor warm air ducts may be connected to heating appliances if the appliances are factory built for the attachment of ducts, in which case the clearances are intended to be not less than those specified on the appliance and in the individual Listings. Unless otherwise indicated, the designated clearances (other than "zero") are based on tests of units with uninsulated sheet metal ducts and plenum attached. Under these conditions, temperatures below established criteria have been measured on a wooden test enclosure, representing combustible construction, spaced at the specified clearance (air) from the unit, ducts and plenum.

These appliances should be placed so that doors, window treatments, privacy curtains, or other materials cannot be placed or swung closer to or above the appliance than the specified clearances to the appliance. Placing fabrics on appliances for drying may be dangerous.

Figure 1 — Typical Alcove Installation

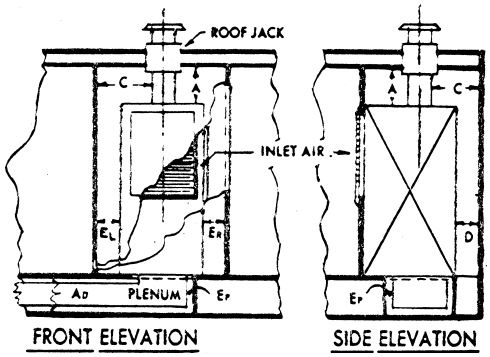
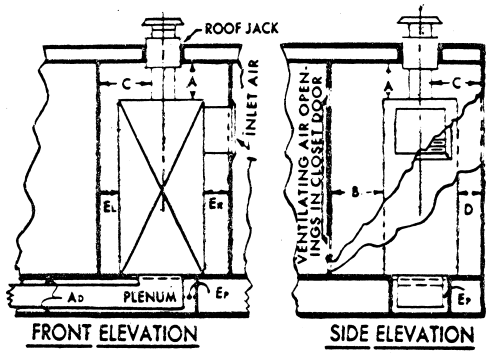


Figure 2 — Typical Closet Installation



Installation Symbols and Abbreviations (See Figures 1 and 2)

Descriptions of symbols and abbreviations for heating appliances used in Figures 1 and 2 are as follows:

A - – Clearance above top of appliance

A_D - – Clearance from horizontal warm-air duct within 0.91 m (3 ft) of appliance designed for connection of ducts. If not specified, appliance is not designed for ducts.

B - – Clearance from front of appliance. Prefix "C" to numeral indicates suitability for closet or alcove installation; prefix "A" indicates suitability for alcove installation only. No prefix indicates installation to be in a room only, but not for closet or alcove installation.

C - – Clearance from flue gas outlet assembly

D - – Clearance from back of appliance

E_L - – Clearance from left side of appliance

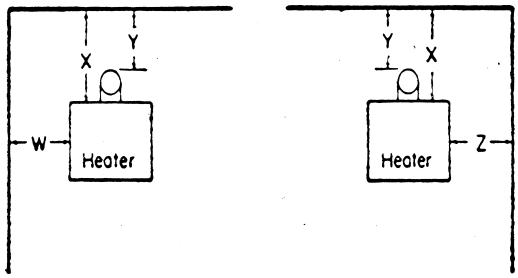
E_R - – Clearance from right side of appliance

E_P - – From any side of appliance plenum (downflow appliances have plenum beneath floor). $\mathbf{E_P}$ is only specified for appliances to be equipped with external plenums for connection to duct systems. Its omission when $\mathbf{A_D}$ is specified indicates the appliance is equipped with an integral plenum and if appliance is otherwise installed, clearances specified are not valid.

Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7)−*Continued*

G - – Total minimum free area, in square centimeters, of air openings into a closet

Figure 3 — Typical Room Heater Installation

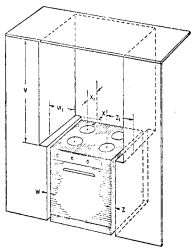


Installation Symbols and Abbreviations (See Figure 3)

Descriptions of symbols and abbreviations for room heaters used in Figure 3 are as follows:

V - – Clearance from top of heater (not shown in figure)
W - – Clearance from left side of heater
X - – Clearance from back of heater
Y - – Clearance from vent pipe
Z - – Clearance from right side of heater

Figure 4 — Typical Freestanding and Framed-in Range Installation



Installation Symbols and Abbreviations (See Figure 4)

Descriptions of symbols and abbreviations for ranges used in Figure 4 are as follows:

V - – Clearance from cooking top to underside of cabinets or ceiling above
W - – Clearance from left side of range
Z - – Clearance from right side of range
X - – Clearance from back of range (clearance established by integral spacers)
W1 - – Clearance from centerline of left burner
Z1 - – Clearance from centerline of right burner
X1 - – Clearance from centerline of rear burner

The clearance to combustible material from the front of the range is intended to be not less than 61 cm (24 in.), unless otherwise designated in the individual Listings.

Clearance from counter trim and integral spacers below counter of framed-in range may be zero.

Counter Units

For counter units, only V, W1, X1 and Z1 of the above dimensions are designated. Counter surface units are suitable for placing upon combustible counters. Counter recessed units are suitable for insertion into a combustible counter top with clearances to and below the counter top as established by spacers integral with the unit.

RELATED PRODUCTS

Gas-fired refrigerators intended for manufactured home and recreational vehicle use are covered under Refrigerators Using Gas Fuel Certified for Canada (LPHR7).

* *

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Gas-fired Manufactured Home and Recreational Vehicle Space-heating Appliances Certified for Canada (LHVR7)

USE AND INSTALLATION

Gas-fired Manufactured Home and Recreational Vehicle Space-heating Appliances Certified for Canada (LHVR7)−*Continued*

This category covers gas-fired, space-heating appliances intended for manufactured (mobile) homes and recreational vehicles. This includes space-heating appliances intended for outdoor use.

This category does not cover space-heating appliances intended for use in a marine environment, such as aboard boats or ships.

These appliances are intended to be installed in accordance with the (a) markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, (b) appropriate Canadian installation codes and standards, and (c) local codes.

The information pertaining to safe placement indicated in the individual certifications is designated in accordance with the figures, symbols and abbreviations given under Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7).

These appliances are marked with information specifying the type(s) of gas supply to which the product is intended to be connected. Appliances that are suitable for installation indoors only, outdoors only, or either are so indicated by a marking on the product.

RELATED PRODUCTS

See Gas-fired Manufactured Home and Recreational Vehicle Water Heaters Certified for Canada (LHYV7), Gas-fired Recreational Vehicle Cooking Appliances Certified for Canada (LIBN7), Heating and Cooling Equipment Certified for Canada (LZFE7), Gas-fired Central Furnaces Certified for Canada (KZZV7) and Gas-Oil-fired Central Furnaces Certified for Canada (LANT7).

ADDITIONAL INFORMATION

For additional information, see Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.47/CSA 2.3, "Gas-Fired Central Furnaces."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name "Gas-fired Space-heating Appliance for Mobile Home or Recreational Vehicle," and the standard designation "ANS Z21.47(+) CSA 2.3(+)-(++) Central Furn."

(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

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Gas-fired Manufactured Home and Recreational Vehicle Water Heaters Certified for Canada (LHYV7)

USE AND INSTALLATION

This category covers water heaters using only gas or a combination of gas and electric for heating and intended for manufactured (mobile) homes and recreational vehicles. This includes automatic-type storage water heaters intended for use with combination potable water/space heating applications and water heaters intended for outdoor use.

This category does not cover water heaters intended for use in a marine environment, such as aboard boats or ships.

These appliances are intended to be installed in accordance with the (a) markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances and proper vent installation, (b) appropriate Canadian installation codes and standards, and (c) local codes.

The information pertaining to safe placement when indicated in the individual Listings is designated in accordance with the figures, symbols and abbreviations given under Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7).

These appliances are marked with information specifying the type(s) of gas supply to which the product is intended to be connected. Appliances suitable for outdoor installation only are so indicated by a marking on the

Gas-fired Manufactured Home and Recreational Vehicle Water Heaters Certified for Canada (LHYV7)−*Continued*

product. CAN/CSA-B149.1, ''Natural Gas and Propane Installation Code,'' specifies vents constructed using plastic piping shall comply with ULC-S636, ''Standard for Type BH Gas Venting Systems.'' This requirement includes standard vents and vent fittings, including but not limited to, transitions and termination kits.

RELATED PRODUCTS

See Gas-fired Manufactured Home and Recreational Vehicle Space-heating Appliances Certified for Canada (LHVR7), Gas-fired Recreational Vehicle Cooking Appliances Certified for Canada (LIBN7) and Water Heaters Certified for Canada (LURX7).

ADDITIONAL INFORMATION

For additional information, see Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7), Heating Appliances Certified for Canada (KTCR7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7), and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are the current editions and effective addenda thereto of ANSI Z21.10.1/CSA 4.1, ''Gas Water Heaters, Volume I, Storage Water Heaters With Input Ratings of 75,000 Btu Per Hour or Less,'' and ANSI Z21.10.3/CSA 4.3, ''Gas Water Heaters, Volume III, Storage Water Heaters With Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous,'' and the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CAN/CSA-C22.2 No. 110-94, ''Construction and Test of Electric Storage-Tank Water Heaters.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and

(1) (a) for water heaters with inputs up to and including 75,000 Btu/h (21.98 kW), the standard designation ''ANS Z21.10.1(+) CSA 4.1(+)-(++)''

or

(b) for water heaters with over 75,000 Btu/h (21.98 kW), the standard designation ANS Z21.10.3(+) CSA 4.3(+)-(++)

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

and

(2) one of the following product names:

(a) ''Gas-fired or Gas-Electric Automatic Storage Water Heater''

(b) ''Gas-fired or Gas-Electric Automatic Circulating Tank Water Heater''

(c) ''Gas-fired or Gas-Electric Nonautomatic Circulating Tank Water Heater''

(d) ''Gas-fired Automatic Instantaneous Water Heater''

and

(3) one of the following texts as applicable for the intended use:

(a) ''For Installation in a Manufactured Home (Mobile Home)''

(b) ''For Installation in a Recreational Vehicle''

(c) ''For Installation in a Manufactured Home (Mobile Home) or Recreational Vehicle''

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Gas-fired Recreational Vehicle Cooking Appliances Certified for Canada (LIBN7)

USE AND INSTALLATION

This category covers propane-fired cooking appliances intended primarily for recreational vehicles. These include ranges, ovens, broilers, griddles, surface units, and the like, as well as combinations of these in one appliance as identified in the individual certifications. Gas-fired cooking appliances intended for manufactured (mobile) homes or household use are covered under Cooking Appliances, Gas Fired, Household Certified for Canada (LCCZ7).

This category does not cover cooking appliances intended for outdoor use or use in a marine environment, such as aboard boats or ships, or for use with other fuel gases.

These appliances are intended to be installed in accordance with (a) the markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances and proper vent installation, (b) appropriate installation codes and standards, and (c) local codes.

Gas-fired Recreational Vehicle Cooking Appliances Certified for Canada (LIBN7)−*Continued*

The information pertaining to safe placement indicated in the individual certifications is designated in accordance with the figures, symbols and abbreviations given under Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7).

These appliances are marked ''For Use With Propane Only'' to specify the type of gas supply to which the product is intended to be connected.

Appliances are designed for connection only to a 125 V or less electrical supply.

The flexible metallic conduit and high temperature insulated leads provided with some appliances are investigated as a component part of the appliance. Unless a conduit fitting or outlet box is installed at the factory, tape or other means is to be provided at the end of the conduit to protect the conductors during shipment. This protection may not necessarily take the place of any conduit bushing or fitting required by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

FACTORS NOT INVESTIGATED

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by the use of these appliances has been investigated.

The thermal efficiency of these appliances has not been investigated (see Products Verified for Energy Efficiency in Accordance with Canadian Regulations or Standards [ZYAA]).

RELATED PRODUCTS

See Gas-fired Manufactured Home and Recreational Vehicle Space-heating Appliances Certified for Canada (LHVR7), Gas-fired Manufactured Home and Recreational Vehicle Water Heaters Certified for Canada (LHYV7), Camp Stoves, Gas Fired, Portable Type Certified for Canada (LCHF7), Cooking Appliances, Gas Fired, Household Certified for Canada (LCCZ7) and Products Verified for Energy Efficiency in Accordance with Canadian Regulations or Standards (ZYAA).

ADDITIONAL INFORMATION

For additional information, see Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7), Heating Appliances Certified for Canada (KTCR7), and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CAN1-1.16 (1979), ''Propane Fired Cooking Appliances for Recreational Vehicles.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Gas Range for Recreational Vehicle,'' or other appropriate product name as shown in the individual Listings followed by ''for Recreational Vehicle.''

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Gas-fired Toilets Certified for Canada (LICI7)

USE AND INSTALLATION

This category covers gas-fired toilets designed for the disposal of human waste. They are intended for installation in accordance with CAN/CSA-B149.1, ''Natural Gas and Propane Installation Code,'' CAN/CSA-Z240.4, ''Gas-Equipped Recreational Vehicles and Mobile Housing,'' CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' and CAN/CSA-Z240 RV Series, ''Recreational Vehicles.'' They are for use with natural or propane gas and may use direct or alternating current as an auxiliary energy source.

Gas-fired toilets are intended to be installed in accordance with markings on the product pertaining to clearance and types of adjacent surfaces. They are of the vented type and can be used in manufactured (mobile) homes or recreational vehicles as indicated in the individual certifications.

Applicable local codes and Authorities Having Jurisdiction should be consulted with respect to installation, use, connection to the fuel supply, and sanitation.

ADDITIONAL INFORMATION

Gas-fired Toilets Certified for Canada (LICI7)−*Continued*

For additional information, see Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7), Heating Appliances Certified for Canada (KTCR7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of CGA 5.2, ''Gas-Fired Waterless Toilets.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''CGA 5.2(+)-(++) Gas-fired Waterless Toilet.''

(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

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Oil-fired and Oil-to-gas-fired Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LJAR7)

USE AND INSTALLATION

This category covers oil-fired and oil-to-gas-fired heating appliances, such as space-heating appliances, water heaters and room heaters, intended for manufactured (mobile) homes, recreational vehicles and recreational park trailers. This includes heating appliances intended for outdoor use.

This category does not cover heating appliances intended for use in a marine environment, such as aboard boats or ships.

These appliances are intended to be installed in accordance with the (a) markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances and proper vent installation, (b) appropriate Canadian installation codes and standards, and (c) local codes.

The information pertaining to safe placement indicated in the individual Listings is designated in accordance with the figures, symbols and abbreviations given under Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7).

These appliances are marked with information specifying the kind of fuel supply to which the product is intended to be connected. Appliances suitable for installation outdoors are so indicated by a marking on the product.

Appliances factory equipped with a Listed oil burner that are eligible for field conversion with a Listed gas burner are marked with the manufacturer's name and model number of the gas burner for which the appliance is intended to be used, as indicated in the individual Listings.

RELATED PRODUCTS

See Gas-fired Manufactured Home and Recreational Vehicle Space-heating Appliances Certified for Canada (LHVR7), Gas-fired Manufactured Home and Recreational Vehicle Water Heaters Certified for Canada (LHYV7), Central Furnaces Certified for Canada (KZLX7), Water Heaters Certified for Canada (LURX7) and Room Heaters Certified for Canada (LPJX7).

ADDITIONAL INFORMATION

For additional information, see Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LHKX7), Heating Appliances Certified for Canada (KTCR7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition of CSA B140.10, ''Oil-Fired Warm Air Heating Appliances for Mobile Housing and Recreational Vehicles.''

Space-heating appliances are additionally investigated to the current edition of CAN/CSA B140.4, ''Oil-Fired Warm Air Furnaces.''

Water heaters are additionally investigated to the current edition of CSA B140.12, ''Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools.''

Room heaters are additionally investigated to the current edition of CSA B140.3, ''Oil Burning Stoves and Water Heaters.''

UL MARK

Oil-fired and Oil-to-gas-fired Manufactured Home and Recreational Vehicle Appliances Certified for Canada (LJAR7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and

(a) for an appliance factory equipped to burn oil only, the product name ''Oil-fired Water Heater for Mobile Home or Recreational Vehicle,'' ''Oil-fired Space-heating Appliance for Mobile Home or Recreational Vehicle'' or ''Oil-fired Room Heater for Mobile Home or Recreational Vehicle'';

or

(b) for an appliance factory equipped with a Listed oil burner but which may be converted by installation in the field of a factory-furnished Listed gas burner, the product name ''Gas- or Oil-fired Water Heater for Mobile Home or Recreational Vehicle,'' ''Gas- or Oil-fired Space-heating Appliance for Mobile Home or Recreational Vehicle'' or ''Gas- or Oil-fired Room Heater for Mobile Home or Recreational Vehicle.'' For this situation, each burner bears a separate UL Listing Mark as described under Domestic Gas Conversion Burners Certified for Canada (KXSB7) and Oil Burners Certified for Canada (KYXZ7).

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PORTABLE HEATERS CERTIFIED FOR CANADA (LJNZ7)

Infrared Patio Heaters, Gas Fired, Outdoor Certified for Canada (LKQA7)

USE AND INSTALLATION

This category covers heating gas appliances for outdoor use only. These include patio heaters, table heaters and the like, as identified in the individual certifications. These appliances may be either portable or stationary and are provided with a means of support by the manufacturer as part of the appliance.

Infrared patio heaters are intended for connection to:

1. A fixed fuel piping system operating at inlet gas pressures not exceeding 3.5 kPa (1/2 psi); or
2. An integral self-contained liquefied petroleum (propane) gas supply system, provided the appliance incorporates mounting means for the attachment of a maximum of one cylinder limited to a maximum of 9.1 kg (20 lb) of fuel:
   a. Operating at a regulated outlet pressure not exceeding 2.75 kPa (11 in wc); or
   b. Operating at regulated outlet pressures in excess of 2.75 kPa (11 in wc) but not greater than 34.5 kPa (5 psi).

These heating gas appliances are intended to be installed in accordance with the marking on the appliance pertaining to clearance and types of surfaces. Appliances suitable for overhead suspension, overhead angle mounting, wall mounting, or floor mounting are indicated in the installation instructions. Applicable codes and Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to installation and connection to the fuel supply.

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z83.26/CSA 2.37, ''Gas-Fired Outdoor Infrared Patio Heaters.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z83.26/C2.37 (+)-(++) Gas-Fired Outdoor Infrared Patio Heater.''

(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

Infrared Patio Heaters, Gas Fired, Outdoor Certified for Canada (LKQA7)−*Continued*

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RADIANT HEATERS, COMMERCIAL CERTIFIED FOR CANADA (LLDT7)

Gas-fired Radiant Heaters, Commercial Certified for Canada (LLRR7)

USE AND INSTALLATION

This category covers gas-fired low-intensity and high-intensity infrared heaters with inputs up to and including 400,000 Btu/h (117.23 kW) per burner and intended for use in outdoor spaces or nonresidential indoor spaces where flammable gases or vapors are not generally present.

These heaters are intended to be installed in accordance with the installation instructions and markings on the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, and the following as applicable:

- the current edition of CSA B149.1, ''Natural Gas and Propane Installation Code''
- the current edition of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I''
- local codes

These heaters may be suspended overhead, angle-mounted overhead, wall mounted or floor mounted and are marked with information specifying the type(s) of gas supply to which the product is intended to be connected. Heaters suitable for installation indoors only, outdoors only, or either are so indicated by a marking on the product.

PRODUCT MARKINGS

These heaters are marked ''Low-Intensity Infrared Heater,'' ''Infrared Radiant Tube Heater'' or ''High-Intensity Infrared Heater,'' as applicable.

RELATED PRODUCTS

See Gas-fired Construction Heaters Certified for Canada (LGNH7) and Gas-burning Direct-fired Industrial Heaters Certified for Canada (LDET7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate low-intensity infrared heaters is the current edition and effective addenda thereto of ANSI Z83.20/CSA 2.34, ''Gas-Fired Low-Intensity Infrared Heaters.''

The basic standard used to investigate high-intensity infrared heaters is the current edition and effective addenda thereto of ANSI Z83.19/CSA 2.35, ''Gas-Fired High-Intensity Infrared Heaters.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z83.20(+) CSA 2.34(+)-(++) Low-Intensity Infrared Htr.'' or ''ANS Z83.19(+) CSA 2.35(+)-(++) High-Intensity Infrared Htr.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

REFRIGERATORS USING GAS FUEL CERTIFIED FOR CANADA (LPHR7)

USE AND INSTALLATION

This category covers gas-fired refrigerators having refrigerated spaces for (1) storage of foods, (2) storage of foods and making of ice, (3) storage of frozen foods and making of ice, or (4) storage of foods and the storage of frozen foods and making of ice. These appliances are for use with natural or propane gas and may use direct or alternating current as an auxiliary energy source. These appliances use Group 2 refrigerants (flammable types) not exceeding 6.0 lbs (2.27 kg) as defined in ASHRAE 34, ''Designation and Safety Classification of Refrigerants.'' Group 2 refrigerants include, but are not limited to, the following:

Refrigerators Using Gas Fuel Certified for Canada (LPHR7)−*Continued*

Refrigerant Designation	ANSI/ASHRAE 34	
Ammonia	NH3	717
Dichloroethylene	C2H2C12	1130
Ethyl chloride	C2H5CI	160
Methyl chloride	CH3CI	40
Methyl formate	HC00CH3	611
Sulphur dioxide	SO2	764

Gas-fired refrigerators are intended to be installed in accordance with the marking on the appliance pertaining to clearance and types of surfaces. These appliances can be of the vented, direct vented or unvented type and can be used in manufactured (mobile) homes, recreational vehicles or permanent dwellings as indicated in the individual certifications. Authorities Having Jurisdiction and applicable codes should be consulted as to the requirements for this equipment with respect to installation and use. Such codes include: CSA-B149.1, ''Natural Gas and Propane Installation Code,'' CSA-Z240.4, ''Gas-Equipped Recreational Vehicles and Mobile Housing,'' CAN/CSA-C22.1 Parts I and II, ''Canadian Electrical Code,'' CSA-Z240 RV Series, ''Recreational Vehicles Code,'' and CSA-B52, ''Mechanical Refrigeration Code.''

RELATED PRODUCTS

See Recreational Vehicle Refrigerators and Freezers Certified for Canada (SKKQ7), Gas-fired Mobile Home and Recreational Vehicle Appliances, Space Heating Certified for Canada (LHVR7), Gas-fired Mobile Home and Recreational Vehicle Appliances, Miscellaneous Certified for Canada (LHYV7), Heating and Cooling Equipment Certified for Canada (LZFE7) and Refrigeration Equipment Certified for Canada (SCER7).

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.19/CSA 1.4, ''Refrigerators Using Gas Fuel.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.19(+) CSA-1.4(+)-(++) Refrigerator.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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ROOM HEATERS CERTIFIED FOR CANADA (LPJX7)

GENERAL

This category covers room heaters that may be freestanding, wall mounted, or intended for installation in noncombustible fireplaces. Unless otherwise marked, freestanding room heaters may be placed on combustible floors. All heaters are intended to be installed with clearances to combustible material not less than indicated in the individual Listings, and on the heater or in the directions furnished with the heater.

Unless otherwise indicated, gas heaters are of the vented type and are equipped with integral primary safety controls. Kerosene heaters are of the unvented type. Kerosene and oil heaters are equipped with integral antiflooding device or are designed to prevent overflow of oil in the event of flame extinguishment.

The sketches, dimension symbols, and abbreviations are used in the individual Listings to indicate minimum clearances in inches. The clearances so designated are only the minimum required to avoid overheating; additional clearances may be needed for accessibility.

All kerosene- and oil-fired heaters should be installed with sufficient clearance to provide direct and easy access to the fuel tank.

See the individual Listings for clearances to combustibles. The vertical clearance above the top of a heater should not be less than 914 mm (36 in.) to combustible material unless otherwise indicated. Also, room heaters should be so placed that a door, drapes, or similar objects cannot be nearer than the specified clearance to the sides of the heater.

Room Heaters Certified for Canada (LPJX7)−*Continued*

Oil-fired room heaters of the vented type are low-heat appliances intended to be flue connected to suitable chimneys. Gas-fired room heaters may be connected to Type B gas vents.

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Gas-fired Room Heaters, Vented Certified for Canada (LPNH7)

USE AND INSTALLATION

This category covers vented gas-fired room heaters. These appliances are self-contained, nonrecessed, gas-burning appliances furnishing warm air by gravity or fan circulation to the space where installed. They are not provided with any duct connection and may be freestanding or installed overhead.

Gas-fired decorative appliances are intended to be installed in accordance with the installation instructions and markings on the appliance, and are intended to be connected to a gas supply of the type specified on the appliance. Equipment is intended to be installed in accordance with the current edition of ANSI Z223.1/NFPA 54, ''National Fuel Gas Code,'' and CAN/CGA-B149, ''Canadian Installation Code.''

ADDITIONAL INFORMATION

For additional information, see Room Heaters Certified for Canada (LPJX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.86/CSA 2.32, ''Vented Gas-Fired Space Heating Appliances.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.86(+) CSA 2.32(+)-(++) Vented Room Heater.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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Gas Fireplace Heaters, Vented Certified for Canada (LPPM7)

USE AND INSTALLATION

This category covers vented gas-fired fireplace heaters. These appliances allow the view of flames and provide the simulation of a solid-fuel fireplace, and furnish warm air to the space in which it is installed directly from the appliance, with or without duct connections. The design of a vented gas-fired fireplace heater is such that it will comply with minimum thermal efficiency requirements and may be controlled by an automatic thermostat. A vented gas fireplace heater may be freestanding, wall mounted, recessed or zero clearance, or a gas fireplace insert. The fireplaces may be direct vented, gravity vented or power vented.

Gas-fired decorative appliances are intended to be installed in accordance with the installation instructions and markings on the appliance, and are intended to be connected to a gas supply of the type specified on the appliance. Equipment is intended to be installed in accordance with the current edition of ANSI Z223.1/NFPA 54, ''National Fuel Gas Code,'' and CAN/CGA-B149, ''Canadian Installation Code.''

RELATED PRODUCTS

See Decorative Gas-burning Appliances for Installation in Vented Fireplaces Certified for Canada (EOIM7) and Decorative Vented Gas-burning Fireplaces Certified for Canada (EOJH7).

ADDITIONAL INFORMATION

For additional information, see Room Heaters Certified for Canada (LPJX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

Gas Fireplace Heaters, Vented Certified for Canada (LPPM7)−*Continued*

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.88/CSA 2.33, ''Vented Gas Fireplace Heaters.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.88 CSA-2.33(+)-(++) Vented Gas Fireplace Heater.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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Kerosene-fired Room Heaters Certified for Canada (LQLT7)

GENERAL

The information pertaining to placement indicated in the individual certifications is designated in accordance with the sketches, symbols, and abbreviations given under Room Heaters Certified for Canada (LPJX7). This information is also marked on the appliance or included in the instructions furnished with the heater.

ADDITIONAL INFORMATION

For additional information, see Room Heaters Certified for Canada (LPJX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B140.3, ''Oil-Burning Stoves and Water Heaters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Kerosene-fired Room Heater.''

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Oil-fired Room Heaters Certified for Canada (LQZR7)

USE AND INSTALLATION

This category covers oil-fired room heaters intended for use with ANSI/ASTM D396 No. 1 and No. 2 fuel oils.

The information pertaining to placement indicated in the individual certifications is designated in accordance with the sketches, symbols, and abbreviations given under Room Heaters Certified for Canada (LPJX7). This information is also marked on the appliance or included in the instructions furnished with the heater. Additional requirements for the installation and use of oil-burning equipment are included in CAN/CSA B139, ''Installation Code for Oil-Burning Equipment.''

RELATED PRODUCTS

See Kerosene-fired Room Heaters Certified for Canada (LQLT7).

ADDITIONAL INFORMATION

For additional information, see Room Heaters Certified for Canada (LPJX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-B140.3, ''Oil Burning Stoves and Water Heaters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Oil-fired Room Heaters Certified for Canada (LQZR7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Oil-fired Room Heater.''

* *

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Unvented Alcohol-fuel-burning Decorative Appliances Certified for Canada (LRBA7)

USE AND INSTALLATION

This category covers unvented self-contained ethyl alcohol-fuel burning appliances. These appliances are intended for decorative purposes, though there may be limited radiant and convection-air comfort heating. They are not provided with means for duct connection nor is there electrical/mechanical assist of heated air movement, such as a fan-blower assembly.

The ethyl alcohol fuels for use with these appliances are required to meet the Health Canada Consumer Chemicals and Containers Regulations and the EcoLogo program requirements. The appliances are investigated for use only with the specific fuel marked on the appliance nameplate. Use of fuels other than those specified for the appliance may result in risk of asphyxiation and fire hazard. Refueling is intended to be accomplished in accordance with markings on the appliance and only from containers indicated as suitable for the purpose.

Installation is intended to be in accordance with local codes, the manufacturer's installation instructions and any markings on the appliance. These appliances may be floor mounted or wall mounted. They may be installed in a solid-fuel-burning fireplace adapted for the purpose and, when so marked, in a factory-built solid-fuel-burning fireplace in accordance with the manufacturer's instructions. They are not intended for use in bathrooms or bedrooms nor for institutional use.

Unvented alcohol-fuel-burning appliances require fresh air infiltration into the room in which the appliances are installed. Refer to markings on the appliance and the manufacturer's instructions for information on ventilation.

ADDITIONAL INFORMATION

For additional information, see Room Heaters Certified for Canada (LPJX7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C627.1, ''Unvented Ethyl Alcohol Fuel Burning Decorative Appliances.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Unvented Alcohol-fuel-burning Decorative Appliance.''

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SWIMMING POOL AND SPA HEATERS CERTIFIED FOR CANADA (LSBZ7)

Gas-fired Swimming Pool and Spa Heaters Certified for Canada (LSEV7)

USE

This category covers gas-fired appliances intended for indoor or outdoor use for heating nonpotable water stored at atmospheric pressure, such as water in swimming pools, spas, hot tubs, and similar applications.

INSTALLATION

These heaters are intended to be installed in accordance with the markings on the appliance and in the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, closet installation, types of adjacent surfaces, and proper vent installation, and the following as applicable:

Gas-fired Swimming Pool and Spa Heaters Certified for Canada (LSEV7)−*Continued*

- the current edition of CAN/CSA-B149.1, ''Natural Gas and Propane Installation Code''
- the current edition of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I''
- local codes

These heaters are marked with information specifying the type(s) of gas supply to which the product is to be connected. Heaters suitable for installation indoors only, outdoors only, or either are so indicated by a marking on the product. Heaters suitable for installation at a distance less than 5 feet (1.52 m) from the inside surface of a pool or spa (defined as close proximity heaters) are so indicated by a marking on the product.

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z21.56/CSA 4.7, ''Gas-Fired Pool Heaters.'' In addition, spa heaters are investigated to CAN/CSA-C22.2 No. 218.1 (1989), ''Spas, Hot Tubs and Associated Equipment.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''ANS Z21.56(+) CSA 4.7(+)-(++) Pool Heater.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

* *

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UNIT HEATERS CERTIFIED FOR CANADA (LSOV7)

USE AND INSTALLATION

This category covers fuel-fired, self-contained, automatically-controlled unit heaters equipped with an integral fan or blower for circulation of air and may also be equipped with louvers or face extensions. These heaters are designed to burn gas as indicated in the individual product categories, and are provided with primary safety controls and with limit controls.

These heaters are intended for installation on the type of floor and with clearances to combustible construction not less than indicated in the marking on the heater. The minimum clearance markings used in the individual Listings to indicate minimum clearances in centimeters and type of flooring may be in the form of symbols and abbreviations, as noted below. The specified clearances are the minimums required to avoid overheating; additional clearances may be needed for accessibility.

These heaters are intended for installation in accordance with the appropriate standards as required by the province in which the appliance is being installed, such as the current editions of:

- CAN/CSA-B149.1, ''Natural Gas and Propane Installation Code''
- CAN/CSA-C22.1, ''Canadian Electrical Code, Part I''
- CAN/CSA-A405-1987, ''Design and Construction of Masonry Chimneys and Fireplaces''
- ''National Building Code of Canada''

Installation Symbols and Abbreviations

Descriptions of symbols and abbreviations applicable to the installation of unit heaters are as follows:

A - – Clearance above top of heater

B - – Clearance from burner if externally mounted on heater

C_H - – Clearance from flue or vent pipe measured horizontally or below flue or pipe

C_V - – Clearance from flue or vent pipe measured vertically or above flue or vent pipe

D - – Clearance from back of heater

E_L - – Clearance from left side of heater

E_R - – Clearance from right side of heater

F - – Indicates type of flooring: NC = Noncombustible, C = Combustible; numeral indicates minimum clearance below suspended appliances to combustible material

Unit Heaters Certified for Canada (LSOV7)−*Continued*

Typical Installation Clearances for Unit Heaters

When a unit heater is Listed for typical installation clearances, the Listing may refer to the Form designation. Form designations for typical installation clearances for unit heaters installed in rooms are indicated in the table below. Clearances are indicated in the individual Listings.

Form	Standard Minimum Clearances (cm)							
	A	B	C_H	C_V	D	E_L	E_R	F
III	45.72	121.92	45.72	45.72	45.72	45.72	45.72	NC
IIIa	45.72	121.92	45.72	45.72	45.72	45.72	45.72	C
IIIb	45.72	121.92	45.72	45.72	45.72	45.72	45.72	45.72
V	15.24	60.96	45.72	45.72	45.72	45.72	45.72	45.72
XV	15.24	45.72	15.24	15.24	45.72	45.72	45.72	30.48

Unit heaters Listed for Forms III, IIIa, IIIb and V are low-heat appliances intended for connection to suitable chimneys

Unit heaters Listed for Form XV are low-heat gas appliances suitable for venting to Type B vents for gas appliances

* *

Gas-fired Unit Heaters Certified for Canada (LTCT7)

USE

This category covers gas-fired, vented unit heaters with inputs up to and including 10,000,000 Btu/h (2931 kW). These heaters are intended for commercial or industrial use and for use with natural gas with inlet gas pressures up to and including 5.0 psi (34.5 kPa) and/or liquefied petroleum (LP) gas. These heaters are intended for use indoors or outdoors in locations where flammable gases or vapors are not generally present. Unless installed outdoors, these heaters are intended for use in the space being heated. These heaters may be used in aircraft hangars, parking structures and repair garages.

CATEGORIES

Unit heaters are of either the low- or high-static pressure type and are divided into four categories as noted below based on the pressure produced in the vent and the difference between actual vent gas temperature and the dew point temperature:

Category I - – Operates with a non-positive vent pressure and with a vent gas temperature at least 140°F (78°C) above its dew point.

Category II - – Operates with a non-positive vent pressure and with a vent gas temperature less than 140°F (78°C) above its dew point.

Category III - – Operates with a positive vent pressure and with a vent gas temperature at least 140°F (78°C) above its dew point.

Category IV - – Operates with a positive vent pressure and with a vent gas temperature less than 140°F (78°C) above its dew point.

INSTALLATION

These heaters are intended to be installed in accordance with the markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances, types of adjacent surfaces, and proper vent installation, in addition to the appropriate Canadian installation codes and standards, and local codes.

The minimum clearance markings may be in the form of symbols, Form designations (for typical installations), and abbreviations as noted under Unit Heaters Certified for Canada (LSOV7). This information is also included in the individual certifications.

These heaters may be suspended or floor-mounted. Heaters suitable for installation outdoors only or either indoors or outdoors are so indicated by a marking on the product. These heaters are marked with information specifying the type(s) of gas supply to which the product is intended to be connected.

PRODUCT MARKINGS

In addition to the markings noted under **INSTALLATION** above, these heaters are marked with the category of the appliance as well as the statement "For Industrial/Commercial Use."

ADDITIONAL INFORMATION

For additional information, see Unit Heaters Certified for Canada (LSOV7), Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addenda thereto of ANSI Z83.8/CSA 2.6, "Gas Unit Heaters and Gas-Fired Duct Furnaces."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and

Gas-fired Unit Heaters Certified for Canada (LTCT7)−*Continued*

Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the standard designation "ANS Z83.8(+) CSA 2.6(+)-(++) Unit Heater," and the statement "For Use With _____ Primary Safety Controls."

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

* *

USED-OIL-BURNING APPLIANCES CERTIFIED FOR CANADA (LUQH7)

USE AND INSTALLATION

This category covers heating appliances, such as oil burners, central furnaces, room heaters, unit heaters and the like, intended for use with used petroleum-based oils, such as crankcase oils as the fuel, and intended for use only in commercial and industrial occupancies. The specific types of fuels and appliances are identified in the individual certifications. Synthetic lubricants that contain chlorinated hydrocarbons, such as transformer, capacitor and hydraulic oils, are not covered under this category.

Used crankcase oils may vary considerably in their chemical and physical properties. They normally consist of a mixture of different grades of used automotive (crankcase) oil, transmission oil, brake fluid, and gasoline. Reference should be made to CSA B139, "Installation Code for Oil-Burning Equipment," for the safe handling, storage, and burning of used crankcase oils.

If an appliance has also been tested for use with standard commercial grade fuel oils, the grade(s) of oil that may be used with the appliance is also indicated in the nameplate marking and in the installation and operating instructions.

The investigation of the used-oil-burning appliances does not include a measure of emission of pollutants other than smoke density. Authorities Having Jurisdiction should be consulted with regard to the installation and use of the used-oil-burning appliances in a particular area.

The installation and use of used-oil-burning appliances is intended to be in strict accordance with the instructions furnished with the appliances and the standards as required by the Province in which the appliance is being installed, such as CSA-B139, CAN/CSA-C22.1, "Canadian Electrical Code, Part I," CAN/CSA A405, "Design and Construction of Masonry Chimneys and Fireplaces," and the "National Building Code of Canada." For additional information regarding the installation of the type of appliance identified in the individual certifications, refer to the product categories under **ADDITIONAL INFORMATION**.

RELATED PRODUCTS

See:

Domestic Gas Conversion Burners Certified for Canada (KXSB7)
Commercial/Industrial Gas Burners Certified for Canada (KXWT7)
Gas-Oil Burners Certified for Canada (KYKR7)
Oil Burners Certified for Canada (KYXZ7)

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B140.0, "Oil-Burning Equipment: General Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name "Waste/Used Oil Burning Appliance," "Waste/Used Oil Burning +," "Used-Oil-burning Appliance," or "Used-Oil-burning +" (or the equivalent), and the statement "For Use With Integral Primary Safety Controls."

+ Denotes the type of appliance as identified in the individual Listings

* *

WATER HEATERS CERTIFIED FOR CANADA (LURX7)

These are storage tank type water heaters intended for installation on the kind of floors and with clearances to combustible construction not less than indicated on the heater. They are provided with primary safety controls and limit controls.

Dimension symbols, and abbreviations are used in listings, published on 3 by 5 in. buff cards available from the Listee, to indicate minimum clearances in mm (inches), kind of flooring, when an appliance may be installed in an alcove or closet, and the total free area of the required air openings into a closet. The clearances so designated are only the minimums required to avoid overheating; additional clearances may be needed for accessibility.

Water heaters of a size greater than 100 Canadian gal capacity and/or with fuel input greater than 200,000 BTU per hr are furnished with tanks built in accordance with the ASME Boiler and Pressure Vessel Code.

None of these water heaters have been investigated for suitability to provide hot water for space heating purposes.

Each clearance is indicated by the appropriate symbols in the listing. If a water heater listed for alcove or closet installation is installed in a room which is large in relation to the size of the water heater it may be installed at the minimum clearances specified for closets and alcoves.

Description of dimension symbols and abbreviations.

A - Clearance above top of water heater.

B - From front of heater. Prefix "C" to numeral indicates suitability for closet or alcove installation; prefix "A," suitability for alcove installation but not for closet.

CH - From flue pipe measured horizontally or below pipe.

CV - From flue pipe measured vertically above pipe.

D - From back of heater.

EL - From left side of heater.

ER - From right side of heater.

F - Indicates type of flooring: "NC" for noncombustible; "C" for combustible.

G - Total minimum free area in square mm (square inches) of air openings into a closet.

Water heaters are intended to be flue connected to suitable chimneys.

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Gas-fired Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less Certified for Canada (LUVB7)

USE AND INSTALLATION

This category covers gas-fired storage water heaters having input ratings of 75,000 Btu/h (21,980 W) or less and intended for residential or commercial installation.

Gas-fired water heaters are intended to be installed in accordance with the instructions and markings, including specified gas supply, on the appliance. They are intended to be installed in accordance with the current edition of CAN/CSA-B149.1, "Natural Gas and Propane Installation Code." CAN/CSA-B149.1 specifies that vents constructed using plastic piping shall comply with ULC-S636, "Type BH Gas Venting Systems." This requirement includes standard vents and vent fittings, including but not limited to, transitions and termination kits.

WATER HEATER TYPES

A water heater is a vessel in which water is heated and withdrawn for use external to the vessel and includes all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C). Water heaters include the following types and features:

1. **Counter Type**

   Concealed Type — A water heater designed for flush installation beneath a counter 36 in. (91.4 cm) high, wherein the entire heater is concealed.

   Flush Type — A water heater designed primarily for installation in conjunction with or adjacent to a counter 36 in. (91.4 cm) high, wherein the front and top of the heater casing are exposed.

   Recessed Type — A water heater that is for installation beneath a counter 36 in. (91.4 cm) high, wherein the front of the heater casing is exposed.

2. **Direct Vent** — A system consisting of (a) a water heater for indoor installation, (b) combustion air connections between the water heater and the outside atmosphere, (c) flue gas connections between the water heater and the vent cap, and (d) vent cap for installation outdoors, supplied by the manufacturer, and constructed so that all air for combustion is obtained from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

Gas-fired Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less Certified for Canada (LUVB7)−*Continued*

3. **Automatic Storage** — A water heater that heats and stores water within the vessel at a thermostatically controlled temperature for delivery on demand, and which has an input rating of less than 4,000 Btu/h/gal of stored water.

RELATED PRODUCTS

See Gas-fired Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous Certified for Canada (LUVK7) and Gas-fired Mobile Home and Recreational Vehicle Appliances, Miscellaneous Certified for Canada (LHYV7).

ADDITIONAL INFORMATION

For additional information, see Water Heaters Certified for Canada (LURX7), Heating Appliances Certified for Canada (KTCR7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.10.1/CSA 4.1, "Gas Water Heaters, Volume I, Storage Water Heaters, with Input Ratings of 75,000 Btu Per Hour or Less."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name "Automatic Storage Water Heater," "Nonautomatic Storage Water Heater" or "Water Heater," with or without the prefix "Direct Vent" if applicable, and the standard designation "ANS Z21.10.1(+) CSA 4.1(+)-(++)."

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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Gas-fired Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous Certified for Canada (LUVK7)

USE AND INSTALLATION

This category covers gas-fired automatic storage water heaters having input ratings above 75,000 Btu/h (21,980 W) and intended for residential or commercial installation, instantaneous water heaters, circulating water heaters and booster water heaters.

Gas-fired water heaters are intended to be installed in accordance with the instructions and markings, including specified gas supply, on the appliance. They are intended to be installed in accordance with the current edition of CAN/CSA-B149.1, "Natural Gas and Propane Installation Code." CAN/CSA-B149.1 specifies that vents constructed using plastic piping shall comply with ULC-S636, "Type BH Gas Venting Systems." This requirement includes standard vents and vent fittings, including but not limited to, transitions and termination kits.

WATER HEATER TYPES

A water heater is a vessel in which water is heated and withdrawn for use external to the vessel and includes all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C). Water heaters include the following types and features:

Circulating — Furnishes hot water to be stored in a separate vessel. Circulating may be either gravity or forced. An automatic circulating water heater is controlled by a thermostat which is an integral part of the water heater. A nonautomatic circulating water heater is controlled by a thermostat installed in the storage vessel.

Instantaneous — Has an input rating of at least 4,000 Btu/h/gal of stored water.

Tank Type — Has a water storage vessel which has a heat transfer surface(s) of internal fire-tube(s) or exterior surface(s) of the vessel, or both.

Water-tube Type — Tubes contain water and heat is applied to their outside surfaces.

Automatic Storage — Heats and stores water within the appliance at a thermostatically controlled temperature for delivery on demand, and which has an input rating of less than 4,000 Btu/h/gal of stored water.

Direct Vent — A system consisting of (1) a water heater for indoor installation, (2) combustion air connections between the water heater and

Gas-fired Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous Certified for Canada (LUVK7)−*Continued*

the outside atmosphere, (3) flue gas connections between the water heater and the vent cap, and (4) a vent cap for installation outdoors, supplied by the manufacturer and constructed so that all air for combustion is obtained from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

Booster Type — Intended only for use in conjunction with commercial dishwashers that raises the temperature of the preheated water supplied to the unit typically between 110°F and 140°F (43.3° – 60.0°C) to 180 – 195°F (82.2 – 90.6°C).

ADDITIONAL INFORMATION

For additional information, see Water Heaters Certified for Canada (LURX7), Heating Appliances Certified for Canada (KTCR7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.10.3/CSA 4.3, "Gas Water Heaters, Volume III, Storage Water Heaters, with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous."

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product name "Automatic Circulating Tank Water Heater," "Nonautomatic Circulating Tank Water Heater," "Automatic Instantaneous Water Heater" or "Automatic Storage Water Heater," with or without the word "Booster" and/or prefix "Direct Vent" if applicable, and the standard designation "ANS Z21.10.3(+) CSA 4.3(+)-(++)."

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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Oil-fired Water Heaters Certified for Canada (LVFV7)

USE AND INSTALLATION

This category covers oil-fired water heaters. An oil-fired water heater may be furnished either as a unit assembly with a factory-installed oil burner or in two segments, one the water heater and the other the oil burner, each factory built to accommodate the other.

These appliances are intended to be installed in accordance with the (a) markings on the appliance and the installation instructions provided with the appliance, including (as applicable) markings and instructions pertaining to clearances and proper vent installation, (b) appropriate installation codes and standards, and (c) local building and plumbing codes.

The information pertaining to safe placement indicated in the individual Listings is designated in accordance with the figures, symbols and abbreviations given under Water Heaters Certified for Canada (LURX7).

These appliances are marked with information specifying the type(s) of standard grade fuel oils as specified in CSA B140.0, "Oil-Burning Equipment: General Requirements," and CAN/CGSB 3.2, "Heating Fuel Oil," with which the product is intended to be used. Appliances suitable for outdoor installation only are so indicated by a marking on the product.

RELATED PRODUCTS

See Oil Burners Certified for Canada (KYXZ7) and Oil-fired Boiler Assemblies Certified for Canada (KWUX7).

ADDITIONAL INFORMATION

For additional information, see Water Heaters Certified for Canada (LURX7), Heating Appliances Certified for Canada (KTCR7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B140.12, "Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Oil-fired Water Heaters Certified for Canada (LVFV7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names and information as appropriate:

(A) "Oil-fired Water Heater. For Use Only With Integral Primary Safety Controls. Oil Not Heavier Than No. ____."

(B) "Water Heater. For Use Only With [Company Name] Listed Oil Burner Model(s) ____. Max Input ____ Gals Per Hour. Refer to Burner Label for Fuel Specifications."

An oil-fired water heater that includes the burner as part of the factory-furnished assembly bears a Listing Mark with the product name and information similar to (A).

A water heater designated for installation of the burner in the field or at another factory bears a Listing Mark with the product name and information similar to (B), which covers the water heater only. The burner bears a separate Listing Mark as described for oil burners (see KYXZ7). The proper assemblies of water heaters and burners to make unit assemblies are as described in the water heater Listing Marks.

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Solid-fuel-fired Water Heaters Certified for Canada (LVHO7)

USE

This category covers water heaters designed to burn solid fuel, such as wood, coal, or any other biomass fuel, and intended for use in household, commercial, industrial or institutional occupancies.

INSTALLATION

These water heaters are intended to be installed in accordance with the instructions provided with the appliance and markings on the appliance, and with the appropriate installation standards, such as the current editions of:

- CAN/CSA B365, "Installation Code for Solid-Fuel-Burning Appliances and Equipment"
- CAN/CSA-C22.1, "Canadian Electrical Code, Part I"
- "National Building Code of Canada"
- Local codes

RELATED PRODUCTS

See Gas-fired Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less Certified for Canada (LUVB7), Gas-fired Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous Certified for Canada (LUVK7) and Oil-fired Water Heaters Certified for Canada (LVFV7).

ADDITIONAL INFORMATION

For additional information, see Water Heaters Certified for Canada (LURX7), Heating Appliances Certified for Canada (KTCR7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are the current editions and effective addenda thereto of CAN/CSA B366.1, "Solid-Fuel-Fired Central Heating Appliances," ULC-S627, "Space Heaters for Use with Solid Fuels," and CSA B140.12, "Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Solid-fuel-fired Household Water Heater," or other appropriate product name as shown in the individual Listings.

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SPECIALTY HEATING APPLIANCES CERTIFIED FOR CANADA (LVTT7)

GENERAL

This category covers specialty fuel-fired heating appliances, such as outdoor gas fireplaces, outdoor gas log sets, infrared patio heaters, commercial rotisseries and the like, as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Heating Appliances Certified for Canada (KTCR7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is one of the following as appropriate:

CSA-CAN1 3.1-77, "Industrial and Commercial Gas-Fired Package Boilers"

CSA International Requirement 3.90 U.S., "Requirements for Outdoor Portable Camp Cook Stoves for Use with Butane Gas"

CSA International Requirement 4.96 U.S., "Requirements for Outdoor Gas Fireplaces"

CSA International Requirement 5.90 U.S., "Requirements for Gas-Fired Infrared Patio Heaters"

CSA International Requirement 7.94 U.S., "Requirements for Manually Lighted, Natural Gas Decorative Appliances for Installation in Solid-Fuel Burning Fireplaces"

ANSI Z21.50/CSA 2.22, "Vented Gas Appliances"

ANSI Z21.86/CSA 2.32, "Vented Gas-Fired Space Heating Appliances"

ANSI Z21.88/CSA 2.33, "Vented Gas Fireplace Heaters"

ANSI Z21.60/CSA 2.26, "Decorative Gas Appliances for Installation in Solid-Fuel Burning Fireplaces"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

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HEATING AND COOLING EQUIPMENT CERTIFIED FOR CANADA (LZFE7)

GENERAL

This category covers various types of heating and cooling equipment typically used for space conditioning.

Individual categories following the **GENERAL INFORMATION** section below are identified for each type of equipment. Not all statements in **GENERAL INFORMATION** are applicable to all types of equipment covered under this category; only the statements that are identified are applicable. Refer to the individual categories for the general information that is applicable.

Wiring Termination Provisions

For permanently connected equipment, the wiring termination provisions are based on tests during product investigation, and Table 2 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC) as follows:

1. 75°C insulated conductors at the 75°C ampacities.
2. 90°C insulated conductors at the 75°C ampacities in which case the equipment is marked for 90°C conductors.
3. Insulation temperature rating of 75 or 90°C and wire size as marked on the unit.

Also see **IV. INSTALLATION REQUIREMENTS** (Appliance and Utilization Equipment Terminations) under Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and **VIII. ELECTRICAL INSTALLATIONS** under Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

GENERAL INFORMATION

Product Types

1. The following defines the types of systems covered in the individual categories below:

A. **Self-contained** — Refrigeration system in one section, factory assembled, with refrigerant charge and tested for leaks.

B. **Compressor Unit** — Includes one or more compressors with associated controls and wiring, and may also include a receiver. These units are intended for field connection to a remote evaporator, unit cooler or fan-coil unit, and to a remote condenser having a marked working pressure not less than designated by the marking on the unit data plate. (The term is applicable both to refrigeration equipment of any size and also to air conditioning equipment. The term "air conditioning systems equipment, compressor unit" is used for air conditioning equipment rated over 135,000 Btu/h.)

C. **Compressor Condenser Unit** — Includes one or more compressors and condensers with interconnecting refrigerant piping and with associated controls and wiring. These units are intended for field connection to a remote evaporator, unit cooler or fan-coil unit. (The term is applicable to air conditioning systems equipment only.)

D. **Compressor-Evaporator (Cooler) Unit** — Includes one or more compressors and evaporators (coolers) with interconnecting refrigerant tubing or piping and with associated controls and wiring. The unit is factory assembled and tested for leaks. The refrigerant type is marked on the unit and the operating refrigerant charge may or may not be provided as indicated on the unit nameplate.

These units are intended for field connection to a remote condenser having a marked working pressure not less than designated by the marking on the unit data plate. (The term "compressor-evaporator" is applicable to air conditioning systems equipment and special purpose air conditioners, and the term "compressor-cooler" is applicable to liquid chillers.)

E. **Compressor Evaporator/Condenser** — Refrigeration system in two sections, one including the compressor and the evaporator and the other, the condenser. The sections are intended to be installed remote from each other. The interconnecting refrigerant tubing may or may not be provided. The operating refrigerant charge may or may not be provided, as indicated on the compressor evaporator unit nameplate. Each section is tested for leaks. (The term is applicable to central cooling air conditioners and special purpose air conditioners.)

F. **Condensing Unit/Evaporator (Outdoor/Indoor Unit)** — Refrigeration or air conditioning system in two sections, the condensing unit (or outdoor) section including the compressor and condenser and the other section the evaporator (indoor section). The sections are intended to be installed remote from each other. The interconnecting refrigerant tubing may or may not be provided. The operating refrigerant charge may or may not be provided, as indicated on the condensing unit nameplate.

Each section is tested for leaks. (The term "condensing unit/evaporator" is applicable to central cooling air conditioners and special purpose air conditioners, and the term "outdoor/indoor unit" is applicable to heat pumps.)

G. **Heating, Cooling and Ventilating Equipment** — Intended for use as part of a complete system and, when installed, may be associated with other equipment and components that are separately Listed. Unless indicated in the individual Listings for the other equipment, this equipment has not been investigated for operation when combined with other Listed equipment in a complete system assembled in the field.

H. **Condensing Unit** — Includes one or more compressors and air- or water-cooled condensers with interconnecting refrigerant piping and with associated controls and wiring, and may also include a receiver. These units are intended for field connection to a remote evaporator, unit cooler or fan-coil unit. (Same as "C" above, except the term is applicable to refrigeration equipment or to air conditioning equipment of any size.)

2. Heating and cooling equipment of the unitary type consists of one or more factory-built sections. If the equipment is provided in two or more sections, each such section is designed for field interconnection with a matched section(s) to make the heating and/or cooling equipment. Equipment provided in two or more sections is either marked to identify the appropriate sections for proper installation, or the designations of the sections comprising the assembly are shown in the individual Listings. Where so designated, a separately Listed electric central heating furnace, fan-coil unit or fan unit may serve as a portion of the assembly.

3. Listed equipment is rated 600 V or less. Centrifugal type units as identified in the individual Listings are rated 7200 V or less.

Installation Codes

4. This equipment is intended to be installed in accordance with the requirements of the CEC.

5. Equipment with gas-, oil-, or gas-oil-fired heating means is intended to be installed in accordance with the appropriate standards as required by the province in which the appliance is being installed, such as CAN/CSA-B149.1, "Natural Gas and Propane Installation Code," CAN/CSA-B139, "Installation Code for Oil-Burning Equipment," CAN/CSA-A405, "Design and Construction of Masonry Chimneys and Fireplaces," and the National Building Code of Canada.

6. Equipment is marked with the refrigerant type used and some units may employ alternative refrigerants that are not currently listed in CSA-B52, "Mechanical Refrigeration Code," but are included in ANSI/ASHRAE 34, "Designation and Safety Classification of Refrigerants." The

use of these alternative refrigerants resulted from environmental restrictions on some refrigerants currently listed in the code. Using requirements as applied to specified refrigerants in CSA-B52, UL's Listing Reports (available from the manufacturer) identify installation requirements applicable to the alternative refrigerants in the same manner as shown in ANSI/ASHRAE 15, "Safety Standard for Refrigeration Systems," for currently used refrigerants.

The refrigerants are classified A1 or A1/A1 by ANSI/ASHRAE 15 and have been determined to be nonflammable or practically nonflammable.

Wiring Diagrams

7. The proper method of electrical installation (number of branch circuits, control wiring connections, etc.) is shown on the wiring diagram and/or marking required to be attached to the equipment.

Units Used with Duct Heaters

8. Unless otherwise indicated in the individual Listings, Listed duct heaters that may be installed in conjunction with the equipment covered in the Listings are intended to be installed at least 1.2 m downstream from the equipment.

Field-installed Accessories

9. Heating and cooling equipment investigated for use with Listed field-installed accessories, such as electric resistance heaters (including duct heaters), are specifically indicated in the individual Listings. See Accessories, Air Conditioning Equipment Certified for Canada (ABFY7).

10. Units investigated for use with field-installed steam, hot water, or refrigerant coils or with electric resistance heaters (including Listed accessories or duct heaters as noted in paragraph 8 above) are marked to so indicate.

Electric Heat Considerations

11. Units that incorporate factory-installed electric resistance heaters are identified in the individual Listings.

12. Where a through-air clearance to combustible materials is required, this clearance is marked on the heating and/or cooling equipment and is designated in the individual Listings. The clearances are the minimum required to avoid overheating; additional clearances may be required for accessibility.

When zero clearance is specified, temperatures are measured directly on the unit cabinet with uninsulated sheet metal ducts and plenum attached. When clearances other than zero are specified, temperatures are measured on a wood test enclosure spaced at the specified clearances from the unit cabinet, ducts and plenum.

13. In heating and cooling equipment employing electric resistance heaters rated more than 48 A, the loads are subdivided so that each load does not exceed 48 A and is protected by overcurrent devices at not more than 60 A.

The overcurrent devices are either included as an integral part of the heating and cooling equipment or furnished as a separate assembly. If the overcurrent devices are furnished as a separate assembly, the unit is marked to specify that it is to be used with that particular separate assembly. For such separate assemblies specifically recognized for use with electric space heaters provided as part of this equipment, see **CONTROL PANELS FOR SPECIFIC ELECTRIC SPACE-HEATING EQUIPMENT** below. Other Listed separate assemblies, as referenced on a marking on the heating and cooling equipment, may also be used.

Unit Installation

14. Unless otherwise specified in the marking on the equipment, the unit may be installed on combustible flooring.

15. Attic type units are so indicated in the individual Listings. Such units are suitable for installation in an attic or comparable normally unoccupied location as designated by the marking or instructions provided on the unit.

16. Units/Sections suitable for outdoor installation are so marked and identified in the individual Listings either by the term "outdoor section" or by an appropriate footnote. Units/Sections not marked as suitable for outdoor installation are for indoor use only.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 236, "Heating and Cooling Equipment."

This category also covers products that have been investigated in accordance with CAN/CSA-E60335-2-40, "Requirements for Electric Heat Pumps, Air Conditioners and Dehumidifiers."

Alternatively, air conditioning systems, central cooling air conditioners (packaged and split system), heat pumps (packaged and split system), heat pump water heaters, accessories for heating and cooling equipment, accessories for air conditioning equipment, electric heater assemblies, dehumidifiers, and miscellaneous heating and cooling equipment single-phase appliances rated not more than 250 V, and all other appliances rated not more than 600 V are investigated to CAN/CSA-C22.2 No. 60335-1 (2011), "Safety of Household and Similar Electrical Appliances, Part 1: General Requirements," and CAN/CSA-C22.2 No. 60335-2-40 (2012), "Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers."

Other standards may also be used where specifically indicated in the individual categories below.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name as shown in the following individual categories or in the individual Listings.

The Gas-fired Listing Mark of UL for gas-fired products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the product identity, and the standard designation as shown in the following individual categories or in the individual Listings.

ABSORPTION AIR CONDITIONING EQUIPMENT

GENERAL INFORMATION paragraphs 1A, 2, 3, 4, 5, 6 and 16 are applicable to this equipment.

This category covers equipment of the unitary type employing an absorption type refrigeration system, and intended for commercial or domestic cooling, or heating and cooling of a liquid such as water or a water-antifreeze solution. This equipment is intended primarily, but not exclusively, for air conditioning application.

The direct energy source for cooling and heating is a hot fluid (such as gas, liquid or steam) as obtained from a source such as a solar-heat system or waste-heat, and/or gas-, oil-, or gas-oil-fired burners.

AIR CONDITIONING SYSTEMS EQUIPMENT, SELF-CONTAINED UNITS

AIR CONDITIONING SYSTEMS EQUIPMENT, COOLING PORTION OF SELF-CONTAINED UNITS

AIR CONDITIONING SYSTEMS EQUIPMENT, COMPRESSOR-EVAPORATOR UNITS

AIR CONDITIONING SYSTEMS EQUIPMENT, COMPRESSOR-CONDENSER UNITS

AIR CONDITIONING SYSTEMS EQUIPMENT, COMPRESSOR UNITS

GENERAL INFORMATION paragraphs 1A, 1B, 1C, 1D, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14 and 16 are applicable to this equipment.

This category covers equipment with a rated cooling capacity exceeding 135,000 Btu/h, intended for commercial or industrial central cooling applications. For equipment rated 135,000 Btu/h or less, see **AIR CONDITIONERS, CENTRAL COOLING** or **CONDENSING UNITS** below. For additional self-contained units incorporating gas-, oil-, or gas-oil-fired burners, see **HEATING AND COOLING UNITS** below.

Self-contained units and compressor-evaporator units may include heating means, including electric resistance heaters, gas-, oil-, or gas-oil-fired burners, or hot water or steam coils.

A gas-fired heating portion included in this category is for use only in the same manufacturer's specified air conditioning systems equipment as marked on the heating portion and as indicated in the individual Listings.

The basic standard used to investigate the refrigeration portion of the products in this category is CSA-C22.2 No. 236. The basic standard used to investigate the gas heating portion of the products in this category with gas heating inputs up to and including 400,000 Btu/h (117.23 kW) is ANSI Z21.47/CSA 2.3, "Gas-Fired Central Furnaces." The basic standard used to investigate the gas heating portion of the products in this category with gas heating inputs over 400,000 Btu/h (117.23 kW) is CGA 3.2, "Industrial and Commercial Gas-Fired Package Furnaces."

The Gas-fired Listing Mark is provided either on a Listed self-contained unit or on a Listed gas-fired heating section or portion of a Listed self-contained unit.

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the words "Gas Heating Portion," and

(a) for gas-fired heating portions with inputs up to and including 400,000 Btu/h (117.23 kW), the standard designation "ANS Z21.47(+) CSA 2.3(+)-(++) Central Furn"
(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

or

(b) for gas-fired heating portions with inputs over 400,000 Btu/h (117.23 kW), the standard designation "CGA 3.2-1976" and the product name "Central Furnace."

AIR CONDITIONERS AND CENTRAL COOLING AIR CONDITIONERS

SECTIONS OF CENTRAL COOLING AIR CONDITIONERS
ACCESSORIES FOR AIR CONDITIONERS

GENERAL INFORMATION paragraphs 1A, 1E, 1F, 2, 3, 4, and 6 through 16 inclusive are applicable to this equipment.

This category covers equipment of the unitary type, for commercial or domestic applications.

Unitary air conditioners consist of one or more factory-made sections, as described under **GENERAL INFORMATION**. Unless so indicated in the individual Listings, the evaporator blower is provided as part of the assembly, and may be an integral part of the evaporator section or furnished as a separate section.

CONDENSING UNITS
COMPRESSOR UNITS
ACCESSORIES FOR CONDENSING UNITS
ACCESSORIES FOR COMPRESSOR UNITS
ACCESSORIES FOR CONDENSING OR COMPRESSOR UNITS

GENERAL INFORMATION paragraphs 1B, 1H, 3, 4, 6, 10 and 16 are applicable to this equipment.

This category covers units intended for refrigeration service of any Btu per hour capacity. For units intended primarily for air conditioning applications, see **AIR CONDITIONING SYSTEMS EQUIPMENT** (rated more than 135,000 Btu/h) or **CENTRAL COOLING AIR CONDITIONERS** above.

This equipment is intended to be installed in air conditioning and refrigeration systems.

Some condensing units or compressor units included in this category are intended for field connection to multiple refrigeration systems and include multiple condensing units, compressor units or compressors, with single or multiple condensers, with associated piping, controls, and wiring, mounted on a common frame or in a common housing.

The acceptability of operation of these units, when associated with other components of a complete system, has not been investigated.

These units are intended to be used only in systems with the specified refrigerant and operating at pressures not in excess of those indicated by the marked test pressures.

GENERAL-PURPOSE CONTROL PANELS FOR ELECTRIC SPACE-HEATING EQUIPMENT
CONTROL PANELS FOR SPECIFIC ELECTRIC SPACE-HEATING EQUIPMENT

GENERAL INFORMATION paragraphs 3 and 4 are applicable to this equipment.

This category covers electrical panels incorporating control and/or overcurrent devices intended specifically for remote use with electric space-heating equipment, including air conditioning equipment with electric resistance space heaters.

Unless otherwise specified in the manufacturer's installation instructions, these panels are intended to be mounted remote from the space-heating equipment, in a location where they will not be affected by heat or condensation from operation of the equipment.

The proper installation of these panels requires careful consideration of the manufacturer's installation instructions and wiring diagrams.

General purpose panels are not limited to use with specific makes and models of space-heating equipment. These panels are provided with installation instructions and wiring diagrams showing supply connections, connections to the space-heating equipment, and control-circuit connections to be completed at the time of installation.

General purpose panels containing only overcurrent devices or only magnetically operated switching devices are covered under Panelboards Certified for Canada (QEUY7) and Industrial Control Equipment Certified for Canada (NIMX7), respectively.

Panels to be used only with specific Listed equipment are so identified and the equipment marked to require the particular panel. The installation instructions and wiring diagrams for these panels may be provided with the panel or may be provided only with the Listed space-heating equipment.

For control panels for specific electric space-heating equipment, see the equipment nameplate and installation instructions.

DEHUMIDIFIERS

GENERAL INFORMATION paragraphs 1A, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15 and 16 are applicable to this equipment. This category covers duct-mounted and permanently connected, self-contained household, commercial and industrial dehumidifiers for use in removing moisture from the air. These dehumidifiers employ hermetic refrigerant motor-compressors and may also incorporate electric air heaters.

ELECTRIC CENTRAL HEATING FURNACES
SECTIONS OF ELECTRIC CENTRAL HEATING FURNACES

GENERAL INFORMATION paragraphs 2, 4, 6, 12, 13 and 16 are applicable to this equipment.

This category covers electrically operated central heating furnaces intended for use in space-heating applications in homes and other types of buildings, including mobile homes and recreational vehicles, as indicated in the manufacturer's installation instructions.

HEATING AND COOLING EQUIPMENT CERTIFIED FOR CANADA (LZFE7)

Warm-air furnaces have provision for connection to a duct system except furnaces intended only for installation in a single story residence need not have provision for connection of a return air duct.

Each electric central heating furnace is provided with an individual marking and instructions. If a noncombustible floor material is required, the necessary clearances to combustible constructions and proper installation in an alcove or closet are specified in the marking and/or instructions.

Furnaces consist of one or more factory-built sections. Equipment provided in more than one section is designed for field interconnection of matched sections to make the complete assembly. The individual sections that comprise the assembly are identified in the individual Listings and by a cross-reference marking on at least one of the sections.

Furnaces investigated for use with a field-installed refrigerant coil are so identified in the individual Listings and the refrigerant coil(s) for such use are identified by a marking on the furnace. Tests of furnaces with these field-installed coils intended for cooling, or with integral factory-installed coils intended for cooling, have indicated no adverse effects on the furnace.

The assembly of a furnace with a field- or factory-installed refrigerant coil to a condensing unit of a central cooling air conditioner has been investigated only for those specific combinations identified in the individual Listings as "Air Conditioners, Central Cooling," or for those specific condensing units identified by a marking on the furnace.

The assembly of a furnace with a field- or factory-installed refrigerant coil to an outdoor section of a heat pump has been investigated only for those specific combinations identified in the individual Listings as "Heat Pumps." The effect of refrigerant heating on the furnace has not been investigated for other combinations.

ENVIRONMENTAL AIR TERMINAL UNITS

GENERAL INFORMATION paragraphs 1G, 3, 4, 6, 7, 8, 9, 10, and 12 through 16 inclusive are applicable to this equipment.

This category covers fixed appliances that include a motor-operated fan or blower with or without electric resistance heaters. The appliances are intended to be installed in accordance with the manufacturer's installation instructions in plenums above hung (suspended) ceilings where the inlet air to the appliance is taken from this plenum space in accordance with Section 12-010(3) of the CEC.

The air outlet may be free discharge or be ducted to ceiling diffusers.

FAN-COIL UNITS
SECTIONS OF FAN-COIL UNITS
ACCESSORIES FOR FAN-COIL UNITS

GENERAL INFORMATION paragraphs 1G, 2, 3, 4, 6, and 7 through 16 inclusive are applicable to this equipment.

This category covers appliances that include a motor-operated fan or blower together with a cooling coil, a heating coil, or both and may also include an electric heater. The fan or blower is designed to recirculate air or to draw in outside air, or both. The coil may be designed for refrigerant cooling, for refrigerant heating, for chilled water cooling, for hot water heating, for steam heating, or for combinations of these functions.

A fan-coil unit is intended to be piped to a remote source of heat, of cooling, or of both. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to connection to water supply lines.

Equipment intended for use with hot water is marked for a maximum inlet water temperature.

Equipment intended for use with steam is marked for a maximum inlet steam pressure.

A fan-coil unit containing a refrigerant coil that has been additionally investigated as part of a specific split-system cooling air conditioner, special purpose air conditioner or heat pump, is also identified as part of that system in the individual Listings as "Air Conditioners, Central Cooling," "Air Conditioners, Special Purpose" or "Heat Pumps."

A fan-coil unit, as covered by these requirements, may be designed for free delivery of air to the room or may be provided with means for duct connection. Representative types include floor-mounted, wall-mounted, ceiling-hung, and wall- or ceiling-insert (built-in) units.

A room-type unit is designed to circulate air to the conditioned space directly, or by means of duct work having a static-pressure drop not exceeding 1.27 mm of water.

Units that are similar to fan-coil units with electric resistance heaters, but not provided with a refrigerant, steam or water coil, are identified in the individual Listings as "Room Fan Heater Units."

FAN UNITS

GENERAL INFORMATION paragraphs 1G, 3, 4, 6, 7, 9, 10, and 12 through 16 inclusive are applicable to this equipment.

This category covers equipment intended to be connected to a duct system that supplies conditioned air for environmental heating and/or cooling. The units consist of a motor-operated fan or blower and may have air control dampers. The units may be thermostatically operated by integral or remote controls. The units do not include factory-installed heat exchangers or other integral heating or cooling means.

Fan units with field-installed heater accessories as detailed in paragraph 9 under **GENERAL INFORMATION** are the equivalent of "Electric Central Heating Furnaces."

Units intended for use in duct systems with air temperatures exceeding normal room ambient temperature are marked with the maximum inlet air temperature rating.

Other types of fans for duct connection are covered under Fans, Electric Certified for Canada (GPWV7) and Ventilators, Power Certified for Canada (ZACT7).

HEAT PUMPS
SECTIONS OF HEAT PUMPS
ACCESSORIES FOR HEAT PUMPS

GENERAL INFORMATION paragraphs 1A, 1F, 2, 3, 4, and 6 through 16 inclusive are applicable to this equipment.

This category covers reverse cycle unitary air conditioning systems for comfort heating and cooling (or for comfort heating only), if so indicated in the individual Listings.

HEAT PUMP WATER HEATERS
HEAT PUMP SWIMMING POOL HEATERS
HEAT PUMP SPA HEATERS
SECTIONS OF HEAT PUMP WATER HEATERS
ACCESSORIES FOR HEAT PUMP WATER HEATERS

GENERAL INFORMATION paragraphs 2, 3, 4, 6, 7 and 16 are applicable to this equipment.

This category covers products intended to heat water utilizing the heat of rejection from a mechanical refrigeration system and optional accessories for these products. These products are designed to restrict the outlet water temperature to a maximum of 85°C (185°F) under normal operation conditions and to a maximum of 99°C (210°F) under abnormal conditions.

See Heaters Certified for Canada (WBRR7) for additional information on heat pump pool and spa heaters.

HEATING AND COOLING UNITS
COOLING PORTIONS OF HEATING AND COOLING UNITS

GENERAL INFORMATION paragraphs 1A, 3, 4, 5, 6, 7, 9, 10, 12 and 16 are applicable to this equipment.

This category covers self-contained assemblies manufactured for installation as a package. They include all the necessary components needed for both heating and cooling. Heating is by gas-, oil-, or gas-oil-fired burner(s), and by incorporating a heat pump system. Cooling and heat-pump heating is by mechanical refrigeration with any rated cooling/heating capacity.

The information pertaining to safe placement is indicated in the individual Listings.

The name and amount of refrigerant, test pressure, and electrical rating appear on the unit.

A gas-fired heating portion included in this category is for use only in the same manufacturer's specified air conditioning or heat pump systems equipment as marked on the heating portion and as indicated in the individual Listings.

The basic standard used to investigate the gas heating portion of the products in this category with gas heating inputs up to and including 400,000 Btu/h (117.23 kW) is ANSI Z21.47/CSA 2.3, "Gas-Fired Central Furnaces." The basic standard used to investigate the gas heating portion of the products in this category with gas heating inputs over 400,000 Btu/h (117.23 kW) is CGA 3.2, "Industrial and Commercial Gas-Fired Package Furnaces."

The Gas-fired Listing Mark is provided either on a Listed heating and cooling unit or on a Listed gas-fired heating section or portion of a Listed heating and cooling unit.

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words "GAS-FIRED" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, the words "Gas Heating Portion," and

(a) for gas-fired heating portions with inputs up to and including 400,000 Btu/h (117.23 kW), the standard designation "ANS Z21.47(+) CSA 2.3(+)-(++) Central Furn"
(+) Suffix letter of latest addendum if applicable
(++) Issue year of latest addendum or standard

or

(b) for gas-fired heating portions with inputs over 400,000 Btu/h (117.23 kW), the standard designation "CGA 3.2-1976" and the product name "Central Furnace."

LIQUID CHILLERS, SELF-CONTAINED UNITS
LIQUID CHILLERS, COMPRESSOR-COOLER UNITS
AIR CONDITIONING LIQUID CHILLERS
SECTIONS OF AIR CONDITIONING LIQUID CHILLERS

GENERAL INFORMATION paragraphs 1A, 1D, 2, 3, 4, 5, 6, 7, 15 and 16 are applicable to this equipment.

This category covers equipment intended for cooling of liquid, such as water or water-antifreeze solutions. The equipment is intended primarily, but not exclusively for, air conditioning application.

Air conditioning liquid chillers rated 135,000 Btu/h or less are of the unitary type. Liquid chillers with a rated cooling capacity exceeding 135,000 Btu/h may be either self-contained units or compressor-cooler units.

Drinking water coolers, commercial processing water coolers, and other liquid chillers investigated only for commercial refrigeration applications other than air conditioning are covered under Refrigeration Equipment Certified for Canada (SCER7).

Absorption air conditioning equipment that utilizes hot fluid (such as gas, liquid or steam) as the direct energy source for cooling and heating is identified in the individual Listings as "Absorption Air Conditioning Equipment."

MECHANICAL DRAFT WATER COOLING TOWERS
ACCESSORIES FOR MECHANICAL DRAFT WATER COOLING TOWERS

GENERAL INFORMATION paragraphs 1G, 3, 4, 6, 7, 15 and 16 are applicable to this equipment.

This category covers equipment intended for use with water-cooled air conditioning and refrigeration equipment. The water used as a cooling medium may contain antifreeze, and is circulated through the tower via either a finned tube assembly or a system that is open to the atmosphere. The tower includes a motor-driven fan or blower and may also include circulation pumps.

Equipment investigated for use with Listed accessories, such as pump assemblies, is marked to identify the accessories and is also identified in the individual Listings.

REFRIGERANT CONDENSERS

GENERAL INFORMATION paragraphs 3, 4, 6, 7, 15 and 16 are applicable to this equipment.

This category covers finned tube assemblies incorporating a motor-driven fan that are intended to liquefy refrigerant vapor by removal of heat.

Evaporative or water-cooled devices are covered under Condensers, Refrigerant Certified for Canada (SLSV7).

ROOM AIR TERMINAL UNITS

GENERAL INFORMATION paragraphs 1G, 3, 4, 6, 7, 9, 10, and 12 through 16 inclusive are applicable to this equipment.

This category covers units designed to be connected to the terminal end of a single duct or duct system supplying air from a remotely located air-handling unit for the purpose of providing heating, ventilation and/or cooling.

The unit types include floor-mounted, wall-mounted, ceiling-hung, and wall- or ceiling-insert constructions.

Units incorporating electric heat have an automatic resetting temperature limiting control that is intended to protect against abnormal operating conditions and, in addition, each unit is provided with a replaceable thermal cutoff or a manually resettable temperature limiting control. In addition to CSA-C22.2 No. 236, the standard used to investigate units incorporating electric heat is CSA-C22.2 No. 155, "Electric Duct Heaters."

The proper installation of these units requires careful consideration of the individual manufacturer's design characteristics, taking into consideration the volume of air passing through the units and the temperature of the input air.

The manufacturer's application and installation instructions furnished with each unit should be consulted to determine the factors appropriate to the particular installation including required distances between the unit and turns in the duct, changes in duct sizes, air filters, humidifiers, etc. Unless these instructions specify other distances for horizontals or upflow installations, 1) turns in the duct on the inlet side of the unit should be at least 4 ft from the unit, 2) turns in the duct on the outlet side of the unit should be at least 2 ft from the unit, and 3) changes in duct size, air filters, humidifiers, etc. should be located at least 4 ft from either side of the unit.

Units incorporating electric heat may have provision for interlocking the air supply and the electric element circuit.

Units may include provision for a coil designed for cooling by refrigerant or chilled water, or heating by steam or hot water, or for combinations of such coils.

ROOM FAN HEATER UNITS

GENERAL INFORMATION paragraphs 1G, 3, 4, 6, 7, 8, 9, 10, and 12 through 16 inclusive are applicable to this equipment.

This category covers fixed appliances that include a motor-operated fan or blower and electric resistance heater, or an electrically heated heat exchanger.

These appliances are designed to serve a single room or space. Included are units similar to fan-coil units with electric resistance heaters but which are not provided with a refrigerant, steam or water coil, and units similar to air heaters, but which draw in air from outside the heated space. Air heaters are covered under Air Heaters, Room, Fixed and Location Dedicated Certified for Canada (KKWS7).

A room fan heater may be designed for free delivery of air to the room, or may be provided with a means for connection of a short extension duct. Representative types include floor-mounted, wall-mounted, ceiling-hung, and wall- or ceiling-insert (built-in) units.

Information concerning required installation clearances, etc. is designated in markings and/or installation instructions as indicated under **GENERAL INFORMATION**. This information also appears in the individual Listings.

SPECIAL PURPOSE AIR CONDITIONERS
SECTIONS OF SPECIAL PURPOSE AIR CONDITIONERS
ACCESSORIES FOR SPECIAL PURPOSE AIR CONDITIONERS

GENERAL INFORMATION paragraphs 1A, 1D, 1E, 1F, 2, 3, 4, 6, 7, 9, 12, 13, 14 and 16 are applicable to this equipment.

This category covers equipment designed for special purposes, such as environmental control of computer rooms.

This equipment consists of one or more factory-made sections, as described under **GENERAL INFORMATION**. Unless so indicated in the individual Listings, the evaporator blower is provided as part of the assembly, and may be an integral part of the evaporator section or be furnished as a separate section.

Computer room air conditioners are intended for installation in accordance with ANSI/NFPA 75, "Fire Protection of Information Technology Equipment." These air conditioners are generally installed on the raised floors of computer rooms and have not been investigated for connection to ducts unless so specified in the individual Listings.

Factory-installed electric heaters and humidifiers have been investigated for this application.

VENTILATING UNITS
SECTIONS OF VENTILATING UNITS

GENERAL INFORMATION paragraphs 1G, 3, 4, 6, 7, 8, 9, 10, and 12 through 16 inclusive are applicable to this equipment.

This category covers units that consist of electric resistance heaters and a motor-operated blower. The units may also incorporate means for evaporative cooling. These units are intended to supply heated and/or cooled air to commercial and industrial buildings from which air is being exhausted by other equipment. There is no provision for return-air circulation on these units.

Information concerning required installation clearances, etc. is designated in markings and/or installation instructions as indicated under **GENERAL INFORMATION**. This information also appears in the individual Listings.

MISCELLANEOUS HEATING AND COOLING EQUIPMENT

GENERAL INFORMATION paragraph 4 is applicable to this equipment.

This category covers miscellaneous heating and cooling equipment.

HEATING AND COOLING EQUIPMENT ACCESSORIES

GENERAL INFORMATION paragraph 4 is applicable to this equipment.

This category covers accessories intended for installation only on Listed heating and cooling equipment as designated in the individual Listings of the equipment and accessories. The accessories are intended primarily for field installation, but may be factory installed.

The equipment on which these accessories may be field installed is marked to indicate that it is Listed for use with the specific accessory as designated by model, catalog number, part number, etc. in this section. Markings on the equipment also indicate any changes in the equipment ratings with the accessory installed.

Information concerning field wiring connections, mounting location, installation clearances, etc., are marked on the accessory, and/or in detailed installation instructions accompanying each accessory.

The basic standards used to investigate products in this category are the standards applicable to the equipment on which the accessories are intended to be installed.

RELATED PRODUCTS

Products Verified for energy efficiency are covered under Heating and Cooling Equipment Verified for Energy Efficiency (ZYQL).

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DUCTLESS HEATING AND COOLING EQUIPMENT, LARGE, OPEN BUILDING CERTIFIED FOR CANADA (LZPG7)

GENERAL

This category covers ductless heating and cooling equipment intended to serve a single, large, open area, such as a warehouse. These are encased assemblies designed as a unit and intended as the prime source of heating, cooling and dehumidification.

Ductless Heating and Cooling Equipment, Large, Open Building Certified for Canada (LZPG7)–*Continued*

INSTALLATION

This equipment is rated 600 V ac or less and is intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

Ductless heating and cooling equipment is custom built to the customer's specifications. This equipment may be installed in the conditioned airspace or outdoors; when installed outdoors, provisions, such as a short duct, are provided for serving the adjacent space. This equipment has a heating range from 10,000 to 18,000,000 Btu's, a cooling capacity range up to 1,000 tons, and an air circulation of 1,000 to 200,000 cfm. The heat sources include electric, gas, hot water, oil or steam. Each unit provided with electric, gas-fired or oil-fired heat incorporates integral limit controls intended to protect against abnormal operating conditions, which might arise from blocked inlets, blocked outlets, or fan failures. The limit control will not allow a discharge air temperature during all the normal, abnormal and back-up tests of 150°F (65.56°C).

After assembly on the production line, each unit will have tests conducted before it leaves the factory, and additional tests will be performed again once the unit has been installed a the site by a factory representative.

Ductless heating and cooling equipment is made up of three basic modules and optional extensions that are field erected in a stacked configuration. By design, the equipment consists of factory-built subassemblies or modules and furnished with appropriate controls and detailed instructions to accommodate assembly and installation with applicable codes.

The lowermost module is the **air base**, containing one or more propeller fans lying horizontal and, if specified, optional inlet filters. The air base unit has prewired power and control panel(s). These panels contain a power disconnect switch and motor starters, control relays and temperature controls. The selector controls and toggle switches are generally located inside of the control panel or vertically mounted on the side.

The second module is the **heat/cool section** that may consist of a cooling portion and/or a heating portion. The cooling portion consists of a refrigeration or chilled water heat exchanger coil. The heating portion may consist of one of the following options: (1) a certified commercial/industrial gas burner (see Commercial/Industrial Gas Burners Certified for Canada [KXWT7]), oil burner (see Oil Burners Certified for Canada [KYXZ7]) or gas-oil burner (see Gas-Oil Burners Certified for Canada [KYKR7]) with an air-to-air heat exchanger, or (2) a hot water or steam heat exchanger. The boiler may be furnished either with an integral burner or intended for installation with a factory-built burner to accommodate the boiler as indicated in the individual certifications.

Normally the third module in the stacked configuration is the **air outlet** module; however, an **extension(s)** is frequently used to raise the discharge above items that surround the unit. The air outlet module is the uppermost module of the stacked configuration and may contain optional louvers that are capable of directing air in a specific direction.

This equipment is intended to employ other equipment and components, which are separately certified. Each piece of equipment has been factory tested prior to leaving the manufacturer's facility, and a factory-trained technician conducts the startup of each unit.

For fuel-fired heaters, the minimum clearance to combustible materials is 48 in. from the front side (burner side) and 18 in. from all other sides, including the top side. Fuel-fired heaters should not be mounted directly on a combustible floor.

For electric-duct-heater-supplied units, the minimum clearance to combustible materials is 48 in. from the front side (control panel side) and 18 in. from all other sides, including the top side. Electric-duct-heater-supplied units should not be mounted directly on a combustible floor.

Unless otherwise specified in the individual certifications and product marking, the unit may be installed on combustible flooring.

In units rated more than 48 A and employing electric resistance heaters, the loads are subdivided so that each load does not exceed 48 A and is protected at no more than 60 A. The overcurrent protective devices are either included as an integral part of the unit or are furnished as a separate assembly. If the protective devices are furnished as a separate assembly, the unit is marked to specify that it be used with that particular separate assembly. Other certified separate assemblies, as referenced on the equipment marking, may also be used.

Equipment suitable for outdoor installation is so marked. Equipment not marked as suitable for outdoor installation is for indoor use only.

Wiring Termination Provisions

For permanently connected equipment, the wiring termination provisions are based on tests during product investigation, and Table 2 of the CEC as follows:

1. 75°C insulated conductors at the 75°C ampacities.
2. 90°C insulated conductors at the 75°C ampacities, in which case the equipment is marked for 90°C conductors.
3. Insulation temperature rating of 75 or 90°C and wire size as marked on the unit.

Ductless Heating and Cooling Equipment, Large, Open Building Certified for Canada (LZPG7)−*Continued*

Also see **INSTALLATION REQUIREMENTS** (Appliance and Utilization Equipment Terminations) under Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and **ELECTRICAL INSTALLATIONS** under Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

Installation Codes

Equipment with a gas-, oil-, or gas-oil-fired burner(s) is intended to be installed in accordance with the appropriate standards as required by the province in which the appliance is being installed, such as CSA B149.1, ''Natural Gas and Propane Installation Code,'' CSA B139, ''Installation Code for Oil-Burning Equipment,'' CAN/CSA A405, ''Design and Construction of Masonry Chimneys and Fireplaces,'' and the ''National Building Code of Canada.''

Equipment is marked with the refrigerant type used and some units may employ alternative refrigerants that are not currently listed in CSA B52, ''Mechanical Refrigeration Code,'' but are included in ANSI/ASHRAE 34, ''Designation and Safety Classification of Refrigerants.'' The use of these alternative refrigerants resulted from environmental restrictions on some refrigerants currently listed in the code. Using requirements as applied to specified refrigerants, in CSA B52 UL's Certification Reports, available from the manufacturer, identify installation requirements applicable to the alternative refrigerants in the same manner as shown in ANSI/ASHRAE 15, ''Safety Standard for Refrigeration Systems,'' for currently used refrigerants. The refrigerants are classified A1 or A1/A1 by ANSI/ASHRAE 15 and have been determined to be nonflammable or practically nonflammable.

Wiring Diagrams

The proper method of electrical installation (number of branch circuits, control wiring connections, etc.) is shown on the wiring diagram and/or marking attached to the equipment.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 236 (2005), ''Heating and Cooling Equipment.''

This category also covers products that have been investigated in accordance with CAN/CSA-E60335-2-40 (2001), ''Safety of Household and Similar Electrical Appliances – Part 2: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.''

Alternatively, single-phase appliances rated not more than 250 V, and all other appliances rated not more than 600 V are investigated to CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Electrical Appliances, Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60335-2-40 (2012), ''Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.''

The basic standard used to investigate duct heaters is CSA-C22.2 No. 155 (1986), ''Electric Duct Heaters.''

The basic standard used to investigate commercial/industrial gas burners is the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA/CGA 3.4 (1973), ''Industrial and Commercial Gas-Fired Conversion Burners.''

The basic standard used to investigate oil burners is the current edition and effective addenda, Amendments, Bulletins, Notices, Technical Information Letters thereto of CSA B140.2.1 (1990), ''Atomizing-Type Oil Burners.''

The basic standards used to investigate gas-oil burners with gas-fired inputs up to and including 400,000 Btu/h (117.23 kW) are the current edition and effective addenda thereto of ANSI Z21.17/CSA 2.7 (1998), ''Domestic Gas Conversion Burners, '' and the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA B140.2.1 (1990).

The basic standards used to investigate commercial/industrial gas-oil burners with gas-fired inputs over 400,000 Btu/h (117.23 kW) are the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA/CGA 3.4 (1973), and the current edition and effective addenda, Amendments, Bulletins, Notices and Technical Information Letters thereto of CSA B140.2.1 (1990).

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Ductless, Large, Open Building Heating and Cooling Equipment.''

A separate Listing Mark is provided on Listed commercial/industrial gas burners (see Commercial/Industrial Gas Burners Certified for Canada [KXWT7]), oil burners (see Oil Burners Certified for Canada [KYKZ7]) or gas-oil burners (see Gas-Oil Burners Certified for Canada [KYKR7]) when employed in the heating module of the ductless, large, open building heating and cooling equipment. Refer to the individual product categories for the appropriate Listing Marks.

* *

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HEATING AND COOLING EQUIPMENT RETROFIT ASSEMBLIES CERTIFIED FOR USE WITH OTHER MANUFACTURERS' EQUIPMENT CERTIFIED FOR CANADA (LZPK7)

USE AND INSTALLATION

This category covers retrofit assemblies consisting of parts and/or subassemblies intended for field installation by qualified service personnel in UL-certified heating and cooling equipment (see Heating and Cooling Equipment Certified for Canada [LZFE7]) that involves modifying, revising, or replacing of parts and/or subassemblies internal to the certified equipment. These products have been investigated to determine that, when installed in accordance with the manufacturer's installation instructions, they do not adversely affect the operation of the specified equipment.

Installation instructions are provided with each assembly and include information identifying the equipment into which the assembly may be installed. A generic list of equipment, when the specific parameters of the installation are understood by the installer, may be provided. The installation instructions provide these detailed parameters and indicate the suitable type of construction. All parts and materials necessary to accomplish the installation are included with the retrofit assembly.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 236 (2005), ''Heating and Cooling Equipment.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RETROFIT ASSEMBLY FOR INSTALLATION IN EQUIPMENT IDENTIFIED IN THE MANUFACTURER'S INSTALLATION INSTRUCTIONS

Control No.

The Classification Mark appears on the largest part of the retrofit assembly that can be readily assembled by an installer on site. Each major part of the assembly is identified by appropriate markings.

* *

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HEATING AND COOLING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (LZHA7)

GENERAL

This category covers devices that include a motor-operated fan or blower together with a cooling coil, a heating coil, or both, and may also include an electric heater. The fan or blower is designed to recirculate air or to draw in outside air, or both. The coil may be designed for refrigerant cooling, for refrigerant heating, for chilled water cooling, for hot water heating, for steam heating, or for combinations of these functions.

HEATING AND COOLING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (LZHA7)

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 236, ''Heating and Cooling Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Heating and Cooling Equipment for Use in Hazardous Locations.''

* *

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HEATING, COOLING AND VENTILATING EQUIPMENT CERTIFIED FOR CANADA (LZLZ7)

GENERAL

This category covers fan-coil units, plenum air-terminal units, room air-terminal units, room fan heater units, and other equipment intended for comfort heating, cooling and ventilation. This equipment is rated 600 V or less.

This equipment is intended for use as part of a complete system and, when installed, may be associated with other equipment and components that are separately Listed. This equipment has not been investigated from the standpoint of operation when combined with other equipment in a complete system assembled in the field, unless indicated in individual Listings for the other equipment.

Where a clearance is required to be maintained between the unit or attached duct work and combustible constructions, the clearance is designated in the individual Listings, and is also marked on the unit. Unless otherwise indicated, the designated clearances (other than ''zero'') are based on tests of units with uninsulated sheet-metal ducts and plenum attached. Under these conditions, temperatures below established criteria have been measured on a wooden test enclosure, representing combustible construction, spaced at the specified clearance (air) from the unit, ducts and plenum.

Unless specified otherwise in the individual Listings and product markings, the unit may be installed on combustible flooring.

Attic-type units are so indicated in the individual Listings. Such units are suitable for installation in an attic or comparable normally unoccupied location as designated by the product marking or instructions provided with the unit.

Separately shipped steam, hot water, or refrigerant coils suitable for field installation in conjunction with heating, cooling and ventilating equipment are identified by (1) the type or model designation of the coil, and (2) the type or model designation of the heating, cooling and ventilating equipment with which it is suitable.

In units rated more than 48 A and employing electric resistance heaters, the loads are subdivided so that each load does not exceed 48 A and is protected at not more than 60 A. The overcurrent protective devices are either included as an integral part of the unit or are furnished as a separate assembly. If the protective devices are furnished as a separate assembly, the unit is marked to specify that it is to be used with that particular separate assembly. For such separate assemblies which are specifically Listed for use with electric space heaters provided as part of this equipment, see **GENERAL PURPOSE CONTROL PANELS FOR ELECTRIC SPACE HEATING EQUIPMENT** under Heating and Cooling Equipment Certified for Canada (LZFE7). Other Listed separate assemblies, as referenced on the equipment marking, may also be used.

PRODUCT MARKINGS

Equipment suitable for outdoor installation is so marked. Equipment not marked as suitable for outdoor installation is intended for indoor use only.

* *

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ELECTRIC HEATER ASSEMBLIES CERTIFIED FOR USE ON SPECIFIED EQUIPMENT CERTIFIED FOR CANADA (LZPU7)

USE AND INSTALLATION

This category covers electric heater assemblies intended for field installation on specific certified heating and cooling equipment (see Heating and Cooling Equipment Certified for Canada [LZFE7]) as identified by a marking on the electric heater assembly. The accessories are intended to be installed in accordance with the installation instructions packaged with the electric heater assembly. All parts and materials necessary to accomplish the installation are included with the electric heater assembly.

The Certification Mark indicates that the heater assembly has been investigated and found suitable for use in combination with the specified certified equipment and that this Mark supplements or supersedes any markings related to add-on heater assemblies marked on the certified equipment.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling and Ventilating Equipment Certified for Canada (LZLZ7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 236 (2005), ''Heating and Cooling Equipment,'' in addition to the standards applicable to the heating and cooling equipment on which the heater assemblies are intended to be installed.

Alternatively, single-phase appliances rated not more than 250 V, and all other appliances rated not more than 600 V are investigated to CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Electrical Appliances, Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60335-2-40 (2012), ''Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.''

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ELECTRIC HEATER ASSEMBLY
FOR USE WITH * LISTED MODEL **
***

Control No.

* Heating and cooling equipment Listee's name
** Heating and cooling equipment Listee's model number
*** Category of Listed equipment

* *

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HEAT-RECOVERY VENTILATORS, DUCTED CERTIFIED FOR CANADA (LZTW7)

USE AND INSTALLATION

This category covers fixed equipment intended to remove air from buildings, replace it with fresh outside air and, in the process, transfer heat from the warmer to the colder air. The equipment is intended to be connected to duct systems that interconnect rooms or spaces within buildings for exhausting the indoor air and/or distributing the outdoor air. These ventilators are intended to be installed in accordance with the installation instructions packaged with the equipment and CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

RELATED PRODUCTS

Nonducted heat-recovery ventilators are covered under Heat-recovery Ventilators, Nonducted Certified for Canada (LZUU7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling and Ventilating Equipment Certified for Canada (LZLZ7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113, ''Fans and Ventilators.''

Heat-recovery Ventilators, Ducted Certified for Canada (LZTW7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Ducted Heat Recovery Ventilator'' or ''Accessory for Ducted Heat Recovery Ventilator.''

* *

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HEAT-RECOVERY VENTILATORS, NONDUCTED CERTIFIED FOR CANADA (LZUU7)

USE AND INSTALLATION

This category covers stationary or fixed equipment intended to remove air from buildings, replace it with fresh outside air and, in the process, transfer heat from the warmer to the colder air. The equipment is not intended to be connected to a duct system, other than the short-duct runs necessary to bring air to and from the equipment.

RELATED PRODUCTS

Equipment designed to be connected to ducts that interconnect rooms or spaces within buildings for exhausting the indoor air and/or distributing the outdoor air is covered under Heat-recovery Ventilators, Ducted Certified for Canada (LZTW7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling and Ventilating Equipment Certified for Canada (LZLZ7), Electrical Equipment for Use in Ordinary Locations Certified for Canada AALZ7 and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113, ''Fans and Ventilators.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Non-Ducted Heat Recovery Ventilator.''

* *

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HEATING AND HEATING-COOLING APPLIANCE ACCESSORIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (LZZA7)

This category covers accessories for use in the assembly or installation of air conditioning, heating, cooling or refrigeration equipment, and similar applications.

HEATING AND HEATING-COOLING APPLIANCE ACCESSORIES CERTIFIED FOR CANADA (LZZX7)

This category covers accessories for use in the assembly or installation of air conditioning heating, cooling or refrigeration equipment, and similar applications.

CONTROLS, LIMIT CERTIFIED FOR CANADA (MBPR7)

GENERAL

Controls, Limit Certified for Canada (MBPR7)−*Continued*

This category covers controls that are essentially switches operated by a change in liquid level, pressure or temperature. They are intended primarily for use with air conditioning and heating equipment, although not limited to such specific applications. They are intended for household, commercial or industrial use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

The limit controls may be provided as complete assemblies or they may consist of separate control and sensor sections as indicated in the individual certifications.

Controls for heating equipment — Controls intended for heating equipment are suitable for use with systems equipped with coal stokers, electric heaters, gas burners, or oil burners.

Limit controls and low-water shutoffs — Limit controls and low-water shutoffs should be of the type that opens the circuit when an unsafe condition is approached.

Control testing and specifications — The suitability and durability of the design and construction, the practicability of installation and use, and the accuracy and reliability of operation of the equipment are determined by appropriate examinations and tests.

When selecting controls, the temperature or pressure range desired and whether automatic or manual reset is required should be specified. The identification of this equipment and its primary function serves as a guide for specifying or ordering. The manufacturer's catalog should be consulted for detailed specifications.

Groups — Limit controls are grouped according to their primary functions as follows:

- **Group A** – Controls operated by a change in pressure intended primarily to limit the pressure in steam heating systems.
- **Group B** – Controls operated by a change in temperature intended primarily to limit the temperature in hot water heating systems and water heaters.
- **Group C** – Controls operated by a change in temperature intended primarily to limit the temperature in supply ducts of air conditioning and warm-air heating systems. May also be used to regulate air temperature in ovens and similar applications.
- **Group D** – Controls operated by a change in temperature intended to regulate the operation of air circulating fans in air conditioning and warm-air heating systems.
- **Group E** – Controls operated by a change in temperature for installation in the return air duct of air conditioning and ventilating systems to automatically shut off the fans when the temperature of the air in the system becomes excessive.
- **Group F** – Controls operated by a change in temperature for installation in the smoke pipe of stoker-fired heating plants to prevent feeding of green coal when the fire is out.
- **Group G** – Controls operated by a change in liquid level for boilers to prevent operation of the heating appliance in the event of low water in the boiler.
- **Group H** – Controls operated by a change in liquid level to regulate the delivery of feed water to boilers.

If a single control combines the functions of two groups its designation is a combination of the two groups. For example, a combination warm-air limit control and fan switch of the automatic reset type is classified under ''Group C, D.''

Manual reset controls — An ''M1'' or ''M2'' marking as a suffix to the group designation indicates the following manual reset functions are provided:

- **M1** – Controls that automatically reset to the ''closed'' position after normal operating conditions have been restored if the reset means is held in the ''reset'' position.
- **M2** – Controls that do not automatically reset to the ''closed'' position if the reset means is held in the ''reset'' position.

PRODUCT MARKINGS

Limit controls are marked with the company's name or trademark, a distinctive catalog number, and the electrical ratings. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Controls for refrigeration and air conditioning (except remote, wall-mounted room thermostats) are covered under Controllers, Refrigeration Certified for Canada (SDFY7).

Electrical temperature controls for heating equipment, motor operators, and wall-mounted room thermostats are covered under Temperature-indicating and Regulating Equipment Certified for Canada (XAPX7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

Controls, Limit Certified for Canada (MBPR7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 24, "Temperature-Indicating and -Regulating Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Limit Control" or "Section of Limit Control," or other appropriate product name as shown in the individual Listings.

* *

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CONTROLS, PRIMARY SAFETY CERTIFIED FOR CANADA (MCCZ7)

GENERAL

This category covers primary safety controls intended for use on gas-, gas-oil- or oil-burning appliances to program and monitor the operation of the burner. They are intended for household, commercial or industrial use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

The primary safety control may consist of several sections that when assembled together form a complete primary safety control. These sections may include a wiring subbase, a chassis, programming module, flame amplifier and combustion detector as indicated in the individual certifications. When a safety control consists of more than one section, the combination of sections specifically certified is intended to be employed unless otherwise specified on the appliance marking.

PRODUCT MARKINGS

Primary safety controls are marked with the company's name or trademark, a distinctive catalog number, and the electrical ratings. Additional markings may be required based on the individual certification reports.

These products are marked with the following (or equivalent) statement: "Important: For Proper Operation Refer To Manufacturer's Installation Instructions To Determine The Primary Safety Control Sections That Comprise A Listed Primary Safety Control System."

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 199, "Combustion Safety Controls and Solid-State Igniters for Gas- and Oil- Burning Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Primary Safety Control" or "Section of Primary Safety Control," or other appropriate product name as shown in the individual Listings.

* *

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DRAFT EQUIPMENT CERTIFIED FOR CANADA (MCQX7)

USE AND INSTALLATION

This category covers draft regulators (automatic dampers), automatic damper controls, draft fans, and similar equipment, intended to assist in maintaining the desired combustion chamber draft in heating equipment.

Draft regulators are intended for installation in the breeching or flue pipe of heating plants to regulate the draft while the appliance is being fired. They are used where a constant draft is desired, but function only when the draft in the chimney is greater than the draft for which the draft regulator is adjusted.

Automatic damper controls are designed to automatically regulate the position of dampers installed in the stack or air intake of heating plants.

Draft fans are for installation in the flue pipe adjacent to the heating appliance or to the chimney to induce a draft to supplement the natural draft created by the chimney. When automatically operated burners are used in installations equipped with induced draft fans, means should be provided to immediately shut off the fuel supply upon fan failure.

Draft Equipment Certified for Canada (MCQX7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C378 (1975), "Guide for the Investigation of Draft Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Draft Equipment."

* *

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DRAFT EQUIPMENT CERTIFIED FOR USE WITH SPECIFIED APPLIANCES CERTIFIED FOR CANADA (MCQZ7)

USE AND INSTALLATION

This category covers draft equipment intended for field installation with specific oil-fired or automatic-feed solid-fuel-fired heating appliances as identified in the individual certifications.

Draft equipment includes draft regulators (automatic dampers), draft fans, and similar equipment, as indicated in the individual certifications, intended to assist in maintaining the desired combustion chamber draft in heating equipment.

Draft regulators are intended for installation in the breeching or flue pipe of heating plants to regulate the draft while the appliance is being fired. They are used where a constant draft is desired, but function only when the draft in the chimney is greater than the draft for which the draft regulator is adjusted.

Draft fans are intended for installation in the flue pipe adjacent to the heating appliance or to the chimney or at the chimney terminus to provide a draft or to supplement the natural draft created by the chimney. When automatically operated burners are used in installations equipped with draft fans, means should be provided to immediately shut off the fuel supply upon fan failure.

Draft equipment is intended to be installed in accordance with the instructions furnished with the draft equipment and with the heating appliance, in addition to CAN/CSA-B365, "Installation Code for Solid-Fuel-Burning Appliances and Equipment."

Draft equipment is intended to be installed only on specific properly operating heating appliances certified in accordance with nationally recognized safety standards, and equipped with required controls and other safety features. The installation is intended to be made by a qualified agency (one who is engaged in, is responsible for, and is thoroughly familiar with the installation and operation of the appropriate fuel-burning appliances and draft equipment involved, who is experienced in such work, familiar with all precautions required, and has complied with all requirements of the Authority Having Jurisdiction).

These products have been investigated to determine that, when installed in accordance with the manufacturer's instructions, they do not adversely affect the operation of the heating appliance with which they are installed.

RELATED PRODUCTS

See Solid-fuel-fired Boiler Assemblies Certified for Canada (KXBW7), Solid-fuel-fired Supplementary Central Furnaces Certified for Canada (LBHZ7) and Solid-fuel-fired Water Heaters Certified for Canada (LVHO7).

ADDITIONAL INFORMATION

For additional information, see Heating and Heating-Cooling Appliance Accessories Certified for Canada (LZZX7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C378, "Guide for the Investigation of Draft Equipment," CSA-C22.2 No. 113, "Fans and Ventilators," CAN/ULC-S609, "Low Temperature Vents Type L," ULC/ORD-C441, "Pellet Vents," CAN/CSA-B366.1, "Solid-Fuel-Fired Central Heating Appliances," and ULC-S627, "Space Heaters for Use with Solid Fuels."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification

Draft Equipment Certified for Use with Specified Appliances Certified for Canada (MCQZ7)−*Continued*

and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

DRAFT EQUIPMENT
FOR USE WITH SPECIFIC UL LISTED APPLIANCES
AS SPECIFIED IN THE INDIVIDUAL CLASSIFICATIONS AND
APPLIANCE MANUFACTURERS' INSTRUCTIONS
Control No.

* *

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OIL HEATERS, ELECTRIC CERTIFIED FOR CANADA (MDST7)

USE

This category covers electric oil heaters intended for heating combustible liquids, such as fuel oil. They may be immersion elements for insertion into piping or tanks, reservoir units consisting of a heating element and liquid reservoir, or systems as described in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 0.4, ''Bonding of Electrical Equipment,'' CSA-C22.2 No. 72, ''Heater Elements,'' and CSA-C22.2 No. 88, ''Industrial Heating Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Oil Heater, Reservoir Unit,'' ''Electric Oil Heater, Immersion Element'' or ''Electric Oil Heater, Immersion Element with Oil Reservoir.'' The statement ''___ psi max'' is also included with the product name if not marked elsewhere on the heater.

* *

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POWER-OPERATED PUMPS CERTIFIED FOR CANADA (MEGR7)

USE

This category covers power-operated pumps, including oil pumps and air pumps (compressors). These pumps are intended for use in the assembly of power-operated, oil-burning appliances in accordance with ANSI/NFPA 31, ''Installation of Oil-Burning Equipment,'' or CAN/CSA-B139 (1991), ''Installation Code for Oil-Burning Equipment,'' as appropriate.

This category includes pumps intended for use with waste crankcase oils. Waste crankcase oils may vary considerably in their chemical and physical properties and normally consist of a mixture of different grades of used automotive (crankcase) oil, transmission oil, brake fluid, and gasoline. For the safe handling, storage, and burning of waste crankcase oils, reference should be made to ANSI/NFPA 31 or CAN/CSA-B139 (1991), as appropriate.

This category covers only the pumping unit, integral valves, strainer, and piping included in the assembly and, unless indicated otherwise in the individual Listings, does not attest to the acceptability of the electric motor or any part of the system to which the pump may be connected.

RELATED PRODUCTS

See Pumps, Power Operated, Flammable Liquid Certified for Canada (RCRX7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C343, ''Guide for the Investigation of Pumps for Oil-Burning Appliances.''

Power-operated Pumps Certified for Canada (MEGR7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Pump'' or ''Fuel Unit,'' and the statement ''For Air * psi max,'' ''For No. ** Fuel Oil * psi max,'' or ''For Waste Oil * max,'' or, for other oils as specified in the individual Listings, ''* psi max.'' The statement ''___ gph at ___ psi'' is also included on an oil pump and strainer combination unless included in installation instructions or marked elsewhere on the pump.

* Pressure rating not required if marked elsewhere on the pump

** Grade of fuel oil not required if pump is Listed for all grades (No. 6 or lighter)

* *

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STRAINERS, OIL BURNER CERTIFIED FOR CANADA (METZ7)

USE

This category covers strainers intended for use in the assembly of oil-burning equipment and at the pressures indicated in the individual certifications. The type of fuel oil for which a strainer is certified is indicated in the individual certifications. These devices are designated as ''strainers,'' however, they may also be designated as ''filters'' according to the common terminology of the industry

RELATED PRODUCTS

Strainers intended for use in the assembly of appliances, or in piping, handling gases or liquids, are covered under Strainers Certified for Canada (VXYV7).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C331, ''Guide for the Investigation of Strainers for Flammable Fluids and Anhydrous Ammonia,'' and CSA B140.0, ''Oil-Burning Equipment: General Requirements.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Strainer,'' and the statement ''For No. ___ Oil or Lighter, * kPa max.''

* Pressure rating not required if marked elsewhere on the strainer

* *

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SWITCHES CERTIFIED FOR CANADA (MFHX7)

GENERAL

This category covers switches designed specifically for use in conjunction with heating and cooling appliances. These switches include air-operated, float-operated, pressure-operated, thermostatically operated, etc., electric switching devices, as indicated in the individual certifications. They are intended for household, commercial and industrial use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Unless otherwise indicated in the individual certifications, these switches are intended for use at temperatures not exceeding 25°C (77°F).

PRODUCT MARKINGS

Switches are marked with the company's name or trademark, a distinctive catalog number, and the electrical ratings. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Switches Certified for Canada (MFHX7)−*Continued*

Controls for refrigeration and air conditioning (except remote, wall-mounted room thermostats) are covered under Controllers, Refrigeration Certified for Canada (SDFY7).

Electrical temperature controls for heating equipment, motor operators, and wall-mounted room thermostats are covered under Temperature-indicating and -Regulating Equipment Certified for Canada (XAPX7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 24, ''Temperature-Indicating and -Regulating Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Switch for Heating and Cooling Appliances,'' ''Heating/Cooling Appliance Switch'' or ''Air- (or Float-, Pressure-, etc., as appropriate) operated Switch,'' or other appropriate product name as shown in the individual Listings.

* *

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VALVES CERTIFIED FOR CANADA (MFVV7)

This category covers valves designed specifically for use in conjunction with heating and cooling appliances.

The type of fluid for which a valve has been investigated is indicated in the individual Listings by the following symbols:

A – Air or nontoxic, nonflammable gases
Ac – Acetylene
F – Common refrigerants, except ammonia
FA – Common refrigerants, including ammonia
G – City gas supplied by public utilities
Ga – Gasoline
LP – Liquefied petroleum gases
02 – Nos. 1 and 2 fuel oils, oils having viscosities not more than 40, SU at 100°F
04 – No. 4 fuel oil, oils having viscosities from 40 to 125, SU at 100°F
05 – No. 5 fuel oil, oils having viscosities of 125, SU at 100°F, to 40, SF at 122°F
06 – No. 6 fuel oil, oils having viscosities from 40 to 300, SF at 122°F
Ox – Oxygen
S – Steam
W – Water or other aqueous nonflammable liquids

* *

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Gas-appliance Pressure Regulators Certified for Canada (MGXY7)

USE AND INSTALLATION

This category covers gas-appliance pressure regulators, which are not part of a combination control, intended for application on gas appliances. They are for use with natural, manufactured and mixed gases, liquefied petroleum (LP) gases and LP-gas/air mixtures as indicated in the individual certifidations.

These valves are intended to be installed and used in accordance with the manufacturer's instructions, which include the mounting classifications.

These valves are not intended for use in building piping systems.

ADDITIONAL INFORMATION

For additional information, see Valves Certified for Canada (MFVV7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.18/CSA 6.3 (2007), ''Gas Appliance Pressure Regulators.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Gas Appliance Pressure Regulator.''

Gas-appliance Pressure Regulators Certified for Canada (MGXY7)−*Continued*

* *

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Manual Valves Certified for Canada (MHKZ7)

USE

This category covers manually operated valves intended specifically for use with gas- or oil-burning equipment:

Metering valves are intended primarily for use in the burner fuel supply line to manually regulate the flow of fuel to the burner.

Shutoff valves are intended for use in the burner supply line to manually shut off the flow of fuel to the burner.

Three-way valves are intended for use in burner installations with two interconnected sources of fuel supply to allow fuel to be admitted to the burner from only one source at a time.

The type of fluid for which a valve has been investigated is designated in accordance with the symbols referenced under Valves Certified for Canada (MFVV7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C842, ''Guide for the Investigation of Valves for Flammable and Combustible Fluids.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Manual Valve,'' or other appropriate product name as shown in the individual Listings. The statement ''___ kPa max'' is also included if not marked elsewhere on the valve.

* *

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Manually-operated Gas Valves for Appliances, Appliance Connector Valves and Hose-end Valves Certified for Canada (MHLS7)

USE AND INSTALLATION

This category covers manually operated gas valves, not exceeding 4 in. (102 mm) pipe size, pilot shutoff valves for installation in heating appliances, such as boilers, furnaces, heaters, ovens, water heaters, incinerators, etc., and latching-type valves.

Manually operated gas valves include appliance main gas valves, gas burner valves, appliance connector valves, ''delta c'' valves, hose-end valves, and pilot adjustment valves.

The valves are intended to be installed and used in accordance with the manufacturer's instructions.

These valves are not intended for use in building piping systems.

ADDITIONAL INFORMATION

For additional information, see Valves Certified for Canada (MFVV7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.15/CGA 9.1, ''Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products

Manually-operated Gas Valves for Appliances, Appliance Connector Valves and Hose-end Valves Certified for Canada (MHLS7)−*Continued*

manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Appliance Main Gas Valve," "Gas Burner Valve," "Appliance Connector Valve," "Delta C Valve," "Hose-end Valve," "Latching-type Valve," "Pilot Adjustment Valve."

The statement "1/2 psi max" is also included if not marked elsewhere on the valve.

* *

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SPECIALTY HEATING AND HEATING-COOLING APPLIANCE ACCESSORIES CERTIFIED FOR CANADA (MJAT7)

GENERAL

This category covers heat reclaimers, analyzers, controls, venting systems, and heat exchangers intended primarily for accessory use in gas-, oil,- and solid-fuel-fired heating and cooling appliances.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate heat reclaimers and heat exchangers in this category is CAN/CSA-C22.2 No. 236, "Heating and Cooling Equipment," CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment," and/or CSA B55.2 (2012), "Drain Water Heat Recovery Units."

The basic standards used to investigate appliance-accessory controls in this category are CAN/CSA-E60730-1, "Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements," CSA-C22.2 No. 24, "Temperature-Indicating and -Regulating Equipment," and CSA-C22.2 No. 199, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Automatic Burner Ignition Systems and Components."

The basic standard used to investigate oil-appliance accessories in this category is ULC/ORD-C331, "Guide for the Investigation of Strainers for Flammable Fluids and Anhydrous Ammonia," and/or CSA B140.0, "Oil-Burning Equipment: General Requirements."

The basic standard used to investigate direct-venting-system products in this category is CSA 2.33, "Vented Gas Fireplace Heaters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name as shown in the individual Listings.

The statement "For No. ___ Oil or Lighter, ___ °C (and/or °F), ___ kPa (and/or psig) max" is also included on swivel connectors.

* *

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MEDICAL EQUIPMENT AND SYSTEMS CERTIFIED FOR CANADA (MDAA7)

GENERAL

This category covers medical equipment and systems investigated to CAN/CSA-C22.2 No. 60601-1 (2008), "Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance."

The products are divided into separate categories and based on common aspects, including function, energy characteristics and test parameters. These product categories are associated with one or more Particular Standards.

If a device falls within the scope of a Particular Standard, the individual certification is covered under the product category containing that standard. In instances where a device falls within the scope of more than one Particular Standard, the individual certification is covered under the product category most closely associated with the device.

This equipment has been Classified with respect to the requirements in the General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) and the Particular and/or Collateral Standards to which the equipment has been investigated, unless specifically exempted in the individual application.

IECEE Operational and Ruling Document OD-2044, "Guidance for the Evaluation of Risk Management in Medical Electrical Equipment," is used in the assessment of the manufacturer's risk management system.

The wiring methods for installation of these products are covered by CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). The individual units of a system may be designed to be interconnected by means of one or more of the wiring methods outlined in the CEC.

The nature of some products, such as X-ray, nuclear imaging, and magnetic resonance equipment, is such that it involves features of installation and use not ordinarily presented in utilization equipment. Such features are covered in the manufacturer's installation instructions. Installation must, if possible, be made in a room or compartment in which provision is made to prevent fire or injury to persons and be in accordance with the manufacturer's installation instructions furnished with the equipment and the requirements of the Authorities Having Jurisdiction.

X-radiation safety and performance requirements are regulated by Health Canada. Compliance with the applicable regulations under the conditions of normal and abnormal operation has not been investigated.

Some of the individual Classifications are predicated on the provision of one of two alternate attachment plugs, specifically referred to in Attachment Plugs, Fuseless Certified for Canada (AXUT7). One is a locking type identified by the marking "Hospital Only," and the other is a nonlocking type ANSI Standard-configuration grounding type identified by the marking "Hospital Grade" and a green dot on the body. The identification is visible after installation on the flexible cord. Medical devices intended for use with oxygen are labeled as such (which may be included in the documents accompanying the devices). It is not possible to make devices such as these inherently safe from external sources of ignition. This hazard is greatly increased by the presence of oxygen, which makes materials easier to ignite and greatly increases the burning rate. Accordingly, for safety, it is essential that all possible sources of ignition be kept away from these devices. Possible sources of ignition against which precautions should be taken include open flames, matches, cigarettes, accumulations of static electricity, and reducing valves on oxygen tanks which occasionally project flame and sparks due to ignition or explosion of rubber valve seats.

SYSTEMS

UL offers a service that investigates the combination of a medical device with other medical devices and/or nonmedically-investigated products (e.g., information technology equipment, such as a printer). While UL also certifies individual medical devices it does not contend that any combination of UL-certified devices results in a compliant system. A UL-certified system is identified as such as part of its published Classification. The system identification, as well as the parts comprising the system, is identified, including optional parts. UL-certified systems have been found compliant with the systems requirements specified in the General Standard.

CEC COMPLIANCE

All devices and systems have been found to be compatible for connection to CEC wiring systems. Part of this involves an evaluation of the documentation that accompanies the device or system, such as the installation instructions. Additionally, for systems with multiple component parts, the interconnecting wiring has been investigated for compliance with the stated standards and includes an evaluation of abuse levels, as well as circuit separation under both normal and single fault conditions.

REFERENCE MATERIAL

In many areas of the world, including Canada, the placement of medical devices in the marketplace is subject to legal market-entry requirements that are set and enforced by central governments. In Canada, this is Health Canada. Compliance with standards is often used to help substantiate a manufacturer's claim of compliance with legal market-entry requirements, especially with respect to safety and essential performance. Note that compliance with safety and essential performance requirements alone is not sufficient to satisfy these legal market-entry requirements. Even within the safety and essential performance requirements there are many separate areas of concern. These include, but are not limited to, electromagnetic compatibility, ionizing radiation, human factors, biocompatibility and environmental concerns. Many of these requirements are covered in the Collateral Standards. The General Standard and Particular Standards, together with the Collateral Standards, comprise the IEC 60601 series of standards. Also included in this series are joint IEC/ISO-developed standards having the designation(s) IEC/ISO 80601-2-xx. In addition, there may be CAN/CSA-C22.2 No. 60601-1-xx, 60601-2-xx and 80601-2-xx standards that contain Canadian National Differences, which are included as part of the investigation.

In the development cycle of a medical device the various evaluations needed are conducted at different times and, quite often, by different organizations. It is unrealistic to expect that one organization will demand that all the applicable evaluations be satisfied at one point in time. Therefore, the minimum set of safety and essential performance requirements needed to enable a medical device to be eligible for UL Classification is contained in the General Standard and applicable Particular Standards. Each device is marked identifying the standard(s) to which the product was investigated, and may include all or part of the totally applicable IEC 60601 series requirements, not just the minimum stated above. The manufacturer decides what, beyond the minimums, UL investigates.

The total of these evaluations form the basis of the device's legal and field acceptance. The determination must be made that all the requirements of concern have been satisfied. The requirements that have been evaluated by UL have been identified. UL does not assume responsibility for those requirements remaining unaddressed or evaluated by other organizations. As noted in the **UL MARK** section in the Guide Information for the individual product categories, the standards to which UL has found the device compliant are identified on the device, which may also include the accompanying documents.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

APPLIED CURRENT/ENERGY EQUIPMENT CERTIFIED FOR CANADA (MDAB7)

GENERAL

This category covers equipment intended to diagnose, treat and/or monitor a patient under medical supervision, and may also be used to compensate or alleviate disease, injury or disability. This equipment makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer. This also includes medical equipment intended for home health care applications.

REBUILT EQUIPMENT

This category also covers equipment that is rebuilt or remanufactured by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt equipment is rebuilt or remanufactured to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt or remanufactured equipment is subject to the same requirements as new equipment.

FIELD-INSTALLED EQUIPMENT

Some of the equipment covered under this category is intended for field installation, in accordance with the instructions provided, to certified equipment of the same manufacturer. Field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by this equipment have not been investigated.

The effects of the combination of therapies arising from the use of this equipment with other medical equipment have not been investigated.

RELATED EQUIPMENT

Equipment investigated for use in hazardous (classified) locations, as defined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I," is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

ADDITIONAL INFORMATION

For additional information, see Medical Equipment and Systems Certified for Canada (MDAA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60601-1 (2008), "Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance," in addition to one or more of the Particular and/or Collateral Standards noted below.

IECEE Operational and Ruling Document OD-2044, "Guidance for the Evaluation of Risk Management in Medical Electrical Equipment," is used in the assessment of the manufacturer's risk management system.

Note: Canadian National Standards are used where they exist.

Particular Standards:

CAN/CSA-C22.2 No. 60601-2-2 (2009), "Medical Electrical Equipment – Part 2-2: Particular Requirements for the Basic Safety and Essential Performance of High Frequency Surgical Equipment and High Frequency Surgical Accessories"

CAN/CSA-C22.2 No. 60601-2-4 (2012), "Medical Electrical Equipment – Part 2-4: Particular Requirements for the Basic Safety and Essential Performance of Cardiac Defibrillators"

CAN/CSA-C22.2 No. 601.2.10 (1992), "Medical Electrical Equipment – Part 2: Particular Requirements for the Safety of Nerve and Muscle Stimulators"

CAN/CSA-C22.2 No. 60601-2-31 (2009), "Medical Electrical Equipment – Part 2-31: Particular Requirements for the Basic Safety and Essential Performance of External Cardiac Pacemakers with Internal Power Source"

CAN/CSA-C22.2 No. 60601-2-40 (2001), "Medical Electrical Equipment – Part 2-40: Particular Requirements for the Safety of Electromyographs and Evoked Response Equipment"

CAN/CSA-C22.2 No. 60601-2-50 (2010), "Medical Electrical Equipment – Part 2-50: Particular Requirements for the Basic Safety and Essential Performance of Infant Phototherapy Equipment"

CAN/CSA-C22.2 No. 60601-2-57 (2011), "Medical Electrical Equipment – Part 2-57: Particular Requirements for the Basic Safety and Essential Performance of Non-Laser Light Source Equipment Intended for Therapeutic, Diagnostic, Monitoring and Cosmetic/Aesthetic Use"

Collateral Standards (optional):

CAN/CSA-C22.2 No. 60601-1-2 (2008), "Medical Electrical Equipment – Part 1-2: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Electromagnetic Compatibility – Requirements and Tests"

CAN/CSA-C22.2 No. 60601-1-3 (2009), "Medical Electrical Equipment – Part 1-3: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Radiation Protection in Diagnostic X-Ray Equipment"

CAN/CSA-C22.2 No. 60601-1-6 (2011), "Medical Electrical Equipment – Part 1-6: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Usability"

CAN/CSA-C22.2 No. 60601-1-8 (2008), "Medical Electrical Equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems"

IEC 60601-1-9, "Medical Electrical Equipment – Part 1-9: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Environmentally Conscious Design"

CAN/CSA-C22.2 No. 60601-1-10 (2009), "Medical Electrical Equipment – Part 1-10: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for the Development of Physiologic Closed-Loop Controllers"

CAN/CSA-C22.2 No. 60601-1-11 (2011), "Medical Electrical Equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems Used in the Home Healthcare Environment"

Particular Standards — The General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) contains requirements for safety and essential performance that are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (CAN/CSA-C22.2 No. 60601-2-xx). However, unless otherwise indicated in the National Differences in the General Standard, the requirements of a Particular Standard do not modify the National Differences in the General Standard. Where Particular Requirements exist, the General Standard is not used alone.

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (CAN/CSA-C22.2 No. 60601-1-xx or IEC 60601-1-xx), such standard(s) may, optionally, also be used. Unless otherwise indicated in the National Differences in the General Standard, the requirements of a Collateral Standard do not modify the National Differences in the General Standard.

Note: The list of standards referenced above is revised periodically but, at any point in time, may not reflect a current listing of the applicable standards.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

Applied Current/Energy Equipment Certified for Canada (MDAB7)–*Continued*

Applied Current/Energy Equipment Certified for Canada (MDAB7)–*Continued*

MEDICAL — APPLIED CURRENT/ENERGY EQUIPMENT AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH [standard(s)*]
Control No.

For rebuilt or remanufactured equipment, the word **REBUILT**, **REMANUFACTURED**, **REFURBISHED** or **RECONDITIONED** precedes the word **APPLIED**.

For field-installed equipment, the words **FIELD-INSTALLED** precede the word **APPLIED**.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the product name as described above, the phrase "SEE ACCOMPANYING DOCUMENTS" or "ISO 7000, Symbol 1641 " or "Safety Sign ISO 7010-M002 ," the standard number*, and a control number. At a minimum, the standard number* always includes CAN/CSA-C22.2 No. 60601-1 (2008). In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the ISO 7000 Symbol 1641 or the Safety Sign ISO 7010-M002 , and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

3. For products (such as implantable devices) where use of the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or on the smallest unit container in which the product is packaged. The product's accompanying documents will contain the complete Classification Mark as described above.

* Based on the certification coverage of the product, the standard number is CAN/CSA-C22.2 No. 60601-1 (2008) and applicable Particular and/or related Collateral Standards for which the product has been found to comply by UL.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

APPLIED ELECTROMAGNETIC RADIATION EQUIPMENT CERTIFIED FOR CANADA (MDAC7)

GENERAL

This category covers equipment intended to diagnose, treat and/or monitor a patient under medical supervision, and may also be used to compensate or alleviate disease, injury or disability. This equipment makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer. This also includes medical equipment intended for home health care applications.

REBUILT EQUIPMENT

This category also covers equipment that is rebuilt or remanufactured by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt equipment is rebuilt or remanufactured to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt or remanufactured equipment is subject to the same requirements as new equipment.

FIELD-INSTALLED EQUIPMENT

Some of the equipment covered under this category is intended for field installation, in accordance with the instructions provided, to certified equipment of the same manufacturer. Field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by this equipment have not been investigated.

The effects of the combination of therapies arising from the use of this equipment with other medical equipment have not been investigated.

Applied Electromagnetic Radiation Equipment Certified for Canada (MDAC7)–*Continued*

RELATED EQUIPMENT

Equipment investigated for use in hazardous (classified) locations, as defined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I," is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

ADDITIONAL INFORMATION

For additional information, see Medical Equipment and Systems Certified for Canada (MDAA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60601-1 (2008), "Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance," in addition to one or more of the Particular and/or Collateral Standards noted below.

IECEE Operational and Ruling Document OD-2044, "Guidance for the Evaluation of Risk Management in Medical Electrical Equipment," is used in the assessment of the manufacturer's risk management system.

Note: Canadian National Standards are used where they exist.

Particular Standards:

CAN/CSA-C22.2 No. 60601-2-1 (2011), "Medical Electrical Equipment – Part 2-1: Particular Requirements for the Basic Safety and Essential Performance of Electron Accelerators in the Range 1 MeV to 50 MeV"
IEC 60601-2-3, "Medical Electrical Equipment – Part 2-3: Particular Requirements for the Basic Safety and Essential Performance of Short-Wave Therapy Equipment"
CAN/CSA-C22.2 No. 601.2.6 (1992), "Medical Electrical Equipment – Part 2: Particular Requirements for the Safety of Microwave Therapy Equipment"
CAN/CSA-C22.2 No. 60601-2-7 (2001), "Medical Electrical Equipment – Part 2-7: Particular Requirements for the Safety of High-Voltage Generators of Diagnostic X-Ray Generators"
CAN/CSA-C22.2 No. 60601-2-8 (2012), "Medical Electrical Equipment – Part 2-8: Particular Requirements for the Basic Safety and Essential Performance of Therapeutic X-Ray Equipment Operating in the Range 10 kV to 1 MV"
CAN/CSA-C22.2 No. 60601-2-11 (2001), "Medical Electrical Equipment – Part 2-11: Particular Requirements for the Safety of Gamma Beam Therapy Equipment"
CAN/CSA-C22.2 No. 60601-2-17 (2004), "Medical Electrical Equipment – Part 2: Particular Requirements for the Safety of Automatically-Controlled Brachytherapy Afterloading Equipment"
CAN/CSA-C22.2 No. 60601-2-28 (2012), "Medical Electrical Equipment – Part 2-28: Particular Requirements for the Basic Safety and Essential Performance of X-Ray Tube Assemblies for Medical Diagnosis"
CAN/CSA-C22.2 No. 60601-2-29 (2010), "Medical Electrical Equipment – Part 2-29: Particular Requirements for the Basic Safety and Essential Performance of Radiotherapy Simulators"
CAN/CSA-C22.2 No. 60601-2-33 (2012), "Medical Electrical Equipment – Part 2-33: Particular Requirements for the Basic Safety and Essential Performance of Magnetic Resonance Equipment for Medical Diagnosis"
CAN/CSA-C22.2 No. 60601-2-43 (2011), "Medical Electrical Equipment – Part 2-43: Particular Requirements for the Basic Safety and Essential Performance of X-Ray Equipment for Interventional Procedures"
CAN/CSA-C22.2 No. 60601-2-44 (2010), "Medical Electrical Equipment – Part 2-44: Particular Requirements for the Basic Safety and Essential Performance of X-Ray Equipment for Computed Tomography"
CAN/CSA-C22.2 No. 60601-2-45 (2011), "Medical Electrical Equipment – Part 2-45: Particular Requirements for the Basic Safety and Essential Performance of Mammographic X-Ray Equipment and Mammographic Stereotactic Devices"
CAN/CSA-C22.2 No. 60601-2-54 (2011), "Medical Electrical Equipment – Part 2-54: Particular Requirements for the Basic Safety and Essential Performance of X-Ray Equipment for Radiography and Radioscopy"
IEC 60601-2-63, "Medical Electrical Equipment – Part 2-63: Particular Requirements for the Basic Safety and Essential Performance of Dental Extra-Oral X-Ray Equipment"
IEC 60601-2-65, "Medical Electrical Equipment – Part 2-65: Particular Requirements for the Basic Safety and Essential Performance of Dental Intra-Oral X-Ray Equipment"

Collateral Standards (optional):

CAN/CSA-C22.2 No. 60601-1-2 (2008), "Medical Electrical Equipment – Part 1-2: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Electromagnetic Compatibility – Requirements and Tests"

Applied Electromagnetic Radiation Equipment Certified for Canada (MDAC7)−*Continued*

CAN/CSA-C22.2 No. 60601-1-3 (2009), ''Medical Electrical Equipment – Part 1-3: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Radiation Protection in Diagnostic X-Ray Equipment''
CAN/CSA-C22.2 No. 60601-1-6 (2011), ''Medical Electrical Equipment – Part 1-6: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Usability''
CAN/CSA-C22.2 No. 60601-1-8 (2008), ''Medical Electrical Equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems''
IEC 60601-1-9, ''Medical Electrical Equipment – Part 1-9: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Environmentally Conscious Design''
CAN/CSA-C22.2 No. 60601-1-10 (2009), ''Medical Electrical Equipment – Part 1-10: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for the Development of Physiologic Closed-Loop Controllers''
CAN/CSA-C22.2 No. 60601-1-11 (2011), ''Medical Electrical Equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems Used in the Home Healthcare Environment''

Particular Standards — The General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) contains requirements for safety and essential performance that are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (CAN/CSA-C22.2 No. 60601-2-xx or IEC 60601-2-xx). However, unless otherwise indicated in the National Differences in the General Standard, the requirements of a Particular Standard do not modify the National Differences in the General Standard. Where Particular Requirements exist, the General Standard is not used alone.

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (CAN/CSA-C22.2 No. 60601-1-xx or IEC 60601-1-xx), such standard(s) may, optionally, also be used. Unless otherwise indicated in the National Differences in the General Standard, the requirements of a Collateral Standard do not modify the National Differences in the General Standard.

Note: The list of standards referenced above is revised periodically but, at any point in time, may not reflect a current listing of the applicable standards.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEDICAL — APPLIED ELECTROMAGNETIC RADIATION EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH [standard(s)*]
Control No.

For rebuilt or remanufactured equipment, the word **REBUILT**, **REMANUFACTURED**, **REFURBISHED** or **RECONDITIONED** precedes the word **APPLIED**.

For field-installed equipment, the words **FIELD-INSTALLED** precede the word **APPLIED**.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the product name as described above, the phrase ''SEE ACCOMPANYING DOCUMENTS'' or ''ISO 7000, Symbol 1641 '' or ''Safety Sign ISO 7010-M002 ,'' the standard number*, and a control number. At a minimum, the standard number* always includes CAN/CSA-C22.2 No. 60601-1 (2008). In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the ISO 7000 Symbol 1641 or the Safety Sign ISO 7010-M002 , and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

3. For products (such as implantable devices) where use of the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or on the smallest unit container in which the product is packaged. The product's accompanying documents will contain the complete Classification Mark as described above.

* Based on the certification coverage of the product, the standard number is CAN/CSA-C22.2 No. 60601-1 (2008) and applicable Particular and/or related Collateral Standards for which the product has been found to comply by UL.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Applied Electromagnetic Radiation Equipment Certified for Canada (MDAC7)−*Continued*

CARDIO, VASCULAR AND PULMONARY EQUIPMENT CERTIFIED FOR CANADA (MDAD7)

GENERAL

This category covers equipment intended to diagnose, treat and/or monitor a patient under medical supervision, and may also be used to compensate or alleviate disease, injury or disability. This equipment makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer. This also includes medical equipment intended for home health care applications.

REBUILT EQUIPMENT

This category also covers equipment that is rebuilt or remanufactured by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt equipment is rebuilt or remanufactured to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt or remanufactured equipment is subject to the same requirements as new equipment.

FIELD-INSTALLED EQUIPMENT

Some of the equipment covered under this category is intended for field installation, in accordance with the instructions provided, to certified equipment of the same manufacturer. Field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by this equipment have not been investigated.

The effects of the combination of therapies arising from the use of this equipment with other medical equipment have not been investigated.

RELATED EQUIPMENT

Equipment investigated for use in hazardous (classified) locations, as defined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

ADDITIONAL INFORMATION

For additional information, see Medical Equipment and Systems Certified for Canada (MDAA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60601-1 (2008), ''Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance,'' in addition to one or more of the Particular and/or Collateral Standards noted below.

IECEE Operational and Ruling Document OD-2044, ''Guidance for the Evaluation of Risk Management in Medical Electrical Equipment,'' is used in the assessment of the manufacturer's risk management system.

Note: Canadian National Standards are used where they exist.

Particular Standards:

CAN/CSA-C22.2 No. 60601-2-13 (2007), ''Medical Electrical Equipment – Part 2-13: Particular Requirements for the Safety and Essential Performance of Anaesthetic Systems''
CAN/CSA-C22.2 No. 60601-2-16 (2009), ''Medical Electrical Equipment – Part 2-16: Particular Requirements for Basic Safety and Essential Performance of Haemodialysis, Haemodiafiltration and Haemofiltration Equipment''
IEC 60601-2-24, ''Medical Electrical Equipment – Part 2-24: Particular

Cardio, Vascular and Pulmonary Equipment Certified for Canada (MDAD7)−*Continued*

Requirements for the Basic Safety and Essential Performance of Infusion Pumps and Controllers"
CAN/CSA-C22.2 No. 60601-2-39 (2009), "Medical Electrical Equipment – Part 2-39: Particular Requirements for Basic Safety and Essential Performance of Peritoneal Dialysis Equipment"
CAN/CSA-C22.2 No. 80601-2-12 (2012), "Medical Electrical Equipment – Part 2-12: Particular Requirements for Basic Safety and Essential Performance of Critical Care Ventilators"

Collateral Standards (optional):
CAN/CSA-C22.2 No. 60601-1-2 (2008), "Medical Electrical Equipment – Part 1-2: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Electromagnetic Compatibility – Requirements and Tests"
CAN/CSA-C22.2 No. 60601-1-3 (2009), "Medical Electrical Equipment – Part 1-3: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Radiation Protection in Diagnostic X-Ray Equipment"
CAN/CSA-C22.2 No. 60601-1-6 (2011), "Medical Electrical Equipment – Part 1-6: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Usability"
CAN/CSA-C22.2 No. 60601-1-8 (2008), "Medical Electrical Equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems"
IEC 60601-1-9, "Medical Electrical Equipment – Part 1-9: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Environmentally Conscious Design"
CAN/CSA-C22.2 No. 60601-1-10 (2009), "Medical Electrical Equipment – Part 1-10: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for the Development of Physiologic Closed-Loop Controllers"
CAN/CSA-C22.2 No. 60601-1-11 (2011), "Medical Electrical Equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems Used in the Home Healthcare Environment"

Particular Standards — The General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) contains requirements for safety and essential performance that are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (CAN/CSA-C22.2 No. 60601-2-xx). However, unless otherwise indicated in the National Differences in the General Standard, the requirements of a Particular Standard do not modify the National Differences in the General Standard. Where Particular Requirements exist, the General Standard is not used alone.

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (CAN/CSA-C22.2 No. 60601-1-xx or IEC 60601-1-xx), such standard(s) may, optionally, also be used. Unless otherwise indicated in the National Differences in the General Standard, the requirements of a Collateral Standard do not modify the National Differences in the General Standard.

Note: The list of standards referenced above is revised periodically but, at any point in time, may not reflect a current listing of the applicable standards.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEDICAL — CARDIO, VASCULAR AND PULMONARY EQUIPMENT AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH [standard(s)*]
Control No.

For rebuilt or remanufactured equipment, the word **REBUILT**, **REMANUFACTURED**, **REFURBISHED** or **RECONDITIONED** precedes the word **CARDIO**.

For field-installed equipment, the words **FIELD-INSTALLED** precede the word **CARDIO**.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the product name as described above, the phrase "SEE ACCOMPANYING DOCUMENTS" or "ISO 7000, Symbol 1641 " or "Safety Sign ISO 7010-M002 ," the standard number*, and a control number. At a minimum, the standard number* always includes CAN/CSA-C22.2 No. 60601-1 (2008). In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the ISO 7000 Symbol 1641 or the Safety Sign ISO 7010-M002 , and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

3. For products (such as implantable devices) where use of the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or on the smallest unit container in which the product is packaged. The product's accompanying documents will contain the complete Classification Mark as described above.

* Based on the certification coverage of the product, the standard number is CAN/CSA-C22.2 No. 60601-1 (2008) and applicable Particular and/or related Collateral Standards for which the product has been found to comply by UL.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

GENERAL MEDICAL EQUIPMENT CERTIFIED FOR CANADA (MDAF7)

GENERAL

This category covers equipment intended to diagnose, treat and/or monitor a patient under medical supervision, and may also be used to compensate or alleviate disease, injury or disability. This equipment makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer. This also includes medical equipment intended for home health care applications.

REBUILT EQUIPMENT

This category also covers equipment that is rebuilt or remanufactured by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt equipment is rebuilt or remanufactured to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt or remanufactured equipment is subject to the same requirements as new equipment.

FIELD-INSTALLED EQUIPMENT

Some of the equipment covered under this category is intended for field installation, in accordance with the instructions provided, to certified equipment of the same manufacturer. Field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by this equipment have not been investigated.

The effects of the combination of therapies arising from the use of this equipment with other medical equipment have not been investigated.

RELATED EQUIPMENT

Equipment investigated for use in hazardous (classified) locations, as defined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I," is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

ADDITIONAL INFORMATION

For additional information, see Medical Equipment and Systems Certified for Canada (MDAA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60601-1 (2008), "Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance," in addition to one or more of the Particular and/or Collateral Standards noted below. This category also covers equipment for which no Particular Standard exists.

IECEE Operational and Ruling Document OD-2044, "Guidance for the Evaluation of Risk Management in Medical Electrical Equipment," is used in the assessment of the manufacturer's risk management system.

General Medical Equipment Certified for Canada (MDAF7)−*Continued*

Note: Canadian National Standards are used where they exist.

Particular Standards:

CAN/CSA-C22.2 No. 60601-2-18 (2011), "Medical Electrical Equipment – Part 2-18: Particular Requirements for the Basic Safety and Essential Performance of Endoscopic Equipment"

CAN/CSA-C22.2 No. 60601-2-19 (2009), "Medical Electrical Equipment – Part 2-19: Particular Requirements for the Basic Safety and Essential Performance of Infant Incubators"

CAN/CSA-C22.2 No. 60601-2-20 (2010), "Medical Electrical Equipment – Part 2-20: Particular Requirements for the Basic Safety and Essential Performance of Infant Transport Incubators"

CAN/CSA-C22.2 No. 60601-2-21 (2010), "Medical Electrical Equipment – Part 2-21: Particular Requirements for the Basic Safety and Essential Performance of Infant Radiant Warmers"

CAN/CSA-C22.2 No. 601.2.32 (1998), "Medical Electrical Equipment – Part 2: Particular Requirements for the Safety of Associated Equipment of X-Ray Equipment"

CAN/CSA-C22.2 No. 60601-2-41 (2011), "Medical Electrical Equipment – Part 2-41: Particular Requirements for the Basic Safety and Essential Performance of Surgical Luminaires and Luminaires for Diagnosis"

CAN/CSA-C22.2 No. 60601-2-46 (2012), "Medical Electrical Equipment – Part 2-46: Particular Requirements for the Basic Safety and Essential Performance of Operating Tables"

CAN/CSA-C22.2 No. 60601-2-52 (2011), "Medical Electrical Equipment – Part 2-52: Particular Requirements for the Basic Safety and Essential Performance of Medical Beds"

IEC 60601-2-66, "Medical Electrical Equipment – Part 2-66: Particular Requirements for the Basic Safety and Essential Performance of Hearing Instruments and Hearing Instrument Systems"

CAN/CSA-C22.2 No. 80601-2-35 (2012), "Medical Electrical Equipment – Part 2-35: Particular Requirements for the Basic Safety and Essential Performance of Heating Devices Using Blankets, Pads or Mattresses and Intended for Heating in Medical Use"

CAN/CSA-C22.2 No. 80601-2-58 (2010), "Medical Electrical Equipment – Part 2-58: Particular Requirements for the Basic Safety and Essential Performance of Lens Removal Devices and Vitrectomy Devices for Ophthalmic Surgery"

IEC 80601-2-60, "Medical Electrical Equipment – Part 2-60: Particular Requirements for the Basic Safety and Essential Performance of Dental Equipment"

Collateral Standards (optional):

CAN/CSA-C22.2 No. 60601-1-2 (2008), "Medical Electrical Equipment – Part 1-2: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Electromagnetic Compatibility – Requirements and Tests"

CAN/CSA-C22.2 No. 60601-1-3 (2009), "Medical Electrical Equipment – Part 1-3: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Radiation Protection in Diagnostic X-Ray Equipment"

CAN/CSA-C22.2 No. 60601-1-6 (2011), "Medical Electrical Equipment – Part 1-6: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Usability"

CAN/CSA-C22.2 No. 60601-1-8 (2008), "Medical Electrical Equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems"

IEC 60601-1-9, "Medical Electrical Equipment – Part 1-9: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Environmentally Conscious Design"

CAN/CSA-C22.2 No. 60601-1-10 (2009), "Medical Electrical Equipment – Part 1-10: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for the Development of Physiologic Closed-Loop Controllers"

CAN/CSA-C22.2 No. 60601-1-11 (2011), "Medical Electrical Equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems Used in the Home Healthcare Environment"

Particular Standards — The General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) contains requirements for safety and essential performance that are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (CAN/CSA-C22.2 No. 60601-2-xx, CAN/CSA-C22.2 No. 80601-2-xx, IEC 60601-2-xx or IEC 80601-2-xx). However, unless otherwise indicated in the National Differences in the General Standard, the requirements of a Particular Standard do not modify the National Differences in the General Standard. Where Particular Requirements exist, the General Standard is not used alone.

General Medical Equipment Certified for Canada (MDAF7)−*Continued*

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (CAN/CSA-C22.2 No. 60601-1-xx or IEC 60601-1-xx), such standard(s) may, optionally, also be used. Unless otherwise indicated in the National Differences in the General Standard, the requirements of a Collateral Standard do not modify the National Differences in the General Standard.

Note: The list of standards referenced above is revised periodically but, at any point in time, may not reflect a current listing of the applicable standards.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEDICAL — GENERAL MEDICAL EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH [standard(s)*]
Control No.

For rebuilt or remanufactured equipment, the word **REBUILT**, **REMANUFACTURED**, **REFURBISHED** or **RECONDITIONED** precedes the word **GENERAL**.

For field-installed equipment, the words **FIELD-INSTALLED** precede the word **GENERAL**.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the product name as described above, the phrase "SEE ACCOMPANYING DOCUMENTS" or "ISO 7000, Symbol 1641 " or "Safety Sign ISO 7010-M002 ," the standard number*, and a control number. At a minimum, the standard number* always includes CAN/CSA-C22.2 No. 60601-1 (2008). In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the ISO 7000 Symbol 1641 or the Safety Sign ISO 7010-M002 , and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

3. For products (such as implantable devices) where use of the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or on the smallest unit container in which the product is packaged. The product's accompanying documents will contain the complete Classification Mark as described above.

* Based on the certification coverage of the product, the standard number is CAN/CSA-C22.2 No. 60601-1 (2008) and applicable Particular and/or related Collateral Standards for which the product has been found to comply by UL.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

LASER EQUIPMENT CERTIFIED FOR CANADA (MDAH7)

GENERAL

This category covers equipment intended to diagnose, treat and/or monitor a patient under medical supervision, and may also be used to compensate or alleviate disease, injury or disability. This equipment makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer. This also includes medical equipment intended for home health care applications.

REBUILT EQUIPMENT

This category also covers equipment that is rebuilt or remanufactured by the original manufacturer or another party having the necessary facilities,

Laser Equipment Certified for Canada (MDAH7)−*Continued*

technical knowledge and manufacturing skills. Rebuilt equipment is rebuilt or remanufactured to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt or remanufactured equipment is subject to the same requirements as new equipment.

FIELD-INSTALLED EQUIPMENT

Some of the equipment covered under this category is intended for field installation, in accordance with the instructions provided, to certified equipment of the same manufacturer. Field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by this equipment have not been investigated.

The effects of the combination of therapies arising from the use of this equipment with other medical equipment have not been investigated.

RELATED EQUIPMENT

Equipment investigated for use in hazardous (classified) locations, as defined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

ADDITIONAL INFORMATION

For additional information, see Medical Equipment and Systems Certified for Canada (MDAA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60601-1 (2008), ''Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance,'' in addition to one or more of the Particular and/or Collateral Standards noted below.

IECEE Operational and Ruling Document OD-2044, ''Guidance for the Evaluation of Risk Management in Medical Electrical Equipment,'' is used in the assessment of the manufacturer's risk management system.

Note: Canadian National Standards are used where they exist.

Particular Standard:

CAN/CSA-C22.2 No. 60601-2-22 (2008), ''Medical Electrical Equipment – Part 2-22: Particular Requirements for Basic Safety and Essential Performance of Surgical, Cosmetic, Therapeutic and Diagnostic Laser Equipment''

Collateral Standards (optional):

CAN/CSA-C22.2 No. 60601-1-2 (2008), ''Medical Electrical Equipment – Part 1-2: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Electromagnetic Compatibility – Requirements and Tests''

CAN/CSA-C22.2 No. 60601-1-3 (2009), ''Medical Electrical Equipment – Part 1-3: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Radiation Protection in Diagnostic X-Ray Equipment''

CAN/CSA-C22.2 No. 60601-1-6 (2011), ''Medical Electrical Equipment – Part 1-6: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Usability''

CAN/CSA-C22.2 No. 60601-1-8 (2008), ''Medical Electrical Equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems''

IEC 60601-1-9, ''Medical Electrical Equipment – Part 1-9: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Environmentally Conscious Design''

CAN/CSA-C22.2 No. 60601-1-10 (2009), ''Medical Electrical Equipment – Part 1-10: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for the Development of Physiologic Closed-Loop Controllers''

CAN/CSA-C22.2 No. 60601-1-11 (2011), ''Medical Electrical Equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems Used in the Home Healthcare Environment''

Particular Standards — The General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) contains requirements for safety and essential performance that are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (CAN/CSA-C22.2 No. 60601-2-xx). However, unless otherwise indicated in the National Differences in the General Standard, the requirements of a Particular Standard do not modify the National Differences in the General Standard. Where Particular Requirements exist, the General Standard is not used alone.

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (CAN/CSA-C22.2 No. 60601-1-xx or IEC 60601-1-xx), such standard(s) may, optionally, also be used. Unless otherwise indicated in the National Differences in the General Standard, the requirements of a Collateral Standard do not modify the National Differences in the General Standard.

Laser Equipment Certified for Canada (MDAH7)−*Continued*

Note: The list of standards referenced above is revised periodically but, at any point in time, may not reflect a current listing of the applicable standards.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEDICAL — LASER EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH [standard(s)*]
Control No.

For rebuilt or remanufactured equipment, the word **REBUILT**, **REMANUFACTURED**, **REFURBISHED** or **RECONDITIONED** precedes the word **LASER**.

For field-installed equipment, the words **FIELD-INSTALLED** precede the word **LASER**.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the product name as described above, the phrase ''SEE ACCOMPANYING DOCUMENTS'' or ''ISO 7000, Symbol 1641  '' or ''Safety Sign ISO 7010-M002  ,'' the standard number*, and a control number. At a minimum, the standard number* always includes CAN/CSA-C22.2 No. 60601-1 (2008). In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the ISO 7000 Symbol 1641  or the Safety Sign ISO 7010-M002  , and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

3. For products (such as implantable devices) where use of the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or on the smallest unit container in which the product is packaged. The product's accompanying documents will contain the complete Classification Mark as described above.

* Based on the certification coverage of the product, the standard number is CAN/CSA-C22.2 No. 60601-1 (2008) and applicable Particular and/or related Collateral Standards for which the product has been found to comply by UL.

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

PATIENT-MONITORING EQUIPMENT CERTIFIED FOR CANADA (MDAJ7)

GENERAL

This category covers equipment intended to diagnose, treat and/or monitor a patient under medical supervision, and may also be used to compensate or alleviate disease, injury or disability. This equipment makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer. This also includes medical equipment intended for home health care applications.

REBUILT EQUIPMENT

This category also covers equipment that is rebuilt or remanufactured by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt equipment is rebuilt or remanufactured to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt or remanufactured equipment is subject to the same requirements as new equipment.

Patient-monitoring Equipment Certified for Canada (MDAJ7)−*Continued*

FIELD-INSTALLED EQUIPMENT

Some of the equipment covered under this category is intended for field installation, in accordance with the instructions provided, to certified equipment of the same manufacturer. Field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by this equipment have not been investigated.

The effects of the combination of therapies arising from the use of this equipment with other medical equipment have not been investigated.

RELATED EQUIPMENT

Equipment investigated for use in hazardous (classified) locations, as defined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

ADDITIONAL INFORMATION

For additional information, see Medical Equipment and Systems Certified for Canada (MDAA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60601-1 (2008), ''Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance,'' in addition to one or more of the Particular and/or Collateral Standards noted below.

IECEE Operational and Ruling Document OD-2044, ''Guidance for the Evaluation of Risk Management in Medical Electrical Equipment,'' is used in the assessment of the manufacturer's risk management system.

Note: Canadian National Standards are used where they exist.

Particular Standards:

CAN/CSA-C22.2 No. 60601-2-23 (2012), ''Medical Electrical Equipment – Part 2-23: Particular Requirements for the Basic Safety and Essential Performance of Transcutaneous Partial Pressure Monitoring Equipment''

IEC 60601-2-25, '' Medical Electrical Equipment – Part 2-25: Particular Requirements for the Basic Safety and Essential Performance of Electrocardiographs''

IEC 60601-2-26, ''Medical Electrical Equipment – Part 2-26: Particular Requirements for the Basic Safety and Essential Performance of Electroencephalographs''

CAN/CSA-C22.2 No. 60601-2-27 (2011), ''Medical Electrical Equipment – Part 2-27: Particular Requirements for the Basic Safety and Essential Performance of Electrocardiographic Monitoring Equipment''

CAN/CSA-C22.2 No. 60601-2-34 (2012), ''Medical Electrical Equipment – Part 2-34: Particular Requirements for the Basic Safety and Essential Performance of Invasive Blood Pressure Monitoring Equipment''

CAN/CSA-C22.2 No. 60601-2-47 (2007), ''Medical Electrical Equipment – Part 2-47: Particular Requirements for the Safety, Including Essential Performance, of Ambulatory Electrocardiographic Systems''

CAN/CSA-C22.2 No. 60601-2-49 (2011), ''Medical Electrical Equipment – Part 2-49: Particular Requirements for the Basic Safety and Essential Performance of Multifunction Patient Monitoring Equipment''

CAN/CSA-C22.2 No. 80601-2-30 (2010), ''Medical Electrical Equipment – Part 2-30: Particular Requirements for the Basic Safety and Essential Performance of Automated Non-Invasive Sphygmomanometers''

ISO 80601-2-55, ''Medical Electrical Equipment – Part 2-55: Particular Requirements for the Basic Safety and Essential Performance of Respiratory Gas Monitors''

CAN/CSA-C22.2 No. 80601-2-56 (2012), ''Medical Electrical Equipment — Part 2-56: Particular Requirements for Basic Safety and Essential Performance of Clinical Thermometers for Body Temperature Measurement''

ISO 80601-2-61, ''Medical Electrical Equipment – Part 2-61: Particular Requirements for Basic Safety and Essential Performance of Pulse Oximeter Equipment''

Collateral Standards (optional):

CAN/CSA-C22.2 No. 60601-1-2 (2008), ''Medical Electrical Equipment – Part 1-2: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Electromagnetic Compatibility – Requirements and Tests''

CAN/CSA-C22.2 No. 60601-1-3 (2009), ''Medical Electrical Equipment – Part 1-3: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Radiation Protection in Diagnostic X-Ray Equipment''

CAN/CSA-C22.2 No. 60601-1-6 (2011), ''Medical Electrical Equipment – Part 1-6: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Usability''

Patient-monitoring Equipment Certified for Canada (MDAJ7)−*Continued*

CAN/CSA-C22.2 No. 60601-1-8 (2008), ''Medical Electrical Equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems''

IEC 60601-1-9, ''Medical Electrical Equipment – Part 1-9: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Environmentally Conscious Design''

CAN/CSA-C22.2 No. 60601-1-10 (2009), ''Medical Electrical Equipment – Part 1-10: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for the Development of Physiologic Closed-Loop Controllers''

CAN/CSA-C22.2 No. 60601-1-11 (2011), ''Medical Electrical Equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems Used in the Home Healthcare Environment''

Particular Standards — The General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) contains requirements for safety and essential performance that are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (CAN/CSA-C22.2 No. 60601-2-xx or 80601-2-xx). However, unless otherwise indicated in the National Differences in the General Standard, the requirements of a Particular Standard do not modify the National Differences in the General Standard. Where Particular Requirements exist, the General Standard is not used alone.

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (CAN/CSA-C22.2 No. 60601-1-xx or IEC 60601-1-xx), such standard(s) may, optionally, also be used. Unless otherwise indicated in the National Differences in the General Standard, the requirements of a Collateral Standard do not modify the National Differences in the General Standard.

Note: The list of standards referenced above is revised periodically but, at any point in time, may not reflect a current listing of the applicable standards.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEDICAL — PATIENT-MONITORING EQUIPMENT AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH [standard(s)*] Control No.

For rebuilt or remanufactured equipment, the word **REBUILT**, **REMANUFACTURED**, **REFURBISHED** or **RECONDITIONED** precedes the words **PATIENT-MONITORING**.

For field-installed equipment, the words **FIELD-INSTALLED** precede the words **PATIENT-MONITORING**.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the product name as described above, the phrase ''SEE ACCOMPANYING DOCUMENTS'' or ''ISO 7000, Symbol 1641 '' or ''Safety Sign ISO 7010-M002 ,'' the standard number*, and a control number. At a minimum, the standard number* always includes CAN/CSA-C22.2 No. 60601-1 (2008). In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the ISO 7000 Symbol 1641 or the Safety Sign ISO 7010-M002 , and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

3. For products (such as implantable devices) where use of the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or on the smallest unit container in which the product is packaged. The product's accompanying documents will contain the complete Classification Mark as described above.

* Based on the certification coverage of the product, the standard number is CAN/CSA-C22.2 No. 60601-1 (2008) and applicable Particular and/or related Collateral Standards for which the product has been found to comply by UL.

Patient-monitoring Equipment Certified for Canada (MDAJ7)−*Continued*

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

ULTRASOUND EQUIPMENT CERTIFIED FOR CANADA (MDAL7)

GENERAL

This category covers equipment intended to diagnose, treat and/or monitor a patient under medical supervision, and may also be used to compensate or alleviate disease, injury or disability. This equipment makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer. This also includes medical equipment intended for home health care applications.

REBUILT EQUIPMENT

This category also covers equipment that is rebuilt or remanufactured by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt equipment is rebuilt or remanufactured to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt or remanufactured equipment is subject to the same requirements as new equipment.

FIELD-INSTALLED EQUIPMENT

Some of the equipment covered under this category is intended for field installation, in accordance with the instructions provided, to certified equipment of the same manufacturer. Field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by this equipment have not been investigated.

The effects of the combination of therapies arising from the use of this equipment with other medical equipment have not been investigated.

RELATED EQUIPMENT

Equipment investigated for use in hazardous (classified) locations, as defined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

ADDITIONAL INFORMATION

For additional information, see Medical Equipment and Systems Certified for Canada (MDAA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60601-1 (2008), ''Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance,'' in addition to one or more of the Particular and/or Collateral Standards noted below.

IECEE Operational and Ruling Document OD-2044, ''Guidance for the Evaluation of Risk Management in Medical Electrical Equipment,'' is used in the assessment of the manufacturer's risk management system.

Note: Canadian National Standards are used where they exist.

Particular Standards:

CAN/CSA-C22.2 No. 60601-2-5 (2011), ''Medical Electrical Equipment – Part 2-5: Particular Requirements for the Basic Safety and Essential Performance of Ultrasonic Physiotherapy Equipment''

CAN/CSA-C22.2 No. 60601.2.36 (1998), ''Medical Electrical Equipment – Part 2: Particular Requirements for the Safety of Equipment for Extracorporeally Induced Lithotripsy''

CAN/CSA-C22.2 No. 60601-2-37 (2008), ''Medical Electrical Equipment – Part 2-37: Particular Requirements for the Basic Safety and Essential Performance of Ultrasonic Medical Diagnostic and Monitoring Equipment''

Collateral Standards (optional):

CAN/CSA-C22.2 No. 60601-1-2 (2008), ''Medical Electrical Equipment – Part 1-2: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Electromagnetic Compatibility – Requirements and Tests''

CAN/CSA-C22.2 No. 60601-1-3 (2009), ''Medical Electrical Equipment – Part 1-3: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Radiation Protection in Diagnostic X-Ray Equipment''

Ultrasound Equipment Certified for Canada (MDAL7)−*Continued*

CAN/CSA-C22.2 No. 60601-1-6 (2011), ''Medical Electrical Equipment – Part 1-6: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Usability''

CAN/CSA-C22.2 No. 60601-1-8 (2008), ''Medical Electrical Equipment – Part 1-8: General Requirements for Basic Safety and Essential Performance – Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems''

IEC 60601-1-9, ''Medical Electrical Equipment – Part 1-9: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Environmentally Conscious Design''

CAN/CSA-C22.2 No. 60601-1-10 (2009), ''Medical Electrical Equipment – Part 1-10: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for the Development of Physiologic Closed-Loop Controllers''

CAN/CSA-C22.2 No. 60601-1-11 (2011), ''Medical Electrical Equipment – Part 1-11: General Requirements for Basic Safety and Essential Performance – Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems Used in the Home Healthcare Environment''

Particular Standards — The General Standard (CAN/CSA-C22.2 No. 60601-1 [2008]) contains requirements for safety and essential performance that are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (CAN/CSA-C22.2 No. 60601-2-xx). However, unless otherwise indicated in the National Differences in the General Standard, the requirements of a Particular Standard do not modify the National Differences in the General Standard. Where Particular Requirements exist, the General Standard is not used alone.

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (CAN/CSA-C22.2 No. 60601-1-xx or IEC 60601-1-xx), such standard(s) may, optionally, also be used. Unless otherwise indicated in the National Differences in the General Standard, the requirements of a Collateral Standard do not modify the National Differences in the General Standard.

Note: The list of standards referenced above is revised periodically but, at any point in time, may not reflect a current listing of the applicable standards.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEDICAL — ULTRASOUND EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH [standard(s)*]
Control No.

For rebuilt or remanufactured equipment, the word **REBUILT**, **REMANUFACTURED**, **REFURBISHED** or **RECONDITIONED** precedes the word **ULTRASOUND**.

For field-installed equipment, the words **FIELD-INSTALLED** precede the word **ULTRASOUND**.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the product name as described above, the phrase ''SEE ACCOMPANYING DOCUMENTS'' or ''ISO 7000, Symbol 1641 '' or ''Safety Sign ISO 7010-M002  ,'' the standard number*, and a control number. At a minimum, the standard number* always includes CAN/CSA-C22.2 No. 60601-1 (2008). In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol, the ISO 7000 Symbol 1641 or the Safety Sign ISO 7010-M002 , and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark as described above.

3. For products (such as implantable devices) where use of the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or on the smallest unit container in which the product is packaged. The product's accompanying documents will contain the complete Classification Mark as described above.

Ultrasound Equipment Certified for Canada (MDAL7)−*Continued*

* Based on the certification coverage of the product, the standard number is CAN/CSA-C22.2 No. 60601-1 (2008) and applicable Particular and/or related Collateral Standards for which the product has been found to comply by UL.

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HEATING PADS, ELECTRIC CERTIFIED FOR CANADA (MNUV7)

USE

This category covers electric heating pads and specialty heating pads intended for household use.

RELATED PRODUCTS

Products intended for hospital service or other similar supervised medicinal usage are covered under Medical Equipment Certified for Canada (AALZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 15 (1991), ''Electrically Heated Warming Pads.''

Hospital-use requirements of CAN/CSA-C22.2 No. 15 (1991) are intended to complement other medical directive requirements.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Heating Pad,'' or the name of the specific type of product as shown in the individual Listings.

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HOBBY AND SPORTS EQUIPMENT CERTIFIED FOR CANADA (MSVW7)

USE

This category covers electrically powered hobby and sports equipment rated 250 V or less, intended for home entertainment and amusement of adults.

RELATED PRODUCTS

Toys and games intended for children are covered under Toys Certified for Canada (XNIZ7).

Transformers for toys are covered under Transformers, Toy Certified for Canada (XRBV7).

Equipment intended for commercial operation is covered under Amusement and Gaming Machines Certified for Canada (ASMU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68 (1992), ''Motor-Operated Appliances (Household and Commercial).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Hobby Equipment,'' ''Sport Equipment,'' ''Sports Equipment,'' ''Hobby and Sport Equipment'' or ''Hobby and Sports Equipment.''

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HOISTS CERTIFIED FOR CANADA (MSXT7)

USE AND INSTALLATION

This category covers electrically powered/operated hoists of the overhead type, intended for material-lifting service using either chain or wire rope. They are intended to be suspended from a fixed member and may include trolleys for mobility.

All hoists are of the self-locking or braking type so that if the actuating force is removed, the load is retained in place. Load capacities are marked on the assemblies.

This category does not cover:

Manual or power-operated portable hoists intended for use with scaffolds suspended by wire ropes
Hoists for transporting people
Manually operated chain hoists
The fixed member or trolley that suspends the hoist

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 33, ''Construction and Test of Electric Cranes and Hoists.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Hoist'' or ''Hoist.''

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HOISTWAY CABLE CERTIFIED FOR CANADA (MSZR7)

GENERAL

This category covers twisted and parallel hoistway cable intended for control and signal applications in elevator hoistways in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' The cable is rated 300 V or 600 V. The temperature rating, if so marked, is 90°C; otherwise it is 60°C. Insulated conductors are 18–12 AWG inclusive for 600 V twisted constructions, 20–12 AWG for 300 V twisted constructions, and 18 AWG only for parallel constructions. Twisted constructions consist of insulated conductors cabled together and may be covered with an overall jacket.

PRODUCT MARKINGS

Hoistway cable is identified by the words ''Hoistway Cable'' printed on at least one insulated conductor of nonjacketed constructions, or on the jacket of jacketed constructions.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 49, ''Flexible Cords and Cables.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Hoistway Cable.''

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HOSE CERTIFIED FOR CANADA (MURZ7)

FLAMMABLE LIQUID HOSE ASSEMBLIES CERTIFIED FOR CANADA (MVQJ7)

GENERAL

This category covers flammable liquid hose assemblies that consist of a length of flexible hose with a coupling or other connecting fitting attached to each end, intended for use on portable tanks, discharge devices and other equipment requiring use of a flexible hose for conveying gasoline, kerosene, fuel oil or diesel fuel. Single-line hose assemblies are manufactured in sizes up to 40 mm inside diameter. Coaxial vapor-recovery hose assemblies are manufactured with various connection configurations. All are intended for use where the working pressure for hose conveying liquid fuel does not exceed 350 kPa.

These assemblies are intended for use only in ventilated locations.

Hose assemblies suitable for use at temperatures down to -54°C may be marked "For use down to -54C."

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S612 (2007), "Hose and Hose Assemblies for Dispensing Flammable Liquids."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Flammable Liquid Hose Assembly" or "Vapor Recovery Flammable Liquid Hose Assembly."

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FLEXIBLE METAL HOSE CERTIFIED FOR CANADA (MVTV7)

USE

This category covers flexible metal hose intended for handling gases which are usually considered to be combustible, such as liquefied petroleum gas and manufactured and natural fuel gases, and ordinary flammable and combustible liquids, such as fuel oils, gasoline, kerosene, alcohol and the like. Flexible metal hose is intended for lines other than those employed in connection with safety devices, and where bending is not caused by automatic action. The maximum working pressure is specified in the individual certifications.

Flexible metal hose is not considered a substitute for standard pipe or tubing and its use should be confined to applications where flexible connections cannot be avoided. It should not be subjected to torsional, tensile or excessive bending stresses and should be protected against mechanical damage. It has not been investigated for seismic-motion stress reduction.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C536 (1998), "Flexible Metallic Hose."

UL MARK

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flexible Metal Hose for Combustible Gases and Flammable Liquids."

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GASOLINE HOSE CERTIFIED FOR CANADA (MWHT7)

GENERAL

This category covers synthetic rubber hose in sizes up to and including 31.8 mm inside diameter, intended for use on portable gasoline tanks, discharge devices, and other equipment requiring the use of a flexible hose for conveying gasoline. The month and year of manufacture are shown on the hose.

This category does not cover couplings or their method of attachment.

The hose is intended only for use in ventilated locations.

Hose suitable for use at temperatures down to -54°C may be marked "For use down to -54C."

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S612 (1999), "Hose for Flammable and Combustible Liquids."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Gasoline Hose."

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PROPANE AND NATURAL GAS HOSE ASSEMBLIES CERTIFIED FOR CANADA (MXCQ7)

USE

This category covers propane and natural gas hose assemblies consisting of a length of reinforced hose with a coupling or other connecting fitting attached to each end. They are intended for use in accordance with CAN/CGA-B149.1, "Natural Gas and Propane Installation Code," or the applicable local code requirements, at temperatures down to -40°C (-40°F) and at a maximum working pressure of 2400 kPa gauge (350 psig) unless otherwise noted in the individual certifications.

Unless otherwise indicated in the individual certifications, the hose assemblies have not been investigated for use as flexible connectors in piping systems associated with cargo tanks used for the transportation of propane and natural gas by trucks or trailers.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CGA-8.1 (1986), "Elastomeric Composite Hose and Hose Couplings for Conducting Propane and Natural Gas" and CSA/CAN1-8.3 (1977), "Thermoplastic Hose and Hose Couplings for Conducting Propane and Natural Gas."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "LP-Gas Hose Assembly," "LPG Hose Assembly," "LP-Gas and Natural Gas Hose Assembly," "Propane and Natural Gas Hose Assembly" or "LPG and Natural Gas Hose Assembly," and the appropriate CGA Type as shown in the individual Listings.

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HOSE AND HOSE FITTINGS CERTIFIED FOR CANADA (MYYT7)

FIRE EXTINGUISHER AND BOOSTER HOSE CERTIFIED FOR CANADA (MZMR7)

GENERAL

This category covers uncoupled fire extinguisher and booster hose supplied in trade sizes 8 mm up to and including 32 mm for use on portable, wheeled, and stationary fire extinguishers, and as booster hose on fire apparatus. This hose is intended for use at a maximum working pressure from 1400 to 8750 kPa, as indicated in the individual certifications.

Hose suitable for use at temperatures down to -65°F (-54°C) is marked "-65 F (-54 C)."

Hose suitable for oil-resistant service is marked "Oil Resistant."

This category does not cover couplings or their method of attachment.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S522, "Fire Extinguisher and Booster Hose."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Extinguisher and Booster Hose" (or "Fire Ext. and Booster Hose").

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FIRE HOSE, LINED, UNCOUPLED, FOR MUNICIPAL AND INDUSTRIAL USE CERTIFIED FOR CANADA (MZQE7)

USE

This category covers lined fire hose in the following nominal inside diameter trade sizes: 38, 45, 50, 65, 75, 89, 100, 125 and 150. The jackets are made from cotton and/or synthetic yarns. Single-jacketed hose is intended for use at fire hydrants and similar places where hard usage is not anticipated and where it will not be subjected to chafing on rough or sharp surfaces. Single-jacketed hose may also be made with a cover. Multiple-jacketed hose or single-jacketed hose judged equivalent to multiple-jacketed hose is for use on pumping engines and in places where service conditions require additional protection against wear.

These products have been investigated as uncoupled hose. Couplings may be provided but have not been investigated and are not covered under UL's Certification and Follow-Up Service.

PRODUCT MARKINGS

Hose suitable for use at temperatures down to -65°F (-54°C) may be marked "For use down to -65 F (-54 C)."

Hose resistant to ozone atmospheres may be marked "Ozone Resistant."

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S511, "Lined Fire Hose for Interior Standpipes and Municipal and Industrial Fire Protection Services."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Hose," "Rubber-lined Fire Hose" or "Lined Fire Hose."

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES CERTIFIED FOR CANADA (NBEA7)

This category covers appliances intended for household and similar use. Appliances not intended for normal household use, but which nevertheless may be a source of danger to the public, such as appliances intended for use by laymen in shops, in light industry and on farms, are also covered under this category.

These products are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

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ELECTRIC IRONS CERTIFIED FOR CANADA (NBEZ7)

GENERAL

This category covers household and similar purpose electric dry irons and steam irons, including those with a separate water reservoir or boiler having a capacity not exceeding 5 liters.

All electric irons are either of the automatic type or have an inherent protection means for safeguarding against fire hazard. Electric irons of the automatic type are provided with a form of automatic temperature control (usually a thermostatic control), which operates automatically, within predetermined temperature limits, to open and close the heating-element circuit.

Most products covered under this category are limited to use on alternating current; this limitation is marked on the nameplate.

RELATED PRODUCTS

Garment-finishing appliances are covered under Flatirons and Garment-finishing Appliances Certified for Canada (IKOZ7).

ADDITIONAL INFORMATION

For additional information, see Household and Similar Electrical Appliances Certified for Canada (NBEA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-E60335-1/4E (2003), "Safety of Household and Similar Electrical Appliances – Part 1: General Requirements," and CAN/CSA-E60335-2-3 (2006), "Household and Similar Electrical Appliances – Safety – Part 2-3: Particular Requirements for Electric Irons."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Electric Iron."

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SHAVERS, HAIR CLIPPERS AND SIMILAR APPLIANCES CERTIFIED FOR CANADA (NBKG7)

USE

This category covers electric shavers, hair clippers and similar appliances intended for household and similar purposes with a maximum rated voltage of 250 V.

Appliances not intended for normal household use, but which still may be a source of danger to the public, are also covered under this category. Examples of such appliances are animal clippers, animal shearers and appliances for hairdressers.

This category does not cover:

- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapor or gas)
- massage appliances
- appliances intended for medical purposes

RELATED PRODUCTS

Shavers, Hair Clippers and Similar Appliances Certified for Canada (NBKG7)−*Continued*

Hair clippers and shavers investigated to CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)," are covered under Hair Clipping and Shaving Appliances Certified for Canada (KEFX7).

Personal grooming and manicure appliances are covered under Personal Grooming Appliances Certified for Canada (QGRW7).

Pedicure spas are covered under Plumbing Accessories Certified for Canada (QMTX7).

Massage appliances are covered under Massage and Exercise Machines Certified for Canada (PGXX7).

Appliances intended for medical purposes are covered under Medical Equipment Certified for Canada (PIDF7).

ADDITIONAL INFORMATION

For additional information, see Household and Similar Electrical Appliances Certified for Canada (NBEA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-E60335-1/4E (2003), "Safety of Household and Similar Electrical Appliances, Part 1: General Requirements," and CAN/CSA-E60335-2-8 (2006), "Household and Similar Electrical Appliances – Safety – Part 2-8: Particular Requirements for Shavers, Hair Clippers and Similar Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate::

"Animal Clippers"
"Barber Vacuum"
"Beard Trimmer"
"Commercial Clippers"
"Direct-plug-in Clippers"
"Direct-plug-in Shaver"
"Hair Remover"
"Hair Tweezers"
"Hot Lather Dispenser"
"Household Clippers"
"Lather Dispenser"
"Rechargeable Clippers with Charging Unit"
"Rechargeable Shaver with Charging Unit"
"Shaver"
"Wet/Dry Shaver"

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HOSPITAL SIGNALING AND NURSE CALL ACCESSORY EQUIPMENT CERTIFIED FOR CANADA (NBQW7)

USE AND INSTALLATION

This category covers equipment intended to be used separately or in combination to supplement a hospital nurse call signaling system. Its application is defined by the installation diagram covering the combination of the unit(s) with other units either employed for general hospital signaling use or used to form part of a hospital nurse call signaling system.

The equipment is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Authorities Having Jurisdiction should be consulted before installation.

These units are not intended to be installed in areas where flammable anesthetics are likely to be present. Where equipment has been found suitable for use in oxygen-enriched atmospheres, it is so indicated in the individual certifications and marked on the device.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 125 (1984), "Electromedical Equipment," or CSA-C22.2 No. 205 (1983), "Signal Equipment."

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Hospital Signaling and Nurse Call Equipment" or "Hospital Signaling and Nurse Call Subassembly."

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word "SECURITY" above the UL symbol. The product name is "Hospital Signaling and Nurse Call and Security Equipment" or "Hospital Signaling and Nurse Call and Security Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Hospital Signaling and Nurse Call and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

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HOSPITAL SIGNALING AND NURSE CALL EQUIPMENT CERTIFIED FOR CANADA (NBRZ7)

USE

This category covers units employed for general hospital signaling use, or to form part of a hospital nurse call signaling system.

Where system units are identified as supplementary, they are usually intended for connection to other manufacturer's noncertified equipment. These certified supplementary units have been investigated for their ability to provide isolation between the other noncertified equipment and the other certified system units.

Where system interconnection wiring is supervised for open, ground, and short faults, the supervised conductors/circuits are identified in the individual certifications.

Equipment suitable for use in shower stalls is identified in the individual certifications as "Shower Station."

Equipment suitable for use in oxygen-enriched atmospheres or by patients undergoing oxygen therapy is identified as such in the individual certifications. All other equipment should not be used in oxygen-enriched atmospheres or by patients undergoing oxygen therapy.

INSTALLATION

This equipment is intended to be installed in exact accordance with the instructions in the manufacturer's installation manual included with the equipment, and the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and ANSI/NFPA 99, "Health Care Facilities."

Authorities Having Jurisdiction should be consulted before installation.

To maintain leakage-current levels required by the applicable codes, it is intended that the interconnected wiring of the installed system be segregated (separate conduit) from that of systems which are not certified or certified to other categories not conforming to the leakage-current requirements of ANSI/NFPA 99.

INSTALLATION INSTRUCTIONS/MARKINGS

The individual system units covered under this category are separately certified. These units are tested as a typical system while wired in accordance with the manufacturer's installation instructions and wiring diagram. The individual certifications cover not only the system units but also the installation instructions and wiring diagrams that specify proper interconnection.

Modifications to the system in the field are limited to that described in the installation instructions for that system.

Only equipment certified under a specific system name should be considered as having been tested together and found to be compatible per the installation instructions and wiring diagram. Reference is made in the marking of the control unit to the wiring diagram showing complete information except when the installation wiring diagram is secured to the control unit.

These units are not intended to be installed in areas where flammable anesthetics are likely to be present. Where equipment has been found suitable for use in oxygen-enriched atmospheres it is so indicated in the individual certifications and marked on the device.

Other equipment connected to any system unit covered under this product category is not considered to be part of the system configuration unless the equipment in question is identified by the Listee name and model number in the installation instructions and covered under this category or Hospital Signaling and Nurse Call Accessory Equipment Certified for Canada (NBQW7).

OPERATIONS

System units identified as fundamental perform an essential/required operation whose primary function is to provide notification and/or reset/cancellation of a staff-initiated or patient-initiated call signal to alert the staff. The operations include all of the following:

(a) Call annunciation at a nurse's station (audible and visual),
(b) Call annunciation at the dome light,
(c) Call-placed indicator on the patient station (visual),
(d) Zone annunciation (audible and visual), and
(e) Call reset/cancellation.

Devices that perform fundamental operations are not investigated as being capable of performing supplementary operations.

A supplementary device is a device that is electrically isolated and not investigated as a fundamental device. A supplementary operation is an operation that is adjunct to the fundamental operation so that the failure of such will have no effect on the fundamental operation of the nurse call system.

Various system units may additionally annunciate fire alarm signals. These signals are supplementary only and these system units have not been investigated as fire-protective signaling system units.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 125 (1984), "Electromedical Equipment," or CSA-C22.2 No. 205, "Signal Equipment."

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL symbol with the word "SIGNALING" above the UL Mark for Canada symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Hospital Signaling and Nurse Call Equipment" or "Hospital Signaling and Nurse Call Subassembly."

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word "SECURITY" above the UL symbol. The product name is "Hospital Signaling and Nurse Call and Security Equipment" or "Hospital Signaling and Nurse Call and Security Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Fire Alarm," "and General Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Hospital Signaling and Nurse Call and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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HOUSEHOLD BURGLAR ALARM SYSTEM UNITS CERTIFIED FOR CANADA (NBSX7)

USE AND INSTALLATION

This category covers the individual units that may be interconnected to form an electrically operated household burglar alarm system. These units include a main control unit (with integral or separate power supply), intrusion detection devices (contacts, motion detectors, sound detectors, etc.), and alarm-indicating devices (bells, relays, etc.).

Combination Control Unit — A control unit may additionally include circuit facilities for connection to fire alarm devices to form a combination fire-burglary control unit. In such a combination unit the fire alarm signal takes precedence over the burglar alarm signal and a distinction between alarm signals is required. A common trouble signal may be employed for both.

Modular Control or Combination Unit — A control unit may be prewired at the factory or assembled from readily installed modules. A certified fire module can be added after the unit is installed to expand the system's capability. The installation diagram indicates the type and number of modules that can be employed in a control unit.

Control Unit Accessory — A special unit assembly intended to be separately connected within a system and which is suitable for use only with a specific control unit.

An installation drawing is employed as the controlling factor to ensure proper interconnection among units. The drawing may be attached to the control unit, provided detached, or included as part of an instruction or installation booklet.

An instruction booklet illustrating typical installation layouts, operation, maintenance, servicing, and test procedures is provided for each household burglar alarm system or unit.

Provision may be made for transmitting a signal to a remote location.

This category also covers self-contained units that incorporate detection, alarm and power supply components in a single enclosure.

Individual units are certified under UL's Follow-Up Service. A Certification Mark is required to identify certification of each control unit comprising a household burglar alarm system, except for those devices, such as alarm-sounding devices, contacts, motion detectors and other burglar alarm devices, which are covered separately under their own category.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Household" or "Residential" and the specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1023, "Preliminary Standard for Household Burglar Alarm System Units."

UL MARK

The Security Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Equipment" or "Subassembly."

When applicable, the Signaling Mark is also included. The combined Signaling/Security Listing Mark consists of the Security Mark elements detailed above and the word "SIGNALING" above the UL symbol. The product name is "Fire Alarm and Security Equipment" or "Fire Alarm and Security Subassembly."

Some of these products are also Listed under other Signaling and Information Technology or Telephone categories. When applicable, the product name may include "and General Signaling," "and Emergency Signaling," "and Information Technology" or "and Telephone," as appropriate (e.g., "Security Equipment and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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HYDROMASSAGE BATHTUBS CERTIFIED FOR CANADA (NCHX7)

GENERAL

This category covers indoor hydromassage bathtubs (also known as whirlpool baths) rated 250 V or less, intended for residential and commercial use, for permanent connection to the building plumbing.

A hydromassage bathtub consists of a drainable tub, a recirculating pump and optional equipment such as lights, a heater, a control and an air-blower.

A bathtub may also be provided with an air-blower and no recirculating pump.

Hydromassage bathtubs are intended for connection to circuits protected by ground-fault circuit interrupters.

INSTALLATION INSTRUCTIONS

Factory Configuration Information — Each hydromassage bathtub is provided with a configuration sheet to identify the main factory-installed components of the unit. These components include pumps, controls, heaters and lighting fixtures. The configuration sheet and the installation instructions are intended to be available during installation and inspection. This configuration sheet also includes a list of optional accessories suitable for field addition to the product.

RELATED EQUIPMENT

Portable hydromassage equipment is covered under Personal Hygiene and Health Care Appliances Certified for Canada (QGRZ7).

Prefabricated steam baths and showers are covered under Prefabricated Assemblies, Sections and Units Certified for Canada (QQXX7).

Sauna and steam bath heating equipment is covered under Heaters, Sauna and Steam Bath Certified for Canada (KPJV7).

Self-contained spas and hot tubs are covered under Self-contained Spas Certified for Canada (WCZW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-B45.10, ''Hydromassage Bathtubs,'' and CSA-C22.2 No. 218.2, ''Hydromassage Bathtub Appliances.''

The suction fittings used in these hydromassage bathtubs have been investigated with respect to body and hair entrapment to ANSI/ASME A112.19.7/CSA B45.10 (2012), ''Hydromassage Bathtub Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Hydromassage Bathtub.''

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ILLUMINATING APPLIANCES, GAS FIRED, INDOOR/OUTDOOR CERTIFIED FOR CANADA (NCOG7)

USE AND INSTALLATION

This category covers gas-fired illuminating appliances rated 5,000 Btu/h or less per burner, intended for indoor or outdoor use. These include lamps and fixtures and the like as identified in the individual certifications. These appliances are stationary and intended for attachment to a fixed gas piping system or a self-contained liquefied petroleum gas supply system. A means of support is provided by the manufacturer as part of the appliance.

Gas-fired illuminating appliances are intended to be installed in accordance with markings on the appliance pertaining to clearances and types of surfaces. Appliances suitable for built-in installation or side-by-side mounting are indicated in the installation instructions. Each appliance is marked to indicate whether it is suitable for indoor (I) installation, outdoor (O) installation, or both (I/O).

These heating gas appliances operate at an inlet gas pressure not to exceed 1/2 psig (3.5 kPa).

Applicable codes and Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to installation and connection to the fuel supply.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is the current edition and effective addendum thereto of CSA/CAN 1-2.15, ''Gas-Fired Domestic Lighting Appliances.''

UL MARK

The Gas-fired Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Gas-fired Listing Mark for these products includes the UL Mark for Canada symbol with the words ''GAS-FIRED'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the standard designation ''CSA CAN 1-2.15(+)-(++) Gas-Fired Domestic Lighting Appliance.''

(+) Suffix letter of latest addendum if applicable

(++) Issue year of latest addendum or standard

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INCUBATORS AND BROODERS CERTIFIED FOR CANADA (NHYZ7)

USE

This category covers portable and stationary electric incubators and brooders, rated 250 V or less, intended for use on farms and commercial hatcheries in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 102 (1958), ''Construction and Test of Brooders and Incubators.''

Additional standards may be applicable based on the features employed.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Incubator'' or ''Brooder.''

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INDUSTRIAL CONTROL EQUIPMENT CERTIFIED FOR CANADA (NIMX7)

This category covers the following devices:

- Electro-sensitive protective equipment
- Industrial control panels
- Industrial control switches
- Motor control centers
- Motor controllers
- Motor controllers over 1500 V
- Motor controller accessories over 1500 V
- Power circuit and motor-mounted apparatus
- Power conversion equipment
- Programmable controllers
- Protective relays
- Proximity switches

Enclosure Type ratings — Enclosed industrial control equipment identified with an Enclosure Type designation and is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for

Canada (AALZ7). Only Enclosure Type designations associated with the UL Listing Mark have been certified by UL. Open-type components investigated for mounting through the wall of specific Enclosure Types are marked "Suitable for use on a flat surface of a Type ____ enclosure," or the equivalent, and are provided with instructions and mounting hardware.

Open-type equipment — Unless otherwise specified in the instructions or markings on the product, open-type industrial control equipment is intended for installation within enclosures supplied in the field.

Field-wiring connections — Industrial control equipment is for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Accessories — Industrial control equipment for which accessory kits are available for the field or distributor modification of the basic product or which may be assembled in many forms from separate components are marked to indicate the suitable accessories or separate components which may be used.

Coil ratings — Unless otherwise marked, the sealed volt-ampere rating of the operating coil circuit of a magnetically-operated industrial control device is as tabulated below. For a magnetically-operated industrial control device with an ac coil, the device is investigated for operation over a range of +10% and -15% of the rated control circuit voltage. For a magnetically-operated industrial control device with a dc coil, the device is investigated for operation over a range of +10% and -20% of the maximum rated control circuit voltage.

Marked Contact Rating of Device, Amperes	Maximum Coil Volt-Amperes
30 A or less	30 VA
50 A or less	75 VA
150 A or less	100 VA
300 A or less	125 VA

Voltage ratings — Industrial control equipment is marked with the maximum voltage rating for the intended loads. When the marked voltage rating is included in one of the voltage ranges tabulated below, the equipment has been investigated for use at the corresponding maximum voltage of the range:

Marked Voltage Rating of Equipment	Maximum Use Voltage
110 – 120	120
220 – 240	240
254 – 277	277
380 – 415	415
440 – 480	480
550 – 600	600

Frequency — Unless otherwise marked on the equipment, industrial control equipment is intended for use on alternating-current supply with a rated frequency of 50/60 Hz.

Load type — Unless otherwise marked on the equipment, an ampere rating assigned to industrial control equipment is considered to be a general-purpose rating for use with a load that is continuous or with an inrush current that does not exceed the ampere rating of the device. For other specific load types, the rating is followed by one of the following terms:

Marked Rating on Device	Intended Load Type
Amperes	General use
Amperes, resistive (or res.)	Resistive
Amperes, resistance	Heater load
Amperes, ballast	Electric discharge lamp magnetic ballast load
Amperes, electronic ballast	Fluorescent lamp electronic ballast load
Amperes or watts, tungsten	Incandescent lamp load
Code designation, volt-amperes	Coil, standard or heavy duty (pilot duty)
Amperes, kVar	Capacitor switching load, full load amperes
Hp	Motor load
FLA/LRA	Hermetic refrigeration compressor motor

Number of poles — Unless otherwise marked, an industrial control device rated for a single-phase load has been investigated for controlling a single-phase load using one pole of the controller. A controller rated for a three-phase load has been investigated for controlling the three-phase load using two poles of the controller. For an industrial control device marked "break all lines" or the equivalent, such as by means of a wiring diagram, a switched pole is intended to be connected to each conductor supplying the load.

Number of phases — A marked rating for which the number of phases is not specified is considered to be for a single-phase circuit.

Ambient temperature rating — Unless otherwise specified on the product or on instructions provided with the product, enclosed industrial control equipment and open-type equipment, when installed in an enclosure, is intended for use in an ambient temperature of 0°C – 40°C (32°F – 104°F).

Surrounding air-temperature rating — Some open-type equipment is marked with a surrounding air-temperature rating. Such equipment is intended to be installed within an enclosure having sufficient volume and ventilation or is provided with additional cooling means such that while the equipment is in operation, the air immediately surrounding the equipment within the ultimate enclosure does not exceed the marked surrounding air-temperature rating.

Functional Safety and Electromagnetic Compatibility (EMC) — Unless specifically indicated in the Guide Information for each product category, the equipment listed above has not been subjected to investigation with respect to its use in applications involving functional safety or EMC.

Service equipment markings — Some industrial control equipment is suitable for use as service equipment and may be so marked. Such marking is part of the Listing Mark or is an integral part of other required markings.

Some industrial control equipment incorporates neutrals that are insulated from the frame or enclosure. Such units are marked "Suitable for Use as Service Equipment." Some industrial control equipment incorporates neutrals factory bonded to the frame or enclosure. Such units are marked "Suitable Only for Use as Service Equipment."

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ELECTRO-SENSITIVE PROTECTIVE EQUIPMENT CERTIFIED FOR CANADA (NIOZ7)

This category covers electro-sensitive protective equipment (ESPE) for the safeguarding of machinery. ESPE is applied to machinery that presents a risk of personal injury. It provides protection by causing the machine to revert to a safe condition before a person can be placed in a hazardous situation. In addition to fire and electric shock hazards, these devices have been investigated for their safety-related performance features.

ESPE is designated as a certain "Type" as shown in the individual Listings and as defined in IEC 61496-1, Safety Of Machinery-Electro-Sensitive Protective Equipment-Part 1: General Requirements And Tests. In addition, the individual Listings identify products that also have been investigated to UL 1998, the Standard for Safety Related Software.

This category does not specify the dimensions or configuration of the sensing zone and its disposition in relation to hazardous parts for any particular application, nor what constitutes a hazardous state of any machine. It is restricted to the functioning of the ESPE, the means by which it monitors the condition of the machine, and how it interfaces with the machine controls.

Products covered in this category may be relevant to applications other than those for the protection of persons, for example for the protection of machinery or products from mechanical damage. In those applications additional requirements may be necessary, for example when the materials that have to be recognized by the sensing function have different properties from those of persons.

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Active Opto-electronic Protective Devices Certified for Canada (NIPF7)

GENERAL

This category covers electro-sensitive protective equipment (ESPE) for the safeguarding of machinery, employing active opto-electronic protective devices (AOPD) for the sensing function.

The sensing function is performed by opto-electronic emitting and receiving elements detecting the interruption of optical radiations generated, within the device, by an opaque object present in the specified detection zone.

This category does not cover AOPDs employing radiation at wavelengths outside the range 400 nm to 1,500 nm.

RELATED PRODUCTS

Electro-sensitive protective equipment (ESPE) for the safeguarding of machinery, employing active opto-electronic protective devices responsive

Active Opto-electronic Protective Devices Certified for Canada (NIPF7)−*Continued*

to diffuse reflection (AOPDDR) for the sensing function is covered under Active Opto-electronic Protective Devices Responsive to Diffuse Reflection Certified for Canada (NIPM7).

Electro-sensitive protective equipment (ESPE) employing vision-based protective devices (VBPDs) for the safeguarding of machinery is covered under Active Opto-electronic Protective Devices Employing Vision-based Protective Devices Certified for Canada (NIPJ7).

ADDITIONAL INFORMATION

For additional information, see Electro-sensitive Protective Equipment Certified for Canada (NIOZ7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, ''Industrial Control Equipment,'' CAN/CSA-C22.2 No. 0.8, ''Safety Functions Incorporating Electronic Technology,'' IEC 61496-1, ''Safety of Machinery – Electro-Sensitive Protective Equipment – Part 1: General Requirements and Tests,'' and IEC 61496-2, ''Safety of Machinery – Electro-sensitive Protective Equipment – Part 2: Particular Requirements for Equipment Using Active Opto-electronic Protective Devices (AOPDs).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electro-sensitive Protective Equipment'' (or ''ESPE'') or ''Active Opto-electronic Protective Device'' (or ''AOPD''), or other appropriate product name as shown in the individual Listings.

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Active Opto-electronic Protective Devices Employing Vision-based Protective Devices Certified for Canada (NIPJ7)

GENERAL

This category covers electro-sensitive protective equipment (ESPE), employing vision-based protective devices (VBPDs) for the safeguarding of machinery.

The sensing function is performed by single-image sensing devices viewing one two-dimensional image against a passive pattern as the background and where the detection principle is blocking the view of the pattern.

RELATED PRODUCTS

Electro-sensitive protective equipment (ESPE) for the safeguarding of machinery, employing active opto-electronic protective devices (AOPD) for the sensing function is covered under Active Opto-electronic Protective Devices Certified for Canada (NIPF7).

Electro-sensitive protective equipment (ESPE) for the safeguarding of machinery, employing active opto-electronic protective devices responsive to diffuse reflection (AOPDDR) for the sensing function is covered under Active Opto-electronic Protective Devices Responsive to Diffuse Reflection Certified for Canada (NIPM7).

ADDITIONAL INFORMATION

For additional information, see Electro-sensitive Protective Equipment Certified for Canada (NIOZ7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, ''Industrial Control Equipment,'' CAN/CSA-C22.2 No. 0.8, ''Safety Functions Incorporating Electronic Technology,'' IEC 61496-1, ''Safety of Machinery – Electro-Sensitive Protective Equipment – Part 1: General Requirements and Tests,'' and IEC TR 61496-4, ''Safety of Machinery – Electro-Sensitive Protective Equipment – Part 4: Particular Requirements for Equipment Using Vision Based Protective Devices (VBPD).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electro-sensitive Protective Equipment'' (or ''ESPE'') or ''Active

Active Opto-electronic Protective Devices Employing Vision-based Protective Devices Certified for Canada (NIPJ7)−*Continued*

Opto-electronic Protective Device Employing Vision-based Protection Devices'' (or ''AOPDVBPD''), or other appropriate product name as shown in the individual Listings.

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Active Opto-electronic Protective Devices Responsive to Diffuse Reflection Certified for Canada (NIPM7)

GENERAL

This category covers electro-sensitive protective equipment (ESPE) for the safeguarding of machinery, employing active opto-electronic protective devices responsive to diffuse reflection (AOPDDR) for the sensing function.

The sensing function is performed by opto-electronic devices which respond to the diffused reflection from an opaque object present in the specified detection zone of their incident light.

RELATED PRODUCTS

Electro-sensitive protective equipment (ESPE) for the safeguarding of machinery, employing active opto-electronic protective devices (AOPD) for the sensing function is covered under Active Opto-electronic Protective Devices Certified for Canada (NIPF7).

Electro-sensitive protective equipment (ESPE) employing vision-based protective devices (VBPDs) for the safeguarding of machinery is covered under Active Opto-electronic Protective Devices Employing Vision-based Protective Devices Certified for Canada (NIPJ7).

ADDITIONAL INFORMATION

For additional information, see Electro-sensitive Protective Equipment Certified for Canada (NIOZ7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, ''Industrial Control Equipment,'' CAN/CSA-C22.2 No. 0.8, ''Safety Functions Incorporating Electronic Technology,'' IEC 61496-1, ''Safety of Machinery – Electro-Sensitive Protective Equipment – Part 1: General Requirements and Tests,'' and IEC 61496-3, ''Safety of Machinery – Electro-sensitive Protective Equipment – Part 3: Particular Requirements for Active Opto-electronic Protective Devices Responsive to Diffuse Reflection (AOPDDR).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electro-sensitive Protective Equipment'' (or ''ESPE'') or ''Active Opto-electronic Protective Device Responsive to Diffuse Reflection'' (or ''AOPDDR''), or other appropriate product name as shown in the individual Listings.

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INDUSTRIAL CONTROL PANELS CERTIFIED FOR CANADA (NITW7)

GENERAL

This category covers industrial control panels, which are factory-wired assemblies of industrial control equipment, such as motor controllers, switches, relays and auxiliary devices. The panels may include disconnect means and motor branch-circuit protective devices. An industrial control panel does not include the controlled loads, including motors, luminaires, heaters, or utilization equipment.

An enclosed industrial control panel is comprised of the enclosure, all components located within the enclosure, and all components mounted to the walls of the enclosure.

An open industrial control panel is comprised of a mounting sub-panel and all components mounted to the sub-panel, and is intended for installation into an enclosure in the field.

Industrial Control Panels Certified for Canada (NITW7)−*Continued*

This category also covers industrial control panel enclosures. The enclosures may contain ventilation openings, observation windows, conduit fittings, environmental control devices, or maintenance luminaires. Industrial control panel enclosures are intended to house open-type industrial control panels or individual items of industrial control equipment installed in the field.

Unless otherwise marked, industrial control panels covered under this category are intended for general-use industrial applications for control of heaters, lighting, motors or pump loads, or a combination of these loads, and are intended for installation in accordance with Sections 28, 30 and 62 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Industrial control panels marked "Industrial Control Panel for Industrial Machinery" on the unit nameplate have been investigated to determine that they meet the requirements of CSA-C22.2 No. 73, "Construction and Test of Electrically Equipped Machine Tools." Industrial control panels designated for control of industrial machinery may not be suitable for use with other equipment.

Industrial control panels marked "Flame Control Panel" on the unit nameplate contain controls for fossil fuel-burning equipment, such as incinerators, kilns, and drying ovens, intended for industrial applications. These control panels may additionally contain controls for other loads.

Industrial control panels marked "Crane Control Panel" or "Hoist Control Panel" on the unit nameplate contain controls for overhead cranes and hoists for industrial applications. These panels may not be suitable for use with equipment other than cranes and hoists.

Industrial control panels marked "Industrial Control Panel for Refrigeration Equipment" or "Industrial Control Panel for Air Conditioning Equipment" on the unit nameplate contain controls for hermetic refrigerant compressor motors for industrial applications. Industrial control panels designated for control of refrigeration equipment may not be suitable for use with equipment other than refrigeration equipment.

Industrial control panels marked "Fountain Control Panel" on the unit nameplate are intended for control of permanently installed fountains or floating fountains.

Industrial control panels are not intended for installation in motor control center sections or units.

RATINGS

Industrial control panels are rated 600 V or less. Each power circuit output from the control panel is rated in current or power, voltage, and the intended load type, such as a motor. Each supply input to the industrial control panel is rated in full load amperes, rating of largest motor load, voltage, number of phases, and frequency. Each supply input is additionally provided with a short-circuit current rating indicating the maximum rms symmetrical amperes and voltage available at the input terminals of the industrial control panel or, for an industrial control panel not supplied with branch-circuit protection, the maximum rms symmetrical amperes and voltage available on the line side of the overcurrent protection installed in the field.

ENVIRONMENTAL RATINGS

Industrial control panel enclosures are marked with the enclosure type ratings for which they were investigated.

Enclosed industrial control panels are marked with an enclosure type rating. The type rating of the industrial control panel may differ from the rating of the basic enclosure due to the presence of components or assemblies installed through the enclosure walls by the manufacturer.

PRODUCT MARKINGS

Industrial control panels are marked with the electrical ratings for each source of supply to the panel. The panel or wiring diagram provided with the panel is marked with the electrical ratings of the intended load equipment, such as motors, heaters, lighting, or appliance loads. Industrial control panels are provided with a complete schematic diagram of the panel as built by the manufacturer. When the schematic wiring diagram includes components that are not supplied with the industrial control panel, such as remote control devices, motors or similar devices, a notation or similar means is used to identify such components. When additional installation instructions are provided on a separate drawing, a reference to the drawing containing the information is marked on the nameplate of the industrial control panel.

The nameplate of industrial control panels is marked with the short-circuit current rating for each supply as follows: "Short circuit current: ___ kA rms symmetrical, ___ V maximum," or the equivalent.

SPECIAL CONSIDERATIONS

These control panels are investigated for electrical fire and shock hazards only. The investigation of industrial control panels does not include investigation of the adequacy of the control and protective devices to supervise the functioning of the controlled equipment.

Special relationships and investigations may be necessary for the proper operation of certain equipment, as noted below:

1. Industrial control panels investigated with air conditioning and refrigeration equipment are covered under Heating and Cooling Equipment Certified for Canada (LZFE7) or Specialty Refrigeration Equipment Certified for Canada (SROT7).
2. Industrial control panels investigated with industrial machinery are covered under Factory Automation Equipment Certified for Canada (GPNY7).
3. Flame control panels investigated with specific burner assemblies are covered under Commercial/Industrial Gas Burners Certified for Canada (KXWT7), Gas-Oil Burners Certified for Canada (KYKR7) or Oil Burners Certified for Canada (KYXZ7).
4. Fluid-handling systems consisting of industrial control panels, pumps, valves, gauges, and piping mounted to a structural base are covered under Packaged Pumping Systems Certified for Canada (QCZJ7).
5. Control panels investigated for use with flammable-liquid dispensing devices are covered under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7). Liquids with a flash point below 37.8°C (100°F) are defined as flammable. Liquids with a flash point of 37.8°C (100°F) and above are defined as combustible.
6. Control panels intended for use in motor control center sections or units are covered under Motor Control Centers Certified for Canada (NJAV7).

RELATED PRODUCTS

Enclosures for general-use electrical equipment or wiring are covered under Boxes, Junction and Pull Certified for Canada (BGUZ7) or Cabinets and Cutout Boxes Certified for Canada (CYIV7).

Control panels intended for elevators, dumbwaiters, escalators, moving walks, inclined lifts and their associated equipment are covered under Elevator Control Panels Certified for Canada (FQPB7).

Control panels with connection to sensors or initiating devices to detect and activate emergency alarms are covered under Signal System Units Certified for Canada (UDTZ7).

Control equipment intended to supply automatic illumination, power, or both, to critical areas and equipment essential to safety of human life is covered under Emergency Lighting and Power Equipment Certified for Canada (FTBR7).

Freestanding motor control center sections, motor control center units and equipment intended for field installation into a motor control center are covered under Motor Control Centers Certified for Canada (NJAV7).

Control panels intended for installation in hazardous (classified) locations are covered under Control Panels and Assemblies for Use in Hazardous Locations Certified for Canada (NNNY7).

Control panels provided with intrinsically safe circuits for extension into hazardous (classified) locations are covered under Industrial Control Panels Relating to Hazardous Locations Certified for Canada (NRBX7).

Cabinets, enclosures and rack/frame systems that include components and assemblies intended to power, protect, heat, cool or otherwise support information technology (IT), telecommunications equipment, or audio/video equipment (A/V) are covered under Information Technology and Communications Equipment Cabinet, Enclosure and Rack Systems Certified for Canada (NWIN7).

Equipment intended for the control of fuel cells, photovoltaic systems, or utility interactive systems are covered under Static Inverters and Converters for Use in Independent Power Systems Certified for Canada (QIKH7).

Portable control panels containing switches, overcurrent protection, and that are cord connected via attachment plugs and receptacles for use at carnivals, circuses, fairs, exhibition halls, motion picture and television studios, theaters, construction sites and similar locations are covered under Portable Power Distribution Units and Devices Certified for Canada (QPSH7).

Assemblies comprised of equipment such as circuit breakers, fuses, switches, and related accessory equipment and intended to distribute power to field installed communications equipment are covered under Power Distribution Centers for Communications Equipment Certified for Canada (QPQY7).

Controllers intended for electric fire pumps are covered under Pump Controllers, Fire Certified for Canada (QYZS7).

Control panels containing electrical control units for use in fire-protective signaling systems are covered under Control Units, Releasing Device Certified for Canada (SYZV7), Control Units, System Certified for Canada (UOJZ7) or Smoke Control System Equipment Certified for Canada (UUKL7).

Control panels intended for use with equipment for water-play fountains and water playground areas, swimming pools and spas, or fountains with water in common with swimming pools are covered under Controls Certified for Canada (WAWU7).

Freestanding assemblies of circuit breakers and busses for control of electric light and power circuits of equipment for installation into dead-front switchboards are covered under Switchboards, Dead-front Certified for Canada (WEVZ7).

Industrial Control Panels Certified for Canada (NITW7)−*Continued*

Industrial Control Panels Certified for Canada (NITW7)−*Continued*

Enclosed assemblies consisting only of lengths of busbars, terminal strips, or terminal blocks with provision for wire connectors to accommodate incoming or outgoing conductors for power circuits are covered under Termination Boxes Certified for Canada (XCKT7).

ADDITIONAL INFORMATION

For additional information, see Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, "Industrial Control Equipment."

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Open Industrial Control Panel," "Enclosed Industrial Control Panel" or "Industrial Control Panel Enclosure."

The "Enclosed Industrial Control Panel" Listing Mark covers both the enclosure and the provided panel. Open panels employ the "Open Industrial Control Panel" Listing Mark. The "Industrial Control Panel Enclosure" Listing Mark covers only the enclosure; the compatibility of the enclosure and the installed equipment and associated wiring has not been investigated unless an "Enclosed Industrial Control Panel" Listing Mark is also present.

* *

MOTOR CONTROL CENTERS CERTIFIED FOR CANADA (NJAV7)

GENERAL

This category covers motor control centers, which are floor-mounted assemblies of one or more enclosed vertical sections having a common horizontal power bus and primarily containing combination motor control units. In addition, motor control centers may contain other types of units, such as relay units, circuit breaker units, disconnect switch units, or panelboard units. Units are mounted one above the other in the vertical sections. Power may be supplied to the individual units by vertical power bus or, if the bus is omitted, by suitable wiring to the horizontal bus.

A combination motor control unit includes an externally operable circuit disconnecting means, branch circuit overcurrent protection, and a motor controller. Motor control centers are intended for installation in accordance with Section 28 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Motor control center sections and units are rated 600 V maximum.

Motor control center sections are rated for the maximum current for horizontal and vertical bus. A motor control center section is marked "Short-circuit current rating amps – RMS symmetrical volts – maximum. Do not install on circuits with available short-circuit currents greater than the lowest short-circuit rating of any installed unit," or the equivalent.

Combination motor control center units are rated in horsepower. A motor control center unit is marked "Unit short-circuit current rating – RMS symmetrical amps – volts maximum, when equipped with fuse or circuit breaker," or the equivalent.

A motor control center section or enclosure investigated for outdoor use in marked "Rainproof." A motor control center enclosure is intended to enclose one or more motor control center sections.

USE AS SERVICE EQUIPMENT

The marking "Suitable For Use As Service Equipment" appears on each motor control center section optionally intended for use at a service.

Some motor control center sections incorporate neutrals factory bonded to the enclosure. Such sections are marked "Suitable Only For Use As Service Equipment."

A section marked for use at services may also be used to provide the main control and disconnecting means for a separately derived system.

RELATED PRODUCTS

For information concerning overcurrent protective devices for motor controllers, see Motor Controllers Certified for Canada (NJOT7).

ADDITIONAL INFORMATION

For additional information, see Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 254 (2005), "Motor Control Centres."

UL MARK

Motor Control Centers Certified for Canada (NJAV7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Motor Control Center Unit," "Motor Control Center Section" or "Motor Control Center Rainproof Enclosure."

The Listing Mark for motor control center sections also includes the marking "___ of ___." The first space is stamped with a number indicating the position that the section occupies in the series of sections constituting the motor control center. The latter space is stamped with the total number of sections in the motor control center. The Listing Mark on the motor control center section does not cover the individual units that are installed in the section.

The splice bus for interconnecting horizontal bus of abutting vertical sections in the series is also covered by the section Listing Mark.

Each Listed motor control center unit is identified by its own Listing Mark. Only those sections and units that bear the Listing Mark are covered under UL's Follow-Up Service.

* *

MOTOR CONTROLLERS OVER 1500 VOLTS CERTIFIED FOR CANADA (NJHU7)

GENERAL

This category covers enclosed motor controllers having ac voltage ratings above 1500 V but not more than 7.2 kV, intended for starting, stopping, regulating, controlling, or protecting electric motors or other electrical loads, including refrigeration equipment.

This equipment has been investigated for use on three-phase circuits having available fault levels not exceeding the MVA rating appearing on the nameplate. The three-phase available symmetrical MVA is equal to the product of the available symmetrical rms short-circuit current, the line-to-line open circuit voltage, and a phase factor of 1.73×10^6.

Motor controllers are intended for across-the-line starting and for making and breaking the circuit when the motor is stalled; accordingly, they are tested at six times the continuous current rating of the controller at rated voltage.

Some motor controllers are provided with an integrally mounted surge arrester to meet the required impulse withstand.

These motor controllers are substantially complete when shipped from the factory and final acceptability for service does not depend upon assembly of parts in the field.

These motor controllers may consist of a single vertical section housing one or more individual controllers or may consist of several abutting vertical sections intended for interconnection by means of a suitable horizontal bus. These vertical sections are normally freestanding; however, a single motor controller may be provided in a construction intended for wall mounting.

ARC-RESISTANT MOTOR CONTROLLERS

Motor controllers specially designed to provide some degree of protection to an operator, or other personnel in the vicinity of the equipment, from the effects of an internal arc occurring in atmospheric air within the enclosure when the doors and covers are secured as intended may additionally be Classified as arc-resistant motor controllers.

Arc-resistant motor controllers have been investigated for installation in buildings (for indoor applications) that have sufficient overhead space to permit venting without reflecting arc products, as specified in the installation instructions.

Arc-resistant motor controllers are marked with an Accessibility Type designation of Type 1, 1C, 2 or 2C, based upon the construction.

Type 1 designates motor controllers with arc-resistant construction at the front only.

Type 1C designates motor controllers with arc-resistant construction at the front, and between compartments within the same section or adjacent sections.

Type 2 designates motor controllers with arc-resistant construction at the front, sides and rear.

Type 2C designates motor controllers with arc-resistant construction at the front, sides and rear, and between compartments within the same section or adjacent sections.

In Type 1C or 2C equipment, a fault in a main busbar compartment may propagate into the main busbar compartments of adjacent sections.

ADDITIONAL INFORMATION

Motor Controllers Over 1500 Volts Certified for Canada (NJHU7)−*Continued*

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment,'' in addition to the requirements contained in CSA Technical Information Letter No. D-21, ''Interim Certification Requirements for Control Devices Rated at More Than 1500 V But Not More Than 7200 V, for Electric Motors,'' and/or CSA-C22.2 No. 253 (2009), ''Medium-Voltage AC Contactors, Controllers, and Control Centres.''

In addition to the requirements noted above, the standard used to investigate motor controllers Classified as ''arc resistant'' is CSA-C22.2 No. 0.22 (2011), ''Evaluation Methods for Arc Resistance Ratings of Enclosed Electrical Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''High Voltage Industrial Control Equipment'' or ''High Voltage Motor Control Equipment Section.''

The Listing Mark for high-voltage motor control equipment sections also includes the designation ''____ of ____.'' The first blank is stamped with the number indicating the position that the section occupies in the series of sections constituting the high-voltage motor control equipment. The second blank is stamped with the total number of sections in the high-voltage motor control equipment (including sections not bearing a UL Listing Mark).

Each Listed high-voltage motor control equipment section consists of one or more high-voltage industrial control equipment units. Each Listed high-voltage industrial control equipment unit is individually identified as a Listed product.

Classification Mark for Arc-resistant Motor Controllers

The Classification Mark of UL on motor controllers investigated as arc resistant is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark consists of the appropriate Listing Mark (noted above) and the following additional information:

ARC-RESISTANT MOTOR CONTROLLER
ALSO CLASSIFIED IN ACCORDANCE WITH CSA-C22.2 NO. 0.22

The Classification Mark appears on the front of each vertical section eligible for Classification. The Classification Mark covers only the vertical section to which it is affixed; it does not cover other vertical sections included in the assembly, or removable units. Each vertical section of a line-up of abutting vertical sections is provided with a ''____ of ____'' marking, where the first blank indicates the position (from left to right) of the vertical section bearing the UL Mark, and the second blank indicates the total number of vertical sections (including sections not bearing the UL Mark).

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Power Conversion Equipment, Medium Voltage Certified for Canada (NJIC7)

GENERAL

This category covers enclosed power conversion equipment with primary voltage ratings of 1501–7200 V, intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' This equipment supplies power to control a motor or motors operating at a frequency or voltage different than the input supply voltage. This category also covers power-supply modules, input and output modules, SCR or transistor output modules, dynamic braking modules, and input/output accessory kits for medium-voltage power conversion equipment.

PRODUCT MARKINGS

Medium-voltage power conversion equipment incorporating overload protection for motors is marked to indicate the level of protection provided in percent of full-load current. Where such protection is adjustable, a marking with instructions for adjustment is provided. Equipment not providing motor overload protection is marked to indicate motor protection, such as overload relays, or a thermally protected motor must be otherwise provided.

Medium-voltage power conversion equipment is marked with the following electrical ratings:

Power Conversion Equipment, Medium Voltage Certified for Canada (NJIC7)−*Continued*

- **Input Ratings:** Voltage, maximum continuous input current, frequency, number of phases, maximum allowable system symmetrical short-circuit current, and impulse withstand.
- **Output Ratings:** Maximum output voltage, rated continuous current, frequency range, and number of phases.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers Over 1500 V Certified for Canada (NJHU7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment,'' in addition to the requirements contained in CSA Technical Information Letter No. D-21, ''Interim Certification Requirements for Control Devices Rated at More Than 1500 V But Not More Than 7200 V, for Electric Motors.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Medium Voltage Power Conversion Equipment.''

* *

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MOTOR CONTROLLERS CERTIFIED FOR CANADA (NJOT7)

This category covers the following devices rated 600 V or less, and those rated 601–1500 V:

Auxiliary devices
Combination motor controllers
Float- and pressure-operated motor controllers
Magnetic motor controllers
Manual motor controllers
Mechanically-operated and solid-state motor controllers
Overload relays
Power conversion equipment

Horsepower ratings — Unless otherwise marked, motor controllers with three-phase horsepower ratings are intended for use with induction-type squirrel cage Design B, C or D motors. Motor controllers intended for across-the-line starting and for making and breaking the circuit when the motor is stalled are tested at rated voltage and locked-rotor current. The tested locked-rotor current is at six times the motor full-load running current for ac ratings, and at ten times the motor full-load running current for dc ratings. For motor ratings in excess of 500 hp, the full-load current and locked-rotor currents are also specified. Some motor controllers are marked with full-load current (FLA) and locked-rotor current (LRA) in lieu of horsepower when they are intended to control motors equivalent to 2 hp or smaller.

Overload relay tripping class — Overload relays or industrial control equipment incorporating overload relays are identified as to their maximum tripping time at 600% of the overload relay current-element trip rating. The designations ''Class 10,'' ''Class 20'' and ''Class 30'' are used to identify the maximum tripping times, with the Class number indicating the maximum tripping time in seconds. Overload relays with maximum tripping times of 10 or 30 seconds are marked ''Class 10'' and ''Class 30,'' respectively. Overload relays with a maximum tripping time of 20 seconds may be marked ''Class 20.'' Overload relays with tripping times in excess of 30 seconds are marked with their maximum tripping times. All unmarked overload relays have a maximum tripping time of 20 seconds.

Overload relay instructions — Open-type overload relays with replaceable heater elements, or adjustable or electronic settings, are provided with additional instructions on an adhesive-backed label that is intended to be adhered to the ultimate enclosure for the equipment. These instructions also contain short-circuit ratings and required size and type of branch-circuit protection.

Overload relays with ground-fault current-sensing feature — Some overload relays are provided with a ground-fault current-sensing feature that has been investigated as providing additional protection to the motor circuit. This ground-fault current-sensing feature is not intended to be used for ground-fault current protection required by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC); see Ground-fault Sensing and Relaying Equipment Certified for Canada (KDAX7). When this feature is

Motor Controllers Certified for Canada (NJOT7)−*Continued*

provided and activated/selected, the overload relay is caused to trip when a differential current occurs between phases that is in excess of the pick-up current or tripping curve specified in the manufacturer's instructions.

Branch-circuit-protection requirements — Overload relays, motor controllers and motor starters (e.g., motor controllers incorporating thermal cutouts, thermal overload relays or other devices for motor-running overcurrent protection) are considered to be suitably protected against overcurrent due to short circuits or grounds by motor branch-circuit, short-circuit and ground-fault protective devices selected in accordance with the CEC and any additional information marked on the product. Motor controllers may specify that protection is to be provided by fuses only or, additionally, by an inverse-time circuit breaker. If there is no marking regarding the protective device type, controllers are considered suitably protected by either type of device. Motor controllers may specify a maximum rating of protective device. If not marked with a rating, the controllers are considered suitably protected by a protective device of the maximum rating permitted by the CEC.

Short-circuit-current rating — Combination motor controllers, overload relays, motor controllers rated more than 1 hp at 300 V or more, motor controllers rated more than 2 hp at any voltage, and motor starters (e.g., motor controllers incorporating thermal cutouts or overload relays) have been investigated as tabulated below. These controllers are marked "Suitable for use on a circuit capable of delivering not more than ____ rms symmetrical amps, ____ volts maximum," or the equivalent. These markings are provided on the motor controller or, for open-type motor controllers, the markings may be located on a separate adhesive-backed label (such as a heater table) packaged with the motor controller.

Motor Controllers Rated 600 V or Less, Max Hp Rating	Motor Controllers Rated 601–1500 V Max Full Load Current, Amps	Min Short-circuit-current Ratings, RMS Symmetrical Amps
1 or less	—	1,000
Over 1 to 50	50 or less	5,000
Over 1 to 200	Over 50 to 200	10,000
Over 200 to 400	Over 200 to 400	18,000
Over 400 to 600	Over 400 to 600	30,000
Over 600 to 900	Over 600 to 850	42,000
Over 900 to 1600	Over 850 to 1500	85,000
Over 1600	Over 1500	100,000

Motor controllers that have additionally been investigated for use at higher available fault currents than the minimum short-circuit-current ratings tabulated are marked "Suitable for use on a circuit capable of delivering not more than ____ rms symmetrical amps, ____ volts maximum when protected by Class ____ fuses or when protected by a circuit breaker having an interrupting rating not less than ____ rms symmetrical amperes, ____ volts maximum," as applicable.

Motor controllers intended for group installations are marked "Suitable for motor group installation on a circuit capable of delivering not more than ____ rms symmetrical amperes, ____ volts maximum."

Controllers intended for electric-motor-driven fire pumps are covered under Pump Controllers, Fire Certified for Canada (QYZS7).

* *

Auxiliary Devices Certified for Canada (NKCR7)

GENERAL

This category covers:

Magnetically operated control switches (relays)
Manually operated switches (push buttons, key-operated switches)
Biometrically operated switches (fingerprint/optically operated switches)
Pilot lights
Push-button stations (including parts such as pilot lights and selector switches)
Electronic, thermal and magnetic overload relays
Time-delay relays
Foot-operated switches
Flow switches
Liquid-level controls
Printed wiring board assemblies incorporating switched outputs

Some pilot lights and push-button assemblies are of a modular construction where individual parts, such as lenses, lampholders, operators and contact blocks, are individually certified and identified for use with mating parts.

Auxiliary Devices Certified for Canada (NKCR7)−*Continued*

These devices are intended for use in control circuits of magnetic motor controllers and the like. The contacts and switched outputs are marked with the voltage rating and whether they are intended for Standard Duty or Heavy Duty, or with a code designation such as A600, B600, etc. These codes represent the control circuit load that may be controlled by the device. The significance of each code is shown in the tables below. Standard Duty indicates ratings under Codes B and P; Heavy Duty indicates ratings under Codes A and N for the marked voltage rating.

Rating Codes for AC Control-circuit Contacts at 50 and 60 Hz

Contact Rating Code Dsg[a]	Thermal Continuous Test Current Amps	Max Current Amps[b] 120 V		240 V		480 V		600 V		Max Volt-amps	
		Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A150	10	60	6.00	—	—	—	—	—	—	7200	720
A300	10	60	6.00	30	3.00	—	—	—	—	7200	720
A600	10	60	6.00	30	3.00	15	1.50	12	1.20	7200	720
B150	5	30	3.00	—	—	—	—	—	—	3600	360
B300	5	30	3.00	15	1.50	—	—	—	—	3600	360
B600	5	30	3.00	15	1.50	7.5	0.75	6	0.60	3600	360
C150	2.5	15	1.5	—	—	—	—	—	—	1800	180
C300	2.5	15	1.5	7.5	0.75	—	—	—	—	1800	180
C600	2.5	15	1.5	7.5	0.75	3.75	0.375	3.00	0.30	1800	180
D150	1.0	3.60	0.60	—	—	—	—	—	—	432	72
D300	1.0	3.60	0.60	1.80	0.30	—	—	—	—	432	72
E150	0.5	1.80	0.30	—	—	—	—	—	—	216	36

[a]The numerical suffix designates the maximum voltage design values, which are to be 600 V, 300 V and 150 V for suffixes 600, 300 and 150, respectively.

[b]For maximum ratings at voltages between the maximum design value and 120 V, the maximum make and break ratings are to be obtained by dividing the volt-ampere rating by the application voltage. For voltages below 120 V, the maximum make current is to be the same as for 120 V, and the maximum break current is to be obtained by dividing the break volt-amperes by the application voltage, but are not to exceed thermal continuous test current.

Rating Codes for DC Control-circuit Contacts

Contact Rating Code Dsg[a]	Thermal Continuous Test Current Amps	Max Make or Break[b] Current Amps 125 V	250 V	301 to 600 V	Max Make or Break V Amps at 300 V or Less
N150	10	2.2	—	—	275
N300	10	2.2	1.1	—	275
N600	10	2.2	1.1	0.40	275
P150	5.0	1.1	—	—	138
P300	5.0	1.1	0.55	—	138
P600	5.0	1.1	0.55	0.20	138
Q150	2.5	0.55	—	—	69
Q300	2.5	0.55	0.27	—	69
Q600	2.5	0.55	0.27	0.10	69
R150	1.0	0.22	—	—	28
R300	1.0	0.22	0.11	—	28

[a]The numerical suffix designates the maximum voltage design values, which are to be 600 V, 300 V and 150 V for suffixes 600, 300 and 150, respectively.

[b]For maximum ratings at 300 V or less, the maximum make and break ratings are to be obtained by dividing the volt-ampere rating by the application voltage, but are not to exceed the thermal continuous test current.

These devices have not been investigated for providing restricted-access control to machinery or specifically defined areas. Such equipment is investigated to CAN/ULC-S319, "Electronic Access Control Systems."

ADDITIONAL INFORMATION

For additional information, see Motor Controllers Certified for Canada (NJOT7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, "Industrial Control Equipment."

Electronic, thermal and magnetic overload relays are investigated to CSA-C22.2 No. 14, or CAN/CSA-C22.2 No. 60947-1 (2007), "Low-Voltage Switchgear and Controlgear – Part 1: General Rules," and CAN/CSA-C22.2 No. 60947-4-1 (2007), "Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the prod-

Auxiliary Devices Certified for Canada (NKCR7)−*Continued*

uct is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Industrial Control Equipment'' (or ''Ind. Cont. Eq.'') or ''Auxiliary Device'' (or ''Aux. Dev.'').

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Combination Motor Controllers Certified for Canada (NKJH7)

USE AND INSTALLATION

This category covers combination motor controllers, which provide the motor branch-circuit functions of motor controller, disconnect means, short-circuit and ground-fault protection and motor overload protection. The functions may be provided by individual discrete components or be combined in a single controller unit.

These products are marked ''Combination Motor Controller'' to signify that all of the motor branch-circuit functions indicated above have been investigated and are included in the certification of the controller.

An open-type combination motor controller is intended for factory installation in a switchboard, motor control center, industrial control panel or the like, or for field installation in an enclosure for industrial control equipment, a cabinet or a cutout box.

Combination motor controllers are marked with a short-circuit rating and are intended for connection to circuits in which the available fault current does not exceed the marked short-circuit rating.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers Certified for Canada (NJOT7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment,'' or CAN/CSA-C22.2 No. 60947-1-2007, ''Low-Voltage Switchgear and Controlgear – Part 1: General Rules,'' and CAN/CSA-C22.2 No. 60947-4-1-2007, ''Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Combination Motor Controller'' (or ''Comb. Mtr. Cntlr.'').

* *

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Motor Controllers, Float- and Pressure-operated Certified for Canada (NKPZ7)

USE

This category covers:

- Float-operated switches, including weight-operated switches
- Pressure-operated switches, including vacuum-operated switches

These devices are intended for direct control of motors; for use in control circuits of magnetic motor controllers and the like; and for control of other types of loads.

Unless otherwise marked, these devices are intended for use only with air, water, or other nonhazardous fluids.

RELATED PRODUCTS

Pressure-operated switches investigated for use in connection with automatic sprinkler or similar protective equipment are covered under Switches, Pressure Certified for Canada (VOXZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14 (1991), ''Industrial Control Equipment.''

Motor Controllers, Float- and Pressure-operated Certified for Canada (NKPZ7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment'' (or ''Ind. Cont. Eq.'').

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Motor Controllers, Magnetic Certified for Canada (NLDX7)

GENERAL

This category covers:

- Across-the-line starters
- Across-the-line starters with motor circuit switches
- Combined starters and speed regulators
- Reduced-voltage starters, such as autotransformer, part-winding wye-delta, reactance and resistant types
- Speed regulators

Magnetic motor controllers have been tested to determine their acceptability for continuous operation at their marked rated load.

RELATED PRODUCTS

Magnetic switches for controlling other than motor loads are covered under Switches, Industrial Control Certified for Canada (NRNT7).

ADDITIONAL INFORMATION

For additional information, see Motor Controllers Certified for Canada (NJOT7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment,'' or CAN/CSA-C22.2 No. 60947-1-2007, ''Low-Voltage Switchgear and Controlgear – Part 1: General Rules,'' and CAN/CSA-C22.2 No. 60947-4-1-2007, ''Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment'' (or ''Ind. Cont. Eq.'') or ''Magnetic Motor Controller'' (or ''Mag. Mtr. Cntlr.'').

* *

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Motor Controllers, Manual Certified for Canada (NLRV7)

GENERAL

This category covers the following manually-operated devices intended for across-the-line starting of motors:

- Across-the-line starters
- Autotransformer starters
- Combined starters and speed regulators
- Reactance-type starters
- Resistance-type starters
- Speed regulators

Motor disconnect switch — Manual motor controllers that have been additionally investigated for use as a motor disconnect switch are marked ''Suitable as Motor Disconnect.''

ADDITIONAL INFORMATION

For additional information, see Motor Controllers Certified for Canada (NJOT7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Motor Controllers, Manual Certified for Canada (NLRV7)−*Continued*

The basic standard used to investigate products in this category is CSA-C22.2 No. 14,"Industrial Control Equipment," or CAN/CSA-C22.2 No. 60947-1 (2007), "Low-Voltage Switchgear and Controlgear – Part 1: General Rules," and CAN/CSA-C22.2 No. 60947-4-1 (2007), "Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Manual Motor Controller" (or "Man. Mtr. Cntlr.").

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Motor Controllers, Mechanically Operated and Solid-state Certified for Canada (NMFT7)

GENERAL

This category covers the following devices intended for across-the-line starting of motors:

Flow-operated motor controllers
Machine-operated motor controllers
Soft starters
Solid-state starters
Solid-state reduced-voltage starters
Solid-state speed controls

These devices are intended for the direct control of motors.

Mechanically operated and solid-state motor controllers have been tested to determine their acceptability for continuous operation at their marked rated motor load.

RELATED PRODUCTS

Devices intended for use in control circuits of magnetic motor controllers and the like are covered under Auxiliary Devices Certified for Canada (NKCR7).

Devices intended for use in nonmotor circuits other than motor control circuits are covered under Switches, Industrial Control Certified for Canada (NRNT7).

ADDITIONAL INFORMATION

For additional information, see Motor Controllers Certified for Canada (NJOT7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, "Industrial Control Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Industrial Control Equipment" (or "Ind. Cont. Eq."), "Solid-state Motor Controller" or "Solid-state Reduced-voltage Starter."

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Power Conversion Equipment Certified for Canada (NMMS7)

GENERAL

This category covers equipment that supplies power to and controls a motor or motors operating at a frequency or voltage different than the input supply voltage. This category also covers power-supply modules, input and output modules, SCR or transistor output modules, dynamic braking modules, and input/output accessory kits for power conversion equipment. Power conversion equipment may be of the open or enclosed type.

Power conversion equipment incorporating overload protection for motors and not intended for use with remote or external motor overload protection is marked to indicate the level of protection provided in percent of full load current. Where such protection is adjustable, a marking with instructions for adjustment is provided. Equipment not providing motor overload protection is marked to indicate motor protection such as thermal overload relays, or a thermally protected motor must be otherwise provided.

Power conversion equipment is marked with input electrical ratings and output motor electrical ratings.

This category does not cover power conversion equipment intended for use in safety-related functions (i.e., functional safety applications).

REBUILT PRODUCTS

This category also covers power conversion equipment that is rebuilt by the original manufacturer or by the Applicant's authorized manufacturer as found in the original product Follow-Up Service Procedure Authorization Page or Addendum to the Follow-Up Service Procedure Authorization Page. Rebuilt power conversion equipment is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt power conversion equipment is subject to the same requirements as new power conversion equipment, including production-line tests as applicable.

RELATED PRODUCTS

Equipment intended to provide a primary, secondary, or primary and secondary power source to nonspecific loads in parallel or separate from the utility is covered under Static Inverters and Converters for Use in Independent Power Systems Certified for Canada (QIKH7). Examples of this equipment are utility interactive, stand-alone, and multimode inverters and converters.

Products in which industrial-use power conversion equipment is integrated with a motor may be covered under Electronically Protected Motors with Integral Controllers for Industrial Use Certified for Canada (XDNZ7).

ADDITIONAL INFORMATION

For additional information, see Motor Controllers Certified for Canada (NJOT7), Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, "Industrial Control Equipment."

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Industrial Control Equipment" (or "Ind. Cont. Eq.") or "Power Conversion Equipment."

For rebuilt products, the word "Rebuilt," "Refurbished" or "Remanufactured" precedes the product name.

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POWER CIRCUIT AND MOTOR-MOUNTED APPARATUS CERTIFIED FOR CANADA (NMTR7)

GENERAL

This category covers autotransformers, including motor-starting and variable-voltage types; battery chargers for industrial use; magnetically operated brakes; magnetically operated clutches; busbars; enclosed slip rings; phase converters; power-factor-correction equipment; power supplies for industrial use; reactors, including line chokes; current transformers and current transducers; voltage transformers and voltage transducers; and resistors, including motor-starting, rheostats and potentiometers.

A brake or clutch may consist of several parts with the Certification Mark appearing on the main electrical part (e.g., field coil). Where other part(s) are essential to complete a certified assembly, the basic unit is marked to indicate the parts needed.

ADDITIONAL INFORMATION

For additional information, see Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category, except for power supplies, is CSA-C22.2 No. 14, "Industrial Control Equipment."

Power Circuit and Motor-mounted Apparatus Certified for Canada (NMTR7)−*Continued*

The basic standard used to investigate power supplies in this category is CSA-C22.2 No. 107.1, ''General Use Power Supplies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment'' (or ''Ind. Cont. Eq.'').

* *

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PROGRAMMABLE CONTROLLERS CERTIFIED FOR CANADA (NRAQ7)

GENERAL

This category covers programmable industrial control systems utilizing a programmable memory for internal storage of user-oriented instructions for specific functions, such as logic, sequencing, counting, and controlling various industrial equipment through digital or analog inputs or outputs. This category also covers power supplies, central processing units, input and output accessories, computer interfaces, and programming or program diagnostic units associated with programmable control systems.

All products covered under this category are marked with their electrical ratings. Output devices may have more than one rating. At least one rating is marked on the output device and additional ratings may be marked on an instruction sheet referenced on the output device.

RELATED PRODUCTS

This category does not cover primary safety controls intended for programming and monitoring the operation of the burner on gas-, gas-oil-, or oil-fired appliances. Such controls are covered under Controls, Primary Safety Certified for Canada (MCCZ7).

This category does not cover equipment intended for use in applications involving instruments for measurement, recording and/or control of process variables (such as temperature, pressure, flow, etc.) and auxiliary devices used with these instruments, such as sensors, transducers and valve operations. Such equipment is covered under Process Control Equipment, Electrical Certified for Canada (QUYX7).

This category does not cover programmable controllers intended for use in safety-related functions (i.e., functional safety applications).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 142, ''Process Control Equipment,'' or CAN/CSA-E61131-2 (2006), ''Programmable Controllers – Part 2: Equipment Requirements and Tests.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment'' (or ''Ind. Cont. Eq.'') or ''Programmable Controller'' (or ''Prog. Cntlr.'').

* *

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PROTECTIVE RELAYS CERTIFIED FOR CANADA (NRGU7)

GENERAL

This category covers relays of types directly associated with power switchgear. Typical devices covered under this category are instantaneous-current relays, voltage-unbalance relays, high-speed differential relays, dc timing relays, time-overcurrent relays, reverse-power relays, and the like.

These devices are intended to make or transfer current only, and to operate only under abnormal conditions.

This category does not cover overload relays of types designed primarily for industrial control or types used with communication, traffic signaling,

Protective Relays Certified for Canada (NRGU7)−*Continued*

computer switching, or other equipment not intended for the direct control of power equipment. The ability of these relays to detect an internal arc or to provide additional protection for equipment or operating personnel has not been investigated. It has not been determined that these relays provide compliance with CSA Z462, ''Workplace Electrical Safety.''

Instrument transformers are not evaluated as part of the investigation, unless the manufacturer provides the instrument transformer as part of the protective relay.

These devices are intended for use in circuits rated 600 V maximum. They may be used to monitor circuits of higher voltage, when suitably rated instrument transformers are used in conjunction with these devices, such that the voltage input to the protective relay is 600 V or less.

ADDITIONAL INFORMATION

For additional information, see Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14 (1991), ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment'' (or ''Ind. Cont. Eq.'').

* *

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PROXIMITY SWITCHES CERTIFIED FOR CANADA (NRKH7)

USE

This category covers electronic switching devices that are actuated by position of an object without mechanical contact with the object. These proximity switches respond to inductive, capacitive, LED or photoelectric effects.

PRODUCT MARKINGS

The devices are marked with electrical ratings. At least one rating is marked on the product and additional ratings may be marked on an instruction sheet shipped with the device.

RELATED PRODUCTS

This category does not cover equipment intended for use in safety-related functions, such as electro-sensitive protective equipment (ESPE) for the safeguarding of machinery that presents a risk of personal injury (e.g., light curtains). Such equipment is covered under Electro-sensitive Protective Equipment Certified for Canada (NIOZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Industrial Control Equipment'' (or ''Ind. Con. Eq.'') or ''Proximity Switch.''

* *

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SWITCHES, INDUSTRIAL CONTROL CERTIFIED FOR CANADA (NRNT7)

GENERAL

This category covers:

Magnetically operated switches

Switches, Industrial Control Certified for Canada (NRNT7)−*Continued*

Manually operated switches
Photoelectric switches
Solid-state switches

These devices are intended for the direct control of nonmotor-rated loads.

Open-type switches are certified for use as parts of equipment where the acceptability of the combination has been determined by UL or where open-type switches may be employed.

Switches have been tested to determine their acceptability for continuous operation at their marked rated load.

RELATED PRODUCTS

Switches intended for the direct control of motors are rated in horsepower and are covered under Motor Controllers, Magnetic Certified for Canada (NLDX7), Motor Controllers, Manual Certified for Canada (NLRV7) and Motor Controllers, Mechanically Operated and Solid-state Certified for Canada (NMFT7).

Switches intended for use in motor-control circuits are rated in pilot-duty code or volt-amperes and are covered under Auxiliary Devices Certified for Canada (NKCR7).

ADDITIONAL INFORMATION

For additional information, see Industrial Control Equipment Certified for Canada (NIMX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, "Industrial Control Equipment," or CAN/CSA-C22.2 No. 60947-1-2007, "Low-Voltage Switchgear and Controlgear – Part 1: General Rules," and CAN/CSA-C22.2 No. 60947-4-1-2007, "Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Industrial Control Equipment" (or "Ind. Cont. Eq.") or "Industrial Control Switch" (or "Ind. Cont. Switch").

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INDUSTRIAL CONTROL EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NNGZ7)

This category covers the following devices for use in hazardous (classified) locations:

Auxiliary devices
Combination motor controllers
Control panels and assemblies
Enclosed slip rings
Flame-control panels
Float- and pressure-operated motor controllers
Magnetic motor controllers
Manual motor controllers
Miscellaneous motor controllers
Power circuit and motor-mounted apparatus
Power conversion equipment
Programmable controllers

Open-type equipment — Open-type industrial control equipment is intended for installation within a suitable enclosure. Examples of installation issues to consider when determining the suitability of the equipment enclosure include the following, as applicable: 1) the involved area classification, 2) protection against any specific environmental conditions, 3) thread engagement, and 4) whether a tool is required for opening of the enclosure. Installation requirements relating to the suitability of the enclosure are specified in the instructions or markings for the open-type equipment.

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CONTROL PANELS AND ASSEMBLIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NNNY7)

GENERAL

This category covers control panels and assemblies consisting of enclosures and electrical components such as push-button stations, pilot lights, motor controllers, and receptacles with plugs.

A single enclosure or a group of interconnected (modular) enclosures may be used for mounting the electrical components.

The enclosures making up a modular assembly are intended to be interconnected either at the factory or in the field by the user. Limitations on the interconnection of the enclosures are given on or with the product.

The electrical components are provided as part of the product and are intended to be installed either at the factory or in the field by the user.

It is intended that wiring between the electrical components of modular assemblies be field installed.

Lead wire seals are not required between the modular enclosures. However, conduit runs entering an assembly should be sealed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," unless factory-made seals are provided and the product is marked to so indicate.

Motor controllers incorporating thermal cutouts, thermal relays, or other devices for motor-running overcurrent protection are considered to be suitably protected against overcurrent due to short circuits or grounds by fuses or circuit breakers (overcurrent protective devices) having ratings not in excess of four times the full load current of the motors with which they are intended to be used.

Overload units of motor controllers are marked for identification for the particular ratings for which controllers are furnished. The manufacturer should be consulted with regard to use of a controller for other certified ratings in order that proper overload units may be furnished. Motor controllers intended for across-the-line starting and for making and breaking the circuit when the motor is stalled are tested at rated voltage and at six times motor full load running current for ac horsepower ratings, and at 10 times motor full load running current for dc horsepower ratings.

Pilot lights without guards should be used only where not subject to breakage.

Receptacles with plugs included on certified assemblies have been subjected to endurance and overload operation tests in the presence of the specific flammable atmospheres for Class I locations and while heavily blanketed with combustible dust for Class II locations.

The flexible cord should be frequently inspected and replaced when necessary. Terminal connections to the cord must be properly made and maintained. Safe use also depends on the maintenance of insulation at current-carrying parts of the plug and receptacle. The devices should, therefore, not be used where the insulation may be impaired by moisture, dirt, or other foreign material.

Authorities Having Jurisdiction should be consulted with regard to conditions under which those assemblies having receptacles with plugs will be permitted for use. It is recognized that portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Control Assembly Body for Hazardous Locations," "Control Assembly Cover for Hazardous Locations" or "Control Panel for Hazardous Locations."

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Flame-control Panels for Use in Hazardous Locations Certified for Canada (NNTE7)

GENERAL

This category covers flame-control panels intended for application in the control of fossil-fuel-burning equipment, such as incinerators, kilns and drying ovens. Flame-control panels have been certified only as to electrical fire and shock hazards. The compatibility of the panel with the controlled equipment from the standpoint of programming the burner(s) and preventing hazardous conditions due to firing of fuel has not been determined.

ADDITIONAL INFORMATION

For additional information, see Control Panels and Assemblies for Use in Hazardous Locations Certified for Canada (NNNY7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FLAME-CONTROL PANEL FOR USE IN HAZARDOUS LOCATIONS AS TO FIRE, ELECTRICAL SHOCK AND EXPLOSION HAZARDS ONLY

No.

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ENCLOSED SLIP RINGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NNTR7)

USE AND INSTALLATION

This category covers enclosed slip rings intended to transfer power to industrial equipment.

A terminal compartment is provided for connection to threaded rigid conduit systems.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Enclosed Slip Ring for Use in Hazardous Locations.''

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MOTOR CONTROLLERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NNUX7)

Motor controllers are Listed under the following categories:
Auxiliary Devices
Combination Motor Controllers
Float- and Pressure-Operated Motor Controllers
Magnetic Motor Controllers
Manual Motor Controllers
Miscellaneous Motor Controllers

Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7)−*Continued*

Motor controllers incorporating thermal cutouts, thermal relays, or other devices for motor running overcurrent protection are considered to be suitably protected against overcurrent due to short circuits or grounds by fuses or circuit breakers (overcurrent protective devices) having ratings not in excess of four times the full load current of the motors with which they are intended to be used.

Motor controllers intended for across-the-line starting and for making and breaking the circuit when the motor is stalled, are tested at rated voltage and at six times motor full load running current for a-c horsepower ratings and at ten times motor full load running current for d-c horsepower ratings.

Industrial control equipment is Listed with maximum ratings of 200 hp and/or 300 amp and 600 V.

Industrial control equipment marked ''Rain tight'' is subjected to a test designed to simulate exposure to beating rain to determine that such exposure will not result in the entrance of water.

If the sealed rating of the operating coil circuit of a magnetically operated industrial control device exceeds 125 volt-amperes, the coil circuit rating is marked on the device.

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Auxiliary Devices for Use in Hazardous Locations Certified for Canada (NOIV7)

GENERAL

This category covers auxiliary devices intended for use in control circuits of magnetic motor controllers and the like, and consist of the following devices: machine-operated switches, pushbutton stations (including pilot lights and selector switches), magnetically operated switches, and miscellaneous manually operated switches.

Auxiliary devices provided with a factory seal of conductors entering the pilot light or switch enclosure are so identified by a marking on the product.

Pilot lights without guards should be used only where not subject to breakage.

Enclosures furnished without mechanisms are marked to identify the mechanisms that are to be used.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Industrial Control Equipment for Hazardous Locations,'' ''Industrial Control Equipment Enclosure for Hazardous Locations,'' ''Industrial Control Equipment for Use in Hazardous Locations'' or ''Industrial Control Equipment Enclosure for Use in Hazardous Locations.'' The words ''Industrial Control Equipment'' may be abbreviated ''Ind. Cont. Eq.''; the words ''Hazardous Locations'' may be abbreviated ''Haz. Loc.''

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Combination Motor Controllers for Use in Hazardous Locations Certified for Canada (NOTH7)

GENERAL

This category covers combination motor controllers, which provide the motor branch-circuit functions of the motor controller, disconnect means,

Combination Motor Controllers for Use in Hazardous Locations Certified for Canada (NOTH7)−*Continued*

short-circuit and ground-fault protection and overload protection. The functions may be provided by individual discrete components or be combined in a single controller unit.

Combination motor controllers are marked ''Combination Motor Controller'' to signify that all of the motor branch-circuit functions indicated above have been investigated and are included in the certification of the controller.

Combination motor controllers are marked with a short-circuit rating and are intended for connection to circuits in which the available fault current does not exceed the marked short-circuit rating.

Enclosures furnished without mechanisms are marked to identify the mechanisms that should be used.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Industrial Control Equipment for Hazardous Locations,'' ''Industrial Control Equipment Enclosure for Hazardous Locations,'' ''Industrial Control Equipment for Use in Hazardous Locations'' or ''Industrial Control Equipment Enclosure for Use in Hazardous Locations.'' The words ''Industrial Control Equipment'' may be abbreviated ''Ind. Cont. Eq.''

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Float- and Pressure-operated Motor Controllers for Use in Hazardous Locations Certified for Canada (NOWT7)

GENERAL

This category covers float- and pressure-operated switches, including vacuum-operated switches. These devices are intended for direct control of motors, use in control circuits of magnetic motor controllers and the like, and control of other types of loads.

Unless otherwise indicated on the product, these devices are intended for use only with air, water, or other nonhazardous fluids.

Unless otherwise indicated on the product, these devices are intended for use in an ambient temperature normally prevailing in habitable spaces, and for use with fluids at such a temperature.

These devices have not been investigated for use in connection with automatic sprinkler or similar protective equipment.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 14 (1985), ''Industrial Control Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment for Hazardous Locations'' or ''Industrial Control Equipment for Use in Hazardous Locations.'' The words ''Industrial Control Equipment'' may be abbreviated ''Ind. Cont. Eq.''

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Float- and Pressure-operated Motor Controllers for Use in Hazardous Locations Certified for Canada (NOWT7)−*Continued*

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Magnetic Motor Controllers for Use in Hazardous Locations Certified for Canada (NPKR7)

GENERAL

This category covers magnetic across-the-line starters.

Enclosures furnished without mechanisms are marked to identify the mechanisms which should be used.

RELATED PRODUCTS

Magnetic switches for controlling other than motor loads are covered under Auxiliary Devices for Use in Hazardous Locations Certified for Canada (NOIV7).

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 14 (1985), ''Industrial Control Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Industrial Control Equipment for Hazardous Locations,'' ''Industrial Control Equipment Enclosure for Hazardous Locations,'' ''Industrial Control Equipment for Use in Hazardous Locations'' or ''Industrial Control Equipment Enclosures for Use in Hazardous Locations.'' The words ''Industrial Control Equipment'' may be abbreviated ''Ind. Cont. Eq.''

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Manual Motor Controllers for Use in Hazardous Locations Certified for Canada (NPXZ7)

GENERAL

This category covers manual across-the-line starters.

Overload units are marked for identification for the particular ratings for which controllers are furnished. The manufacturer should be consulted with regard to use of a controller for other certified ratings in order that proper overload units may be furnished.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment for Hazardous Locations'' or ''Industrial Control Equipment for Use in Hazardous Locations.'' The words ''Industrial Control Equipment'' may be abbreviated ''Ind. Cont. Eq.''

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Manual Motor Controllers for Use in Hazardous Locations Certified for Canada (NPXZ7)−*Continued*

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Miscellaneous Motor Controllers for Use in Hazardous Locations Certified for Canada (NQLX7)

GENERAL

This category covers devices intended for the direct control of motors.

These devices have not been investigated for use in locations having automatic fire sprinklers.

Unless otherwise indicated on the product, these devices are intended for use in an ambient temperature normally prevailing in habitable spaces, and for use with fluids at such a temperature.

RELATED PRODUCTS

Devices intended for use in control circuits of magnetic motor controllers and the like are covered under Auxiliary Devices for Use in Hazardous Locations Certified for Canada (NOIV7).

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment for Hazardous Locations'' or ''Industrial Control Equipment for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings. The words ''Industrial Control Equipment'' may be abbreviated ''Ind. Cont. Eq.''

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Power Conversion Equipment for Use in Hazardous Locations Certified for Canada (NQMD7)

USE

This category covers equipment that supplies power to control a motor or motors operating at a frequency or voltage different than the input supply voltage. This category also includes power-supply modules, input and output modules, SCR or transistor output modules, dynamic braking modules, and input/output accessory kits for power conversion equipment. Power conversion equipment may be of the open or enclosed type.

PRODUCT MARKINGS

Power conversion equipment incorporating overload protection for motors and not intended for remote or external motor overload protection is marked to indicate the level of protection provided in percent of full load current. Where such protection is adjustable, a marking with instructions for adjustment is provided. Equipment not providing motor overload protection is marked to indicate motor protection, such as thermal overload relays, or a thermally protected motor must be provided.

Power conversion equipment is marked with input and output electrical ratings.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Hazardous Locations Certified for Canada (NNUX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category isCSA-C22.2 No. 14 (1991), ''Industrial Control Equipment.''

Power Conversion Equipment for Use in Hazardous Locations Certified for Canada (NQMD7)−*Continued*

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment for Use in Hazardous Locations'' (or ''Ind. Cont. Eq. for Use in Haz. Loc.'') or ''Power Conversion Equipment for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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POWER CIRCUIT AND MOTOR-MOUNTED APPARATUS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NRAD7)

GENERAL

This category covers autotransformers, including motor-starting and variable-voltage types; battery chargers for industrial use; magnetically operated brakes; busbars; magnetically operated clutches; enclosed slip rings; lamp dimmers, including incandescent, fluorescent, mercury vapor, surgical light and theater use; phase converters; power factor correction equipment; power supplies for industrial use; reactors, including line chokes; and resistors, including motor-starting, rheostats, potentiometers, and high-impedance grounding types.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment for Use in Hazardous Locations'' (or ''Ind. Cont. Eq. for Use in Hazardous Locations'').

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PROGRAMMABLE CONTROLLERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NRAG7)

GENERAL

This category covers programmable industrial control systems utilizing a programmable memory for internal storage of user-oriented instructions for specific functions, such as logic, sequencing, counting, and controlling various industrial equipment through digital or analog inputs or outputs. This category also covers power supplies, central processing units, input and output accessories, computer interfaces and programming or program diagnostic units associated with programmable control systems.

All products covered under this category are marked with their electrical ratings. Output devices may have more than one rating. At least one rating is marked on the output device and additional ratings may be marked on an instruction sheet referenced on the output device.

This category does not cover primary safety controls intended for programming and monitoring the operation of the burner on gas-, gas-oil-, or oil-fired appliances.

Programmable Controllers for Use in Hazardous Locations Certified for Canada (NRAG7)−*Continued*

This category does not cover programmable controllers intended for use in safety-related functions (i.e., functional-safety applications).

REBUILT PRODUCTS

This category also covers programmable controllers and their accessories that are rebuilt by the original manufacturer or the original manufacturer's authorized manufacturer covered under this category. Rebuilt programmable controllers and their accessories are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt programmable controllers and their accessories are subject to the same requirements as new programmable controllers and their accessories.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 142 (1987), ''Process Control Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment for Hazardous Locations'' (or ''Ind. Cont. Eq. for Haz. Loc.''), ''Industrial Control Equipment for Use in Hazardous Locations'' (or ''Ind. Cont. Eq. for Use in Haz. Loc.'') or ''Programmable Controller for Use in Hazardous Locations'' (or ''Prog. Cntlr. for Use in Haz. Loc.''), or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured,'' ''Reconditioned'' or ''Refurbished'' precedes the product name.

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INDUSTRIAL CONTROL EQUIPMENT RELATING TO HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NRAW7)

INDUSTRIAL CONTROL PANELS RELATING TO HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NRBX7)

GENERAL

This category covers industrial control panels relating to hazardous locations, which are factory-wired assemblies of industrial control equipment such as motor controllers, switches, relays and auxiliary devices. The panels may include disconnect means and motor branch-circuit-protective devices.

Industrial control panels relating to hazardous locations are intended for installation in unclassified locations. They are provided with intrinsically safe (low energy) circuit(s) as indicated on the product, for extension into a hazardous (classified) location.

For intrinsically safe circuits, the energy level available in the hazardous location under normal and abnormal conditions is sufficiently low as not to cause ignition of the specified explosive atmospheres. To maintain the low energy levels, it is necessary that the intrinsically safe and associated equipment be installed and interconnected in accordance with the instructions provided. The intrinsically safe circuit wiring must be routed in a separate raceway or otherwise reliably segregated from all power and other circuit wiring to preclude excessive currents and voltages from being impressed on the intrinsically safe circuit, rendering it nonintrinsically safe.

The investigation of industrial control panels relating to hazardous locations does not include investigation of the function of the controlled equipment.

Industrial Control Panels Relating to Hazardous Locations Certified for Canada (NRBX7)−*Continued*

RELATED PRODUCTS

Industrial control panels for general use are covered under Industrial Control Panels Certified for Canada (NITW7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Open Industrial Control Panel Relating to Hazardous Locations'' or ''Enclosed Industrial Control Panel Relating to Hazardous Locations,'' and the statement ''With Intrinsically Safe Circuit Extensions.''

* *

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INDUSTRIAL CONTROL EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWEX7)

The Listing covers the following products:

Control Panels and Assemblies
Motor Controllers
Programmable Controllers

Enclosed industrial control equipment is intended for use as indicated in the general guide information at the front of Part II of the Directory (AANZ7) Section.

Industrial Control Equipment is for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Industrial Control Equipment for which accessory kits are available for the field or distributor modification of the basic product or which may be assembled in many forms from separate components are marked to indicate the suitable accessories or separate components which may be used.

If the rating of the operating coil circuit of a magnetically operated industrial control device exceeds 125 volt-amperes, the coil circuit rating is marked on the device.

Overload relays or industrial control equipment incorporating overload relays are identified as to their maximum tripping time at 600 per cent of the overload relay current element trip rating. The designations ''Class 10, Class 20 and Class 30'' are used to identify the maximum tripping times, with the Class number indicating the maximum tripping time in seconds. Overload relays with maximum tripping times of 10 or 30 seconds are marked Class 10 or Class 30 respectively. Overload relays with a maximum tripping time of 20 seconds may be marked Class 20. Overload relays with tripping times in excess of 30 seconds are marked with their maximum tripping times. All unmarked overload relays have a maximum tripping time of 20 seconds.

* *

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CONTROL PANELS AND ASSEMBLIES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWFA7)

USE

This category covers control panels and assemblies consisting of enclosures and electrical components such as push button stations, pilot lights, motor controllers, and receptacles with plugs.

Control Panels and Assemblies for Use in Zone Classified Hazardous Locations Certified for Canada (NWFA7)−*Continued*

A single enclosure or a group of interconnected (modular) enclosures may be used for mounting the electrical components.

The enclosures making up a modular assembly are intended to be interconnected either at the factory or in the field by the user. Limitations on the interconnection of the enclosures are given on or with the product. Modular assemblies must be installed in accordance with the installation instructions provided with each part.

The electrical components are provided as part of the product and are intended to be installed either at the factory or in the field by the user.

It is intended that wiring between the electrical components of modular assemblies be field installed.

Motor controllers incorporating thermal cutouts, thermal relays, or other devices for motor running overcurrent protection are considered to be suitably protected against overcurrent due to short circuits or grounds by fuses or circuit breakers (overcurrent protective devices) having ratings not in excess of four times the full load current of the motors with which they are intended to be used.

Overload units of motor controllers are marked for identification for the particular ratings for which controllers are furnished. The manufacturer should be consulted with regard to use of a controller for other Listed ratings in order that proper overload units may be furnished. Motor controllers intended for across-the-line starting and for making and breaking the circuit when the motor is stalled are tested at rated voltage and at six times motor full load running current for ac horsepower ratings, and at 10 times motor full load running current for dc horsepower ratings.

Pilot lights without guards should be used only where not subject to breakage.

Receptacles with plugs included on Listed assemblies have been subjected to endurance and overload operation tests in the presence of the specific flammable atmospheres for Class I locations.

The plugs of the receptacle-plug combinations are for use with extra-hard-usage flexible cord with grounding conductor.

The flexible cord should be frequently inspected and replaced when necessary. Terminal connections to the cord must be properly made and maintained. Safe use also depends on the maintenance of insulation at current-carrying parts of the plug and receptacle. The devices should, therefore, not be used where the insulation may be impaired by moisture, dirt, or other foreign material.

Authorities Having Jurisdiction should be consulted with regard to conditions under which those assemblies having receptacles with plugs will be permitted for use. It is recognized that portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Control Panel for Use in Hazardous Locations,'' ''Control Assembly Cover for Use in Hazardous Locations'' or ''Control Assembly Body for Use in Hazardous Locations.''

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MOTOR CONTROLLERS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWFE7)

Motor controllers are Listed under the following categories:
Auxiliary Devices
Combination Motor Controllers
Float-and Pressure-Operated Motor Controllers
Magnetic Motor Controllers
Manual Motor Controllers

Motor Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWFE7)−*Continued*

Miscellaneous Motor Controllers

Motor controllers incorporating thermal cutouts, thermal relays, or other devices for motor running overcurrent protection are considered to be suitably protected against overcurrent due to short circuits or grounds by fuses or circuit breakers (overcurrent protective devices) having ratings not in excess of four times the full load current of the motors with which they are intended to be used.

Motor controllers intended for across-the-line starting and for making and breaking the circuit when the motor is stalled, are tested at rated voltage and at six times motor full load running current for a-c horsepower ratings and at ten times motor full load running current for d-c horsepower ratings.

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Auxiliary Devices for Use in Zone Classified Hazardous Locations Certified for Canada (NWFN7)

GENERAL

This category covers devices such as machine-operated switches, push-button stations (including parts, such as pilot lights, meters, terminal blocks and selector switches), magnetically operated switches, and miscellaneous manually operated switches intended for use in control circuits of magnetic motor controllers, and the like.

Pilot lights without guards should be used only where not subject to breakage.

Auxiliary devices provided with a factory seal of conductors entering the pilot light or switch enclosure are so identified by a marking on the product.

Enclosures furnished without mechanisms are marked to identify the mechanisms intended to be used.

REBUILT PRODUCTS

This category also covers auxiliary devices that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt auxiliary devices are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt auxiliary devices are subject to the same requirements as new auxiliary devices.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Industrial Control Equipment (or Ind. Cont. Eq.) for Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) Enclosure for Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) for Use in Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) Enclosure for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

For rebuilt products the word ''Rebuilt'' or ''Reconditioned'' precedes the product name.

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Combination Motor Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWFP7)

GENERAL

This category covers combination motor controllers.

Combination Motor Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWFP7)−*Continued*

Combination motor controllers provide the motor branch-circuit functions of motor controllers, disconnect means, short-circuit and ground-fault protection and overload protection. The functions may be provided by individual discrete components or be combined in a single controller unit.

Combination motor controllers are marked ''Combination Motor Controller'' to signify that all of the motor branch-circuit functions indicated above have been investigated and are included in the certification of the controller.

PRODUCT MARKINGS

Combination motor controllers are marked with a short-circuit rating and are intended for connection to circuits in which the available fault current does not exceed the marked short-circuit rating.

Enclosures furnished without mechanisms are marked to identify the mechanisms that should be used.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Industrial Control Equipment (or Ind. Cont. Eq.) for Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) Enclosure for Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) for Use in Hazardous Locations'' or ''Industrial Control Equipment (or Ind. Cont. Eq.) Enclosure for Use in Hazardous Locations.''

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Magnetic Motor Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWFR7)

USE

This category covers magnetic across-the-line starters.

Enclosures furnished without mechanisms are marked to identify the mechanisms which should be used.

RELATED PRODUCTS

Magnetic switches for controlling other than motor loads are covered under Auxiliary Devices for Use in Zone Classified Hazardous Locations Certified for Canada (NWFN7).

ADDITIONAL INFORMATION

For additional information, see Motor Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWFE7), Industrial Control Equipment for Use in Zone Classified Hazardous Locations Certified for Canada (NWEX7) and Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 14 (1995), ''Industrial Control Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Industrial Control Equipment (or Ind. Cont. Eq.) for Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) Enclosure for Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) for Use in Hazardous Locations,'' ''Industrial Control Equipment (or Ind. Cont. Eq.) Enclosures for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

Magnetic Motor Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWFR7)−*Continued*

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Manual Motor Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWFU7)

USE

This category covers manual across-the-line starters.

Overload units are marked for identification for the particular ratings for which the controllers are furnished. The manufacturer should be consulted with regard to use of a controller for other certified ratings in order that proper overload units may be furnished.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 14, ''Industrial Control Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Industrial Control Equipment (or Ind. Cont. Eq.) for Hazardous Locations'' or ''Industrial Control Equipment (or Ind. Cont. Eq.) for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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PROGRAMMABLE CONTROLLERS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWGD7)

USE AND INSTALLATION

This category covers programmable industrial control systems utilizing a programmable memory for internal storage of user-oriented instructions for specific functions such as logic, sequencing, counting, and controlling various industrial equipment through digital or analog inputs or outputs. This category also includes power supplies, central processing units, input and output accessories, computer interfaces and programming or program diagnostic units associated with programmable control systems.

This category does not cover primary safety controls intended for programming and monitoring the operation of the burner on gas-, gas-oil-, or oil-fired appliances.

PRODUCT MARKINGS

These products are marked with their electrical ratings. Output devices may have more than one rating. At least one rating is marked on the output device and additional ratings may be marked on an instruction sheet referenced on the output device.

ADDITIONAL INFORMATION

For additional information, see Industrial Control Equipment for Use in Zone Classified Hazardous Locations Certified for Canada (NWEX7) and Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

INDUSTRIAL CONTROL EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWEX7)

Programmable Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWGD7)−*Continued*

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ″Industrial Control Equipment for Use in Hazardous Locations″ (or ″Ind. Cont. Eq. for Use in Haz. Loc.″) or ″Industrial Control Equipment for Hazardous Locations″ (or ″Ind. Cont. Eq. for Haz. Loc.″), or other appropriate product name as shown in the individual Listings.

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INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT CERTIFIED FOR CANADA (NWGQ7)

USE

This category covers equipment, appliances and systems rated 600 V or less normally found in offices, and other business establishments, residences (homes), educational facilities, and other similar environments classified as ordinary locations.

EQUIPMENT TYPES

Equipment may be electronic or electromechanical in design or a combination thereof.

Various groupings of equipment are covered under this category, such as:

Displays: Flat-panel displays, LCD displays, monitors, plasma displays.

Information processing equipment: Central processing units (CPUs), hand-held computers (personal assistants), laptop computers, notebook computers, pen-based computers, personal computers, point-of-sale terminals, scanners (including portable barcode scanners), servers, work stations. **Accessories:** Docking stations, flash memory cards, keyboards, mouse, PCMCIA-memory-modem cards, port replicators, trackballs.

Information storage equipment: Automated information storage equipment, CD-ROM/RW drives, disk drives, DVD drives, tape drives, optical drives.

Telecommunication equipment: Cellular site equipment, cordless telephone sets, facsimile machines, ISDN systems and telephones, modems, key telephone systems, powerline communication equipment, private automated branch exchanges (PABXs), telephone answering machines, telephone sets, voicemail systems, IP telephones, IP systems, wireless telephony systems.

Office appliances: Adding machines, bursters, calculators, collators, dictation and transcribing machines, electric typewriters, erasers, folding, embossing and sealing machines, label printers, microfilm readers, motor-operated file cabinets, overhead projectors, paper cutters, paper shredders, pencil sharpeners, sorters, stackers, staplers.

Printers/Reproduction equipment: Copiers, duplicating machines, microfilm printers, mimeograph machines, plotters, printers.

Mailing, banking and currency-handling equipment: Cash registers, coin counters, feeders and dispensers, accounting machines, check-writing, -assigning, -dating, -inserting, -mailing, -numbering and -stamping machines, point-of-sale terminals.

Multimedia equipment/accessories: Cable modems, digital cameras, DLP projectors, LCD projectors, microphones, set-top boxes, speakers, video conferencing systems.

Network equipment: Baluns, bridges, fiber optic transceivers, hubs, nodes, Power over Ethernet (PoE) equipment (e.g., power source equipment [PSE] and powered devices [PD]), repeaters, routers, switches, transceivers.

Wireless (RF, infrared) transceiving equipment: RF modems, hand-held computers with integral transceivers.

Static-neutralizing equipment: Power units with discharge bars used with or within copiers, collators, film-plate processors, digital printers, duplicating machines and similar equipment.

Interconnecting cable assemblies: Cable assemblies intended for use beneath raised floors of computer rooms.

Included within the above groupings is equipment which is battery powered, either by standard-size consumer-replaceable batteries (e.g., AA, C, D), or nonstandard sizes specified by manufacturer, type and ratings.

This category also covers power distribution units (PDUs) and computer power centers investigated as part of a computer system for use exclusively in computer rooms. This equipment is connected to branch circuits, and it distributes power to other units in the computer system by means of interconnecting cable assemblies complying with one or more of the wiring methods outlined in CAN/CSA-C22.1, ″Canadian Electrical Code, Part I″ (CEC). Many of these units require special installation, such as a separate transformer, special grounding methods, motor-generator equipment, air conditioning, etc. Such features are covered in the manufacturer's installation instructions.

INSTALLATION

Some equipment has been investigated for installation in a restricted access location, such as a dedicated equipment room or telecommunication equipment closet, where access is limited to trained service personnel. Such equipment is provided with a marking or installation instructions that state ″To be installed only in a Restricted Access Location,″ or similar wording. If also intended for installation over a concrete or noncombustible surface, such equipment will also be marked ″Suitable for mounting on concrete or other noncombustible surface only,″ or similar wording.

When certified equipment intended for use with a detachable power-supply cord is not provided with such a cord, a cord suitable for connection of the equipment to the branch circuit should be separately provided.

Equipment intended to be installed in closed and multiunit standard racks and cabinets has been determined to be suitable for use in ambient temperatures not exceeding the manufacturer's recommended ambient temperature as specified in the equipment's installation instructions.

Equipment identified with an Enclosure Type designation, or as ″Raintight″ or ″Rainproof,″ is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

This equipment is intended for installation and use in accordance with the CEC, and the instructions are on or with the equipment.

ACCESSORIES

Field-installed accessories to certified equipment are provided with suitable markings and/or instructions detailing proper installation or assembly of the accessory with either a specified or generic certified equipment specified in the marking or instructions.

SPECIAL CONSIDERATIONS

The ability or reliability of these products to perform their intended function in a particular application has not been investigated.

Equipment investigated with respect to security or burglary resistance is covered under Antitheft Alarms and Devices Certified for Canada (ATJT7) and other associated categories. Card readers, badge readers and similar identification equipment covered under this category has not been investigated with respect to security.

The burglary and theft protection features of coin-operated equipment, banking and currency-handling equipment, cash registers, coin counters and the like have not been investigated.

Automated teller machines (ATMs) investigated for security and burglary resistance are covered under Automated Teller Systems Certified for Canada (TPEU7). ATMs that have not been investigated for security protection are covered under Bank Equipment Certified for Canada (BALT7).

PHYSIOLOGICAL EFFECTS

The physiological effects of chemical substances used in or with this equipment have not been investigated.

The long-term characteristics or the possible physiological effects of radio frequency (RF) electromagnetic fields associated with this equipment have not been investigated.

RELATED EQUIPMENT

Power distribution centers for communications equipment are covered under Power Distribution Centers for Communications Equipment Certified for Canada (QPQY7).

Uninterruptible power-supply (UPS) equipment intended for indoor and outdoor use that may be stationary or fixed is covered under Uninterruptible Power-supply Equipment Certified for Canada (YEDU7).

Automatic transfer switches intended for use in optional standby systems in accordance with the CEC are covered under Automatic Transfer Switches for use in Optional Standby Systems Certified for Canada (WPXT7).

Power supplies for information technology and telecommunications equipment are covered under Power Supplies, Information Technology Equipment Including Electrical Business Equipment Certified for Canada (QQGQ7) and Power Supplies, Telephone Certified for Canada (QQJE7).

Static neutralizing equipment is covered under Static Neutralizing Equipment Certified for Canada (VWWZ7). High-voltage parts that may be accessible after installation have been investigated as limited-current circuits.

INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT CERTIFIED FOR CANADA (NWGQ7)

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Filing cabinets covered under this category have not been investigated with respect to fire resistance or security. Fire-resistant filing cabinets are covered under Record Protection Equipment Certified for Canada (RYPH7).

Other equipment associated with information technology / processing but not intended for use in offices, residences or computer rooms is covered under Graphics Arts Equipment Certified for Canada (KCQT7), Inspection and Measuring Electrical Equipment Certified for Canada (NYOK7), Teaching and Instruction Equipment Certified for Canada (WYFW7), Laboratory Use Medical Equipment Certified for Canada (OGTK7), Medical Equipment Certified for Canada (PIDF7), Marking and Coding Equipment, Electronic Certified for Canada (PGBE7) and Photographic Equipment Certified for Canada (QINT7). Other multimedia equipment and accessories are covered under Audio / Video Apparatus Certified for Canada (AZSQ7) and Audio and Video Equipment Certified for Canada (AZUJ7). Other telecommunication appliances and equipment is covered under Telephone Appliances and Equipment Certified for Canada (WYQQ7).

Modular assemblies of telecommunication equipment (e.g., racks, circuit card assemblies) which are designed for field installation by trained service personnel are covered under Custom-Built Telecommunication Equipment Certified for Canada (WYKM7).

Equipment intended to be installed on the network side of the subscriber demarcation point and installed and maintained by telephone companies, CATV companies and similar network communication companies is covered under Communication Service Equipment Certified for Canada (DUZO7).

Cabinet, enclosure and rack / frame systems that are not complete information technology (IT) or telecommunication equipment, but include components and assemblies that are intended to power, protect, heat, cool of otherwise support IT or telecommunication equipment that will be installed at a later time are covered under Information Technology and Telecommunication Equipment Cabinets, Enclosures and Racks Certified for Canada (NWIN7).

Power distribution products intended for indoor use as relocatable multiple-outlet extensions of a single branch circuit not for exclusive use of ITE and consisting of an attachment plug and a single length of flexible cord terminated in a single enclosure in which one or more receptacles are mounted are covered under Relocatable Power Taps Certified for Canada (XBYS7).

Power distribution products intended for installation in modular furniture are covered under Furniture Power Distribution Units Certified for Canada (IYNC7).

Equipment intended to protect against mains transients is covered under Surge-protective Devices Certified for Canada (VZCA7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN / CSA-C22.2 No. 60950-1 (2007), "Information Technology Equipment – Safety – Part 1: General Requirements," in conjunction with CAN / CSA-C22.2 No. 60950-21 (2003), "Information Technology Equipment – Safety – Part 21: Remote Power Feeding," CAN / CSA-C22.2 No. 60950-22 (2007), "Information Technology Equipment – Safety – Part 22: Equipment to be Installed Outdoors," and / or CAN / CSA-C22.2 No. 60950-23 (2007), "Information Technology Equipment – Safety – Part 23: Large Data Storage Equipment."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number or file number, and the category identifier "Information Technology Equipment" (or "Info. Tech. Equip.," "I.T.E." or "ITE"), "NWGQ7," or the standard number with or without the "CAN / CSA-C22.2 No." prefix (e.g., "CAN / CSA-C22.2 No. 60950-1," "60950-1"). The Listing Mark may also include one of the following product names: "Copier," "Modem," "Paper Shredder," "Personal Computer," "Cordless Telephone," or other appropriate product name as shown in the individual Listings.

The category identifier for field-installed accessories includes the word "Accessory."

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INFORMATION TECHNOLOGY EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWHC7)

INFORMATION TECHNOLOGY EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWHC7)

GENERAL

This category covers information technology equipment for use in hazardous (classified) locations such as, but not limited to, personal computers, card readers and printers, rated 600 V or less, normally used in business establishments and other similar environments.

The equipment and appliances may be electromechanical and / or electronic.

SPECIAL CONSIDERATIONS

The ability or reliability of these products to perform their intended function in a particular application has not been investigated.

Card readers, badge readers and similar identification equipment covered under this category has not been investigated with respect to security or burglary resistance.

PHYSIOLOGICAL EFFECTS

The physiological effects of chemical substances used in or with this equipment have not been investigated.

The long-term characteristics or the possible physiological effects of radio frequency (RF) electromagnetic fields associated with this equipment have not been investigated. Hand-held transportable RF products that interconnect to the telecommunication network through RF transmitters / receivers are additionally investigated for short-term characteristics to ANSI / IEEE C95.1 (1999), "Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz."

RELATED EQUIPMENT

Graphic display and touch panel equipment for information technology and telecommunications equipment is covered under Programmable Controllers for Use in Zone Classified Hazardous Locations Certified for Canada (NWGD7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN / CSA-C22.2 No. 60950-1 (2003), "Information Technology Equipment – Safety – Part 1: General Requirements."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Information Technology Equipment for Use in Hazardous Locations" (or "I.T.E. for Use in Hazardous Locations" or "Info. Tech. Equip. for Use in Hazardous Locations") or other appropriate product name as shown in the individual Listings.

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INFORMATION TECHNOLOGY EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWHP7)

GENERAL

This category covers information technology equipment such as, but not limited to, personal computers, card readers and printers, rated 600 V or less, normally used in business establishments and other similar environments.

The equipment and appliances may be electromechanical and / or electronic.

REBUILT PRODUCTS

INFORMATION TECHNOLOGY EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NWHP7)

This category also covers information technology equipment that is rebuilt by the original manufacturer or the original manufacturer's authorized manufacturer covered under this category. Rebuilt information technology equipment is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt information technology equipment is subject to the same requirements as new information technology equipment, including production-line tests as applicable.

SPECIAL CONSIDERATIONS

Card readers, badge readers and similar identification equipment covered under this category have not been investigated with respect to security.

PHYSIOLOGICAL EFFECTS

The physiological effects of chemical substances used in or with this equipment have not been investigated.

The long-term characteristics or the possible physiological effects of radio frequency (RF) electromagnetic fields associated with this equipment have not been investigated. Hand-held transportable RF products that interconnect to the telecommunication network through RF transmitters/receivers are additionally investigated for short-term characteristics to ANSI/IEEE C95.1 (1999), "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz."

RELATED EQUIPMENT

Graphic display and touch-panel equipment for information technology and telecommunications equipment is covered under Programmable Controllers for Use in Hazardous Locations Certified for Canada (NRAG7).

Card readers and data-entry-terminal equipment for information technology and telecommunications equipment is covered under Office Appliances and Business Equipment for Use in Hazardous Locations Certified for Canada (QAVS7).

Scanner and barcode-reader equipment for information technology and telecommunications equipment is covered under Data Processing Equipment, Electronic for Use in Hazardous Locations Certified for Canada (ENWS7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name Information Technology Equipment for Hazardous Locations (or "Info. Tech. Equip. for Hazardous Locations," "Info. Tech. Equip. for Haz. Loc.," "I.T.E. for Hazardous Locations" or "I.T.E. for Haz. Loc.") or "Information Technology Equipment for Use in Hazardous Locations" (or "Info. Tech. Equip. for Use in Hazardous Locations," "Info. Tech. Equip. for Use in Haz. Loc.," "I.T.E. for Use in Hazardous Locations" or "I.T.E. for Use in Haz. Loc."), or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Remanufactured," "Reconditioned" or "Refurbished" precedes the product name.

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INFORMATION TECHNOLOGY AND COMMUNICATIONS EQUIPMENT CABINET, ENCLOSURE AND RACK SYSTEMS CERTIFIED FOR CANADA (NWIN7)

GENERAL

This category covers cabinet, enclosure and rack/frame systems that are not complete but include components and assemblies that are intended to power, protect, heat, cool, or otherwise support information technology (IT) or telecommunications equipment, audio/video equipment (A/V), or the like that will be installed at a later time. They usually include mounting hardware, shelves or space for the installation of additional electronic equipment. These cabinet, enclosure and rack/frame systems are intended to be used by manufacturers in the construction of complete IT and communications equipment, or by service providers for the installation of network infrastructure equipment.

A marking includes a configuration list, or diagram of the components, and assemblies provided with the product covered under the system category. In addition, it is the responsibility of the Authority Having Jurisdiction over the final installation to determine if the final configuration meets the necessary criteria for installation and use.

As appropriate, this equipment is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

Equipment covered under this category includes, but is not limited to, indoor and outdoor cabinets and enclosures, racks, frames (nonenvironmentally-controlled cabinets, pedestals, enclosures, etc.), and the like. For the purpose of identification in this Guide Information, all of the equipment (cabinets, racks and enclosures) covered under this category is referred to as "ITC equipment cabinets."

Equipment intended for outdoor use is marked with an enclosure Type designation and provides a degree of protection. The absence of a Type rating will presume no environmental conditions have been assessed, and will automatically designate the equipment with a "Type 0" rating. Cabinets and enclosures may incorporate multiple Type designations for differing compartments if marked on the equipment. In addition, equipment may optionally be investigated and marked for ingress protection in accordance with IEC 60529, "Degrees of Protection Provided by Enclosures (IP Code)." IP codes are not intended to replace Type ratings.

Except for equipment identified with a specific temperature range, outdoor equipment has been investigated over a temperature range of -33°C to +40°C. The effects of insolation (solar loading) have also been considered.

For equipment containing Listed primary protectors for telecommunications circuits (see QVGV7), the individual Listing information for the protectors should be consulted for information regarding the installation and use of the protectors.

INSTALLATION

Some ITC equipment cabinet, enclosure, and rack/frame systems have been investigated for installation in a restricted-access location, such as a dedicated equipment room or telecommunications equipment closet, where access is limited to trained service personnel. Such ITC equipment is provided with a marking or installation instructions which state "To be installed only in a Restricted Access Location," or similar wording. If also intended for installation over a concrete or noncombustible surface, such equipment is also marked "Suitable for mounting on concrete or other noncombustible surface only," or similar wording.

Equipment installed in a restricted-access location generally receives power from a centralized dc power source. If field-wiring terminals are not contained in an internal compartment, both protection of exposed wiring terminals and wiring methods used for such equipment are intended to be provided in accordance with (1) markings on or instructions with the equipment, and (2) the applicable provisions of the CEC.

All wiring is intended to conform to the wiring methods outlined in the CEC.

ACCESSORIES

Field-installed accessories to Listed equipment are provided with suitable markings and/or instructions detailing proper installation or assembly of the accessory with Listed equipment as specified in the markings or instructions.

PRODUCT MARKINGS

The product marking includes a configuration list or diagram of components and accessories when included with the product.

Equipment containing service equipment is marked with the service panel input and output ratings. Short-circuit capacity may additionally be investigated and marked.

Equipment containing air conditioning or heat exchangers is marked with the BTU rating for the heat it can eliminate from the equipment interior. This rating is based solely on the manufacturer's specifications and has not been investigated or verified by UL. In addition, the heat release data for any installed equipment that is part of the cabinet system is also included. The heat release from power supplies is specified for the power supply operating under full load (basically the inefficiency of the power conversion process) but the heat release from powered equipment not included as part of the cabinet system is not included.

Equipment containing ac or dc power supplies or distribution is marked with an appropriate electrical rating for the power it can provide to installed units.

UNEVALUATED FACTORS

Other features that may affect the operation or performance of the installed equipment have not been investigated.

RELATED PRODUCTS

INFORMATION TECHNOLOGY AND COMMUNICATIONS EQUIPMENT CABINET, ENCLOSURE AND RACK SYSTEMS CERTIFIED FOR CANADA (NWIN7)

Complete ITC equipment cabinets are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7), Telephone Appliances and Equipment Certified for Canada (WYQQ7), Communications Service Equipment Certified for Canada (DUZO7), Custom-built Telecommunications Equipment Certified for Canada (WYKM7), Communications-circuit Accessories Certified for Canada (DUXR7), Audio and Video Equipment Certified for Canada (AZUJ7), Audio and Radio Equipment, Commercial Certified for Canada (AZCY7), Commercial Audio and Radio Equipment, Systems and Accessories Certified for Canada (AZJX7), Commercial Phonographs, Tape-playing and Recording Appliances and Accessories Certified for Canada (AZQW7), Audio/Video Apparatus Certified for Canada (AZSQ7), Closed-circuit Television Equipment Certified for Canada (DRQH7), Television/Video Equipment for Use in Health Care Facilities Certified for Canada (KFCV7), Video and Audio Equipment, Professional Certified for Canada (ZCBY7), and similar categories that cover complete equipment.

Cabinets and enclosures that do not include any additional components or assemblies may also be covered under Industrial Control Panels Certified for Canada (NITW7) and investigated to CAN/CSA-C22.2 No. 94-1991, "Special Purpose Enclosures."

Protectors for paired-conductor communications circuits are covered under Primary Protectors for Communications Circuits Certified for Canada (QVGV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60950-1-2007, "Information Technology Equipment – Safety – Part 1: General Requirements." Outdoor Type ratings are investigated to CAN/CSA-C22.2 No. 94-1991, "Special Purpose Enclosures." Components and assemblies provided/installed as part of a communications rack or cabinet are investigated to the applicable UL requirements as appropriate for the component or assembly.

Service equipment, such as meter-socket accessories (see PKAX7), are investigated to CSA-C22.2 No. 115-1989, "Meter Mounting Devices."

Special-purpose air conditioners (see ACVS7) are investigated to CAN/CSA-C22.2 No. 236-1990, "Heating and Cooling Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number or file number, and one of the following product names: "Enclosure System," "Cabinet System," "Rack System," preceded by "Telecom," "Telecommunications," "Communications," "IT," "ITC," "A/V," "CATV," a specific application such as "Cell System," "Wireless" or "Remote Terminal," or other appropriate product name as shown in the individual Listings.

For field-installed accessories, the product name includes the word "Accessory."

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INSECT- AND RODENT-CONTROL EQUIPMENT CERTIFIED FOR CANADA (NYKX7)

GENERAL

This category covers insecticide sprayers, vaporizers, dispensers, dusters and traps for insect or rodent control, insect electrocution equipment, ultrasonic generators for insect and/or rodent control, and commercial room treatment heaters for insect eradication.

Insecticide vaporizers and dispensers are provided with instructions that call attention to possible danger of dispensing unrecognized materials in kitchens above uncovered food, or in occupied sleeping quarters.

If a flammable dust or liquid, particularly if more volatile or flammable than kerosene (38°C flash point, closed cup), or other flammable material is used in a vaporizer or sprayer, there may be danger of fire or explosion, especially in closed rooms or confined spaces.

Motors used in ultrasonic generators for rodent control are prevented from hazardous overheating by inherent overheating devices, overcurrent protective devices or the inherent impedance of the windings, since these products are intended to operate continuously and unattended.

This equipment is provided with instructions for proper use and installation.

INSECT- AND RODENT-CONTROL EQUIPMENT CERTIFIED FOR CANADA (NYKX7)

The effectiveness of the product in performing its intended function has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category, except commercial room treatment heaters for insect eradication, are:

CAN/CSA-C22.2 No. 0 (1991), "General Requirements – Canadian Electrical Code, Part II"
CAN/CSA-C22.2 No. 0.4 (2004), "Bonding of Electrical Equipment"
CAN/CSA-C22.2 No. 189 (1989), "High-Voltage Insect Killers"
CAN/CSA-C22.2 No. 68 (2009), "Motor-Operated Appliances (Household and Commercial)"
CAN/CSA-C22.2 No. 64 (2010), "Household Cooking and Liquid-Heating Appliances"

Additional standards may be applicable based on the features employed. In addition, CSA Technical Information Letter No. C-37, "Input Ratings for Cord-Connected Heating and Cooking Appliances, Hairdressing Equipment and Electric Irons for Household Use" (issued 2-28-05), may also be used as applicable.

The basic standards used to investigate commercial room treatment heaters for insect eradication are CSA-C22.2 No. 46 (1988), "Electric Air Heaters," and CAN/CSA-C22.2 No. 0 (1991).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Insect and Rodent Control Equipment," "Insect Trap," "Insecticide Dispenser," "Insect Controller," or other appropriate product name as shown in the individual Listings.

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INSPECTION AND MEASURING ELECTRICAL EQUIPMENT CERTIFIED FOR CANADA (NYOK7)

USE

This category covers equipment intended primarily for the purpose of identifying, examining and investigating materials, and for making measurements and tests such as might be associated with manufacturing processes and quality control procedures.

FACTORS NOT INVESTIGATED

These products have been investigated with respect to risk of fire, shock and injury to persons. The accuracy of measured, analyzed or prepared quantities has not been investigated.

RELATED PRODUCTS

Additional equipment that may be used for measuring purposes is covered under Laboratory Use Electrical Equipment Certified for Canada (OGTK7) and Measuring, Testing and Signal Generation Equipment Certified for Canada (PICQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1010.1 (1992), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements," or CAN/CSA-C22.2 No. 61010-1 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Inspection Equipment" or "Measuring Equipment," or the name of the specific type of product as shown in the individual Listings.

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INSPECTION AND MEASURING ELECTRICAL EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (NYPA7)

USE

This category covers equipment intended primarily for the purpose of identifying, examining and investigating materials, and making measurements and tests such as might be associated with manufacturing processes and quality-control procedures.

The accuracy of the equipment has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 1010.1 (1992), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Inspection Equipment for Use in Hazardous Locations" or "Measuring Equipment for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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INSPECTION AND MEASURING ELECTRICAL EQUIPMENT, SPECIAL INSPECTION EQUIPMENT CERTIFIED FOR CANADA (NYQD7)

GENERAL

This category covers portable, mobile, stationary, and fixed units or systems intended primarily for the purpose of identifying materials, examining and investigating materials, including x-ray scanning (luggage) units, and other equipment that uses special technologies to perform its function.

Equipment not covered under this category includes, but is not limited to, medical x-ray equipment (including x-ray equipment designed to operate on supply potentials of over 600 V), equipment incorporating unenclosed aerial conductors, separate devices, such as tables, timers, etc., that are not limited in design to x-ray applications, and equipment which is not necessary for successful operation of x-ray equipment. See Inspection and Measuring Electrical Equipment Certified for Canada (NYOK7) and Medical Equipment Certified for Canada (PIDF7).

This equipment has been Classified as to electrical fire, shock, and mechanical hazards only.

The individual units of a system may be designed to be interconnected by means of one or more of the wiring methods outlined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

The nature of some of this equipment is such that it involves features of installation and use not ordinarily presented in utilization equipment. Such features are covered in the manufacturer's installation instructions. Installation must, if possible, be made in a room or compartment in which provision is made to prevent fire or injury to persons and must, in all cases, be in accordance with the manufacturer's installation instructions furnished with the equipment and the requirements of the Authorities Having Jurisdiction.

FACTORS NOT INVESTIGATED

These products generate radiation or contain radioactive materials or involve working with toxic materials or other potentially harmful technologies, where data regarding levels of exposure and physiological effects are not investigated. The accuracy of measured, analyzed or prepared quantities has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1010.1 (1992), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements," or CAN/CSA-C22.2 No. 61010-1 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*]
WITH RESPECT TO ELECTRICAL FIRE, SHOCK AND MECHANICAL HAZARDS ONLY
Control No.

* **SPECIAL INSPECTION EQUIPMENT** or **SPECIAL MEASURING EQUIPMENT**, or the name of the specific type of product

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INTERIOR BUILDING CONSTRUCTIONS CERTIFIED FOR CANADA (OEQX7)

BUILDING UNITS CERTIFIED FOR CANADA (OERQ7)

GENERAL

This category covers insulated building units consisting of proprietary mixes of organic and/or inorganic materials formed into panels, boards or sheets fabricated into sizes, thicknesses and shapes. These units are certified as to fire growth and damageability under specified room fire conditions.

Building units are intended for use in wall, ceiling, or wall-ceiling constructions as stated in the individual certifications.

Fire investigations of these constructions determine whether the degree of contribution to an igniting fire by any or all of the materials used to form the assembly is sufficient to cause significant fire growth and damage beyond the area of ignition fire exposure.

These insulated building units are investigated in a full-scale room fire test to ULC/ORD-C376, "Fire Growth of Foamed Plastic Insulated Building Panels in a Full-Scale Room Configuration." The room consists of four walls at right angles, a floor, and a ceiling. The room interior is 3.6 m long, 2.4 m wide and 2.4 m high. The floor and one of the 2.4 m x 2.4 m walls are constructed of noncombustible materials. The noncombustible wall has an open doorway measuring 2.0 m high and 0.8 m wide. The other three walls and the ceiling are constructed from the panels under investigation. Where the panels are not used for ceiling application, the test ceiling will be selected to represent the worst-case condition anticipated in the field and will be described in the individual certifications.

The panels are subjected to an ignition source as described in ULC/ORD-C376, located in one of the two corners opposite the doorway, for a period of not less than 15 minutes. These panels have demonstrated that their contribution to fire growth within the room is sufficiently low to an extent that flames do not exit the open doorway, the floor heat flux level does not exceed 20 kW/m2, and the room temperature does not exceed 600°C as measured 300 mm from the corner diagonally opposite to the ignition source and between 670 mm and 2100 mm from the floor.

Where sprinkler protection is specified, one sprinkler head is located 75 mm below the ceiling, 2.0 m from the 2.4 m wall, and 1.2 m from the 3.6 m wall adjacent to the ignition source. The type of sprinkler head and minimum water flow rate is specified in the individual certifications. A requirement of the sprinkler system is that it is consistent with ANSI/

Building Units Certified for Canada (OERQ7)−*Continued*

NFPA 13, "Installation of Sprinkler Systems," and with generally accepted practices for the intended installation.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

The suitability of field-applied interior-finish materials that may be attached or applied to walls, ceilings, or wall-ceiling surfaces with respect to flame spread and smoke developed should be investigated on the basis of the surface-burning characteristics applicable to these materials; refer to Surface-Burning Characteristics Certified for Canada (BIKT7).

Building units investigated with respect to surface-burning characteristics are covered under Building Units Certified for Canada (BLBT7).

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C376, "Fire Growth of Foamed Plastic Insulated Building Panels in a Full-Scale Room Configuration."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BUILDING UNITS FOR * CONSTRUCTION AS TO FIRE GROWTH AND DAMAGEABILITY IN ACCORDANCE WITH ULC/ORD-C376

Control No.

* **WALL**, **CEILING** or **WALL-CEILING**

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EQUIPMENT AND SYSTEMS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (OERX7)

GENERAL

This category covers products and systems investigated for use in hazardous (classified) locations. Included are intrinsically safe products, intrinsically safe systems, associated apparatus with intrinsically safe circuit extensions, and other arrangements involving intrinsic safety as identified in the individual certifications, together with nonincendive types of protection.

This equipment has not been investigated for performance of its intended function.

RELATED PRODUCTS

Gas detectors investigated for their performance relative to their ability to detect gas are covered under Gas and Vapor Detection Equipment Listed for Use in Hazardous Locations Certified for Canada (JTPX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 14, "Industrial Control Equipment."

The basic hazardous (classified) locations standards used to investigate products in this category are CAN/CSA-C22.2 No. 157 (1992), "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations," and CSA-C22.2 No. 213 (1987), "Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY] FOR USE IN HAZARDOUS LOCATIONS ONLY AS TO INTRINSIC SAFETY

Control No.

or

[PRODUCT IDENTITY] FOR USE IN HAZARDOUS LOCATIONS AS TO FIRE, ELECTRICAL SHOCK AND EXPLOSION HAZARDS ONLY

Control No.

The words "HAZARDOUS LOCATIONS" may be abbreviated "HAZ. LOC."

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ION GENERATORS CERTIFIED FOR CANADA (OETX7)

GENERAL

This category covers portable air ionizers of the household and commercial types intended for emitting charged ions into the atmosphere. These appliances may or may not employ mechanical filters.

REBUILT PRODUCTS

This category also covers ion generators that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt ion generators are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt ion generators are subject to the same requirements as new ion generators.

FACTORS NOT INVESTIGATED

The physiological effects of the operation of these appliances, beneficial or otherwise, have not been investigated.

RELATED PRODUCTS

Electrostatic air cleaners and fans employing electrostatic air cleaners are covered under Electrostatic Air Cleaners Certified for Canada (AGGZ7).

Air-filtering appliances utilizing mechanical filtration only or ultraviolet/germicidal lamps are covered under Air-filtering Appliances Certified for Canada (AEDX7).

Deodorizers intended to be used in treating air by dispersal of chemicals or by scenting the air are covered under Deodorizers and Air Fresheners Certified for Canada (EOGX7).

Appliances employing ultraviolet lamps or ionization tubes for the purpose of treating air and having provisions for connection to heating and ventilation ducts used for air distribution are covered under Accessories, Air Duct Mounted Certified for Canada (ABQK7).

Power supplies intended for use in electrostatic air-cleaning equipment are covered under Power Supplies, Electrostatic Air-cleaning Equipment Certified for Canada (QQCH8).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 187, "Electrostatic Air Cleaners."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Ion Generator," or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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INTRINSICALLY SAFE EQUIPMENT AND SYSTEMS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (OEVX7)

GENERAL

This category covers products and systems investigated as to intrinsic safety only, as it pertains to use in hazardous locations. Included are intrinsically safe products, intrinsically safe systems, associated apparatus with intrinsically safe circuit extensions, and other arrangements involving intrinsic safety as identified in the individual certifications.

This equipment has not been investigated for performance of its intended function.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are CAN/CSA-C22.2 No. 60079-0 (2011), ''Explosive Atmospheres – Part 0: Equipment - General Requirements,'' and CAN/CSA-C22.2 No. 60079-11 (2011), ''Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety 'i'.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY] FOR USE IN HAZARDOUS LOCATIONS ONLY AS TO INTRINSIC SAFETY
Control No.
*** ***

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ISOLATION POWER TRANSFORMERS, MARINE CERTIFIED FOR CANADA (OFLZ7)

USE AND INSTALLATION

This category covers products designed and intended for installation in accordance with CSA-C22.2 No. 183.1 (1982), ''Alternating-Current (AC) Electrical Installations on Boats.'' These products typically have a 1:1 turns ratio and are primarily used to electrically isolate the boat from the shore power to mitigate the effects of galvanic currents.

These products have not been investigated for use in hazardous (classified) locations or areas requiring ignition protected equipment unless marked ''Ignition Protected.''

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No.47 (1990), ''Air-Cooled Transformers (Dry Type).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Marine Isolation Power Transformer.''

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LABORATORY EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (OGNA7)

GENERAL

This category covers laboratory equipment and accessories, such as blenders, stirrers, and other types of products as described in the individual certifications, designed for technological activities involving:

1. The measurement of physical or chemical properties of materials.
2. The measurement, control, and/or display of the functional performance of a piece of equipment.
3. Qualitative or quantitative constituent analysis of substances.
4. Preparation of materials for further analysis or measurements.

These products have been investigated with respect to risk of fire, shock, and injury to persons. The accuracy of measured, analyzed, or prepared quantities has not been investigated.

This category does not cover laboratory equipment intended for patient contact.

RELATED PRODUCTS

Other equipment that may be used in laboratories is covered under Heaters, Industrial and Laboratory for use in Hazardous Locations Certified for Canada (KGIZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 151 (1986), ''Laboratory Equipment,'' or CAN/CSA-C22.2 No. 61010-1 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Motor-operated Laboratory Equipment for Use in Hazardous Locations'' or ''Laboratory Equipment for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

*** ***

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LABORATORY HOODS AND CABINETS CERTIFIED FOR CANADA (OGOY7)

USE AND INSTALLATION

This category covers laboratory hoods intended to provide an enclosed countertop work area with exhaust for capture and removal of vapors, mists and particulate matter from the work area.

Unless specifically marked on the equipment, suitability for use with perchloric acid, radiological materials, or the like has not been investigated.

Requirements for the installation of this equipment are included in CSA Z316.5 (1994), ''Fume Hoods and Associated Exhaust Systems.''

This category does not cover biological containment cabinets.

PRODUCT MARKINGS

Laboratory hoods and cabinets are marked with (1) the manufacturer's name, trade name or trademark or other descriptive marking by which the organization responsible for the product may be identified, (2) a distinctive catalog or model number or the equivalent, (3) the electrical rating, and (4) the date or other dating period of manufacture not exceeding any three consecutive months.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA Z316.5, ''Fume Hoods and Associated Exhaust Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Laboratory Hood."

* *

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LABORATORY-USE ELECTRICAL EQUIPMENT CERTIFIED FOR CANADA (OGTK7)

USE

This category covers laboratory equipment and accessories designed for technological activities involving:

(a) The measurement of physical or chemical properties of materials.

(b) The measurement of the functional performance of a piece of equipment.

(c) Qualitative or quantitative constituent analysis of substances.

(d) Preparation of materials for further analysis or measurements.

These products have been investigated with respect to risk of fire, shock, and injury to persons. The accuracy of measured, analyzed, or prepared quantities has not been evaluated.

REBUILT PRODUCTS

This category also covers laboratory equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt laboratory equipment is factory rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt laboratory equipment is subject to the same requirements as new laboratory equipment.

RELATED PRODUCTS

Additional equipment that may be used in laboratories is covered under Laboratory Equipment Certified for Canada (OGGS7), Heaters, Industrial and Laboratory Certified for Canada (KQLR7) and Electrical and Electronic Measuring and Testing Equipment Certified for Canada (FHCW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1010.1 (1992), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part I: General Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Laboratory Equipment," or other appropriate product name as shown in the individual Listings.

The Listing Mark for rebuilt laboratory equipment includes the word "Rebuilt," "Remanufactured," "Refurbished" or "Reconditioned" preceding the product name.

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LABORATORY ELECTRICAL EQUIPMENT FOR USE IN HEALTH CARE APPLICATIONS CERTIFIED FOR CANADA (OGUI7)

USE

This category covers laboratory equipment for health care applications, used to measure, indicate, monitor or analyze substances, or to prepare materials. Examples include but are not limited to centrifuges, hot plates and stirrers, sterilizers, fiber-optic illuminators and laboratory mixers.

MODULAR SYSTEMS

Laboratory equipment may be shipped completely assembled or in modular form. Modular assemblies are intended to be field assembled to form a complete system in accordance with the provided installation instructions.

Laboratory Electrical Equipment for Use in Health Care Applications Certified for Canada (OGUI7)−*Continued*

ACCESSORIES AND SUBASSEMBLIES

Field-installed accessories and subassemblies (component assemblies) to certified equipment are provided with suitable markings and/or instructions, providing details on proper installation or assembly of the accessory/subassembly with equipment specified in the markings or instructions.

REBUILT PRODUCTS

This category also covers laboratory equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt laboratory equipment is factory rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt laboratory equipment is subject to the same requirements as new laboratory equipment.

FACTORS NOT INVESTIGATED

These products have been investigated with respect to risk of fire, shock and injury to persons. Where such equipment is included in systems that involve other pieces of equipment or mechanical operations, the investigation of the risk of fire, electric shock and personal injury has included only the equipment specifically certified in the individual certifications. The accuracy of measured, analyzed or prepared quantities has not been investigated.

RELATED PRODUCTS

Laboratory equipment intended for patient contact is covered under Medical Equipment Certified for Canada (PIDF7).

Additional equipment that may be used in laboratories is covered under Heaters, Industrial and Laboratory Certified for Canada (KQLR7), Measuring, Testing and Signal Generation Equipment Certified for Canada (PICQ7) and Laboratory Use Electrical Equipment Certified for Canada (OGTK7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 1010.1 (1992), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements," or CAN/CSA-C22.2 No. 61010-1 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements," and one or more of the following Particular Standards as applicable:

CAN/CSA-C22.2 No. 61010-2-010 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-010: Particular Requirements for Laboratory Equipment for the Heating of Materials"

CAN/CSA-C22.2 No. 1010.2.020 (1994), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-020: Particular Requirements for Laboratory Centrifuges"

CAN/CSA-C22.2 No. 1010.2.041 (1996), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-041: Particular Requirements for Autoclaves Using Steam for the Treatment of Medical Materials, and for Laboratory Processes"

CAN/CSA-C22.2 No. 61010-2-042 (1998), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-042: Particular Requirements for Autoclaves and Sterilizers Using Toxic Gas for the Treatment of Medical Materials, and for Laboratory Processes"

CAN/CSA-C22.2 No. 61010-2-043 (1998), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-043: Particular Requirements for Dry Heat Sterilizers Using Either Hot Air or Hot Inert Gas for the Treatment of Medical Materials, and for Laboratory Processes"

CAN/CSA-C22.2 No. 61010-2-045 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-045: Particular Requirements for Washer Disinfectors Used in Medical, Pharmaceutical, Veterinary and Laboratory Fields"

CAN/CSA-C22.2 No. 61010-2-051 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-051: Particular Requirements for Laboratory Equipment for Mixing and Stirring"

CAN/CSA-C22.2 No. 61010-2-061 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-061: Particular Requirements for Laboratory Atomic Spectrometers with Thermal Atomization and Ionization"

CAN/CSA-C22.2 No. 61010-2-081 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-081: Particular Requirements for Automatic and Semi-Automatic Laboratory Equipment for Analysis and Other Purposes"

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Laboratory Electrical Equipment for Use in Health Care Applications Certified for Canada (OGUI7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Laboratory Electrical Equipment for Use in Health Care Applications,'' or other appropriate product name as shown in the individual Listings.

When the size or shape of a subassembly makes it impractical to incorporate the product identification text, the product may be marked with the UL symbol, ''OGUI7'' and the control number, provided that the complete Listing Mark text appears on the smallest shipping container.

For field-installed modules, accessories and subassemblies, the product name includes the word ''Module,'' ''Accessory'' or ''Subassembly'' (e.g., ''Laboratory Equipment Accessory'').

For rebuilt equipment, the word ''Rebuilt,'' ''Remanufactured,'' ''Refurbished'' (or ''Refurb'') or ''Reconditioned'' precedes the product name.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

LABORATORY IN VITRO DIAGNOSTIC ELECTRICAL EQUIPMENT CERTIFIED FOR CANADA (OGUR7)

USE

This category covers laboratory equipment used to measure, indicate, monitor or analyze specimens, including blood and tissue samples, solely or principally for the purpose of providing information concerning one or more of the following:

- a physiological or pathological state, or
- a congenital abnormality;
- the determination of safety and compatibility with potential recipients;
- the monitoring of therapeutic measures.

Self-test IVD medical equipment is intended by the manufacturer for use by laypersons in a home environment. Examples include but are not limited to blood analyzers, blood gas analyzers and tissue analyzers, blood glucose monitors, immunoassay analyzers, microtitre plate readers, differential analyzers, chemistry analyzers, and similar products.

MODULAR SYSTEMS

Laboratory equipment may be shipped completely assembled or in modular form. Modular assemblies are intended to be field assembled to form a complete system in accordance with the provided installation instructions.

ACCESSORIES AND SUBASSEMBLIES

Field-installed accessories and subassemblies (component assemblies) to certified equipment are provided with suitable markings and/or instructions, providing details on proper installation or assembly of the accessory/subassembly with equipment specified in the markings or instructions.

REBUILT PRODUCTS

This category also covers laboratory equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt laboratory equipment is factory rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt laboratory equipment is subject to the same requirements as new laboratory equipment.

FACTORS NOT INVESTIGATED

These products have been investigated with respect to risk of fire, shock and injury to persons. Where such equipment is included in systems that involve other pieces of equipment or mechanical operations, the investigation of the risk of fire, electric shock and personal injury has included only the equipment specifically certified in the individual certifications. The accuracy of measured, analyzed or prepared quantities has not been investigated.

RELATED PRODUCTS

Laboratory equipment intended for patient contact is covered under Medical Equipment Certified for Canada (PIDF7).

Additional equipment that may be used in laboratories is covered under Heaters, Industrial and Laboratory Certified for Canada (KQLR7), Measuring, Testing and Signal Generation Equipment Certified for Canada (PICQ7) and Laboratory Use Electrical Equipment Certified for Canada (OGTK7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Laboratory In Vitro Diagnostic Electrical Equipment Certified for Canada (OGUR7)−*Continued*

The basic standards used to investigate products in this category are CSA-C22.2 No. 1010.1 (1992), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements,'' or CAN/CSA-C22.2 No. 61010-1 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 61010-2-101 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-101: Particular Requirements for In Vitro Diagnostic (IVD) Medical Equipment,'' and one or more of the following Particular Standards as applicable:

CAN/CSA-C22.2 No. 61010-2-010 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-010: Particular Requirements for Laboratory Equipment for the Heating of Materials''

CAN/CSA-C22.2 No. 1010.2.020 (1994), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-020: Particular Requirements for Laboratory Centrifuges''

CAN/CSA-C22.2 No. 1010.2.041 (1996), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-041: Particular Requirements for Autoclaves Using Steam for the Treatment of Medical Materials, and for Laboratory Processes''

CAN/CSA-C22.2 No. 61010-2-042 (1998), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-042: Particular Requirements for Autoclaves and Sterilizers Using Toxic Gas for the Treatment of Medical Materials, and for Laboratory Processes''

CAN/CSA-C22.2 No. 61010-2-043 (1998), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-043: Particular Requirements for Dry Heat Sterilizers Using Either Hot Air or Hot Inert Gas for the Treatment of Medical Materials, and for Laboratory Processes ''

CAN/CSA-C22.2 No. 61010-2-045 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-045: Particular Requirements for Washer Disinfectors Used in Medical, Pharmaceutical, Veterinary and Laboratory Fields''

CAN/CSA-C22.2 No. 61010-2-051 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-051: Particular Requirements for Laboratory Equipment for Mixing and Stirring''

CAN/CSA-C22.2 No. 61010-2-061 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-061: Particular Requirements for Laboratory Atomic Spectrometers with Thermal Atomization and Ionization''

CAN/CSA-C22.2 No. 61010-2-081 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-081: Particular Requirements for Automatic and Semi-Automatic Laboratory Equipment for Analysis and Other Purposes''

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Laboratory In Vitro Diagnostic Electrical Equipment,'' or other appropriate product name as shown in the individual Listings.

When the size or shape of a subassembly makes it impractical to incorporate the product identification text, the product may be marked with the UL symbol, ''OGUR7'' and the control number, provided that the complete Listing Mark text appears on the smallest shipping container.

For field-installed modules, accessories and subassemblies, the product name includes the word ''Module,'' ''Accessory'' or ''Subassembly'' (e.g., ''Laboratory Equipment Accessory'').

For rebuilt equipment, the word ''Rebuilt,'' ''Remanufactured,'' ''Refurbished'' (or ''Refurb'') or ''Reconditioned'' precedes the product name.

* *

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LABORATORY-USE ELECTRICAL EQUIPMENT, SPECIAL LABORATORY EQUIPMENT CERTIFIED FOR CANADA (OGVH7)

GENERAL

This category covers laboratory equipment that uses special technologies to measure, indicate, monitor or analyze substances, or to prepare materials, or to sterilize materials or areas, and other laboratory equipment that uses special technologies to perform its function. Examples include but are not limited to room sterilizers, equipment sterilizers, disinfection equipment, laboratory air cleaners, and decontamination equipment.

This equipment has been Classified as to electrical fire, shock and mechanical hazards only.

The individual units of a system may be designed to be interconnected by means of one or more of the wiring methods outlined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

The nature of some of this equipment is such that it involves features of installation and use not ordinarily presented in utilization equipment. Such features are covered in the manufacturer's installation instructions. Installation should, if possible, be made in a room or compartment in which provision is made to prevent fire or injury to persons, and should also be in accordance with the manufacturer's installation instructions furnished with the equipment and the requirements of the Authorities Having Jurisdiction.

MODULAR SYSTEMS

Special laboratory equipment may be shipped completely assembled or in modular form. Modular assemblies are intended to be field assembled to form a complete system in accordance with the provided installation instructions.

ACCESSORIES AND SUBASSEMBLIES

Field-installed accessories and subassemblies (component assemblies) to Classified equipment are provided with suitable markings and/or instructions, providing details on proper installation or assembly of the accessory/subassembly with equipment specified in the markings or instructions.

UNEVALUATED FACTORS

These products have been investigated with respect to risk of fire, shock and injury to persons. Where such equipment is included in systems that involve other pieces of equipment or mechanical operations, the investigation of the risk of fire, electric shock and personal injury has included only the equipment specifically Classified in the individual Classifications. The accuracy of measured, analyzed or prepared quantities has not been investigated.

RELATED PRODUCTS

Laboratory equipment intended for patient contact is covered under Medical Equipment Certified for Canada (PIDF7).

Additional equipment that may be used in laboratories is covered under:

Heaters, Industrial and Laboratory Certified for Canada (KQLR7)

Laboratory Electrical Equipment for Use in Health Care Applications Certified for Canada OGUI7)

Laboratory In Vitro Diagnostic Electrical Equipment Certified for Canada (OGUR7)

Laboratory-use Electrical Equipment Certified for Canada (OGTK7)

Measuring, Testing and Signal-generation Equipment Certified for Canada (PICQ7)

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 61010-1-2004, "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME*]
AS TO ELECTRICAL FIRE, SHOCK AND MECHANICAL HAZARDS ONLY
Control No.

* **LABORATORY DISINFECTING EQUIPMENT**, **ROOM DECONTAMINATION EQUIPMENT**, **ROOM SANITIZER**, or other appropriate product name as shown in the individual Classifications

For field-installed modules, accessories and subassemblies, the product name includes the word "MODULE," "ACCESSORY" or "SUBASSEMBLY" (e.g., "ROOM SANITIZER ACCESSORY").

* *

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LADDERS CERTIFIED FOR CANADA (OHZR7)

USE

This category covers portable ladders constructed of wood, metal or reinforced plastic which are intended for general use in households or in commercial establishments. These consist of combination ladders, extension ladders, extension trestle ladders, platform ladders, sectional ladders, single ladders, special-purpose ladders, step stools, step ladders and trestle ladders.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-Z11 (2012), "Portable Ladders."

All portable ladders covered by this standard are classified as follows:

GRADE	LOAD RATING
1AA	Special duty
1A	Extra heavy duty
1	Heavy
2	Medium
3	Light

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Metal Ladder," "Wood Ladder" or "Reinforced Plastic Ladder," or other appropriate product name as shown in the individual Listings.

* *

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LAMPHOLDERS CERTIFIED FOR CANADA (OIMZ7)

LAMPHOLDERS, ELECTRIC DISCHARGE CERTIFIED FOR CANADA (OJAX7)

Lampholders, Electric Discharge, Over 1000 Volts Certified for Canada (OJOV7)

USE

This category covers lampholders and electrode receptacles for use with electric discharge lamps and tubes.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 34 (1987), "Electrode Receptacles, Fittings, and Connectors for Gas Tubes," and CAN/CSA-C22.2 No. 43 (2008), "Lampholders."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Lam-

Lampholders, Electric Discharge, Over 1000 Volts Certified for Canada (OJOV7)−*Continued*

pholder'' or ''Electric Discharge Lampholder,'' or other appropriate product name as shown in the individual Listings.

* *

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Lampholders, Electric Discharge, 1000 Volts or Less Certified for Canada (OKCT7)

USE

This category covers lampholders and combination lampholders with starter holders intended for use with electric discharge or fluorescent lamps.

This category also covers GU24 and GU24-1 holders for fluorescent and LED self-ballasted lamps and lamp adapters with mating pin bases.

Lampholders for High Temperature — Thermoplastic lampholders investigated for use at temperatures greater than 90°C (194°F) are indicated in the individual certifications. These products are marked with ''T#'' (where ''#'' is the temperature rating).

RELATED PRODUCTS

Separate starter holders are covered under Holders for Automatic Starters Certified for Canada (FLPZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, ''Lampholders.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lampholder'' or ''Electric Discharge Lampholder,'' or other appropriate product name as shown in the individual Listings.

* *

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LAMPHOLDERS, FITTINGS CERTIFIED FOR CANADA (OKQR7)

GENERAL

This category covers attachments and parts intended for use with screw-shell lampholders to modify the lampholders for certain conditions of usage.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, ''Lampholders,'' in addition to the requirements contained in CSA Electrical Bulletin No. 1444A, ''Diode Lamp-Life Extenders.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lampholder Fitting'' or ''Shadeholder,'' or other appropriate name as shown in the individual Listings.

* *

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LAMPHOLDERS, INCANDESCENT CERTIFIED FOR CANADA (OLDZ7)

Lampholders, Adapters Certified for Canada (OLRX7)

GENERAL

This category covers screw-shell lamp adapters. Included are male-to-female screw-shell adapters and screw-shell adapters provided with attachment-plug blades or receptacles.

RELATED PRODUCTS

For plug-in devices with a lampholder intended to be used as a nightlight, see Nightlights Certified for Canada (QOYX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, ''Lampholders.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Adapter,'' ''Lampholder Adapter'' or ''Incandescent Lampholder Adapter,'' or other appropriate product name as shown in the individual Listings.

* *

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Lampholders, Candelabra and Miniature Certified for Canada (OMFV7)

GENERAL

This category covers screw-shell lampholders of the candelabra (E12) and miniature (E10) base sizes.

Candelabra and candle lampholders are those having exposed wiring terminals or other live parts intended for use with a close fitting, nonmetallic outer decorative casing, which is used in addition to the paper covering on the screw shell and terminals, to enclose the entire lampholder and provide the required depth of lamp cavity.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 43, ''Lampholders.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lampholder,'' ''Miniature Lampholder'' or ''Candelabra Lampholder.''

* *

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Lampholders, Intermediate Base Certified for Canada (OMTT7)

GENERAL

This category covers screw-shell lampholders of the intermediate (E17) base size.

Candle lampholders are those having exposed wiring terminals or other live parts intended for use with a close fitting, nonmetallic outer decorative casing, which is used, in addition to the paper covering on the screw shell and terminals, to enclose the entire lampholder and provide the required depth of lamp cavity.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Lampholders, Intermediate Base Certified for Canada (OMTT7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, ''Lampholders.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lampholder'' or ''Intermediate Lampholder.''

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Lampholders, Medium Base Certified for Canada (ONHR7)

GENERAL

This category covers screw-shell lampholders of the admedium (E29) and medium (E26) base sizes.

Candle lampholders are those having exposed wiring terminals or other live parts intended for use with a close fitting, nonmetallic outer decorative casing, which is used, in addition to the paper covering on the screw shell and terminals, to enclose the entire lampholder and provide the required depth of lamp cavity.

An admedium (E29) base is not intended for use with ordinary incandescent lamps.

Switched lampholders are tested on circuits involving a potential to ground of 125 V.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, ''Lampholders.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lampholder,'' ''Medium Lampholder'' or ''Incandescent Lampholder.'' The French translation ''Douille'' may also be used in conjunction with the preceding product names, e.g., ''Medium Lampholder (Douille).''

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Lampholders, Mogul Base Certified for Canada (ONUZ7)

GENERAL

This category covers screw-shell lampholders of the mogul (E39) base size.

Switched lampholders are tested on circuits involving a potential to ground of 125 V.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, ''Lampholders.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated

Lampholders, Mogul Base Certified for Canada (ONUZ7)−*Continued*

in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lampholder'' or ''Mogul Lampholder.''

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Lampholders, Miscellaneous Certified for Canada (OOIX7)

USE

This category covers lampholders for lamps that employ other than the usual screw-shell bases or designed for specialized uses.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 43, ''Lampholders,''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Lampholder'' or ''Miscellaneous Lampholder.''

* *

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LAMPS CERTIFIED FOR CANADA (OOKH7)

LAMPS, INCANDESCENT, MEDIUM BASE CERTIFIED FOR CANADA (OOKZ7)

USE

This category covers incandescent, medium screw-base lamps up to 300 W intended for general lighting and for luminaires and portable luminaires.

This category does not cover lamps designated for specific uses, such as traffic signal, vibration, street-lighting lamps, etc.

PRODUCT MARKINGS

The following product markings are permanent, legible, and located where readily accessible for viewing after assembly of the lamp in the final product, except as permitted otherwise:

1. Applicant's identification
2. Voltage and wattage rating
3. Additional markings as may be required by the applicable standard(s) for specific modules or usages

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0 (1991), ''General Requirements – Canadian Electrical Code, Part II,'' and CSA-C22.2 No. 84 (2005), ''Incandescent Lamps,'' in addition to the applicable requirements of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Medium-base Incandescent Lamp,'' ''Lamp'' or ''Light Bulb.''

LAMPS, SELF-BALLASTED AND LAMP ADAPTERS CERTIFIED FOR CANADA (OOLR7)

USE AND INSTALLATION

This category covers self-ballasted lamps consisting of a ballast, transformer or power supply, and an integrated or replaceable lamp, for direct connection to a lampholder. Products in this category employ various lamp technologies including, but not limited to, fluorescent lamps and high-intensity-discharge (HID) lamps. Devices with an integral lamp are termed ''self-ballasted''; devices with a replaceable lamp are termed ''adapters.'' These products are intended for operation at the voltage marked on the product.

This category does not cover:

Self-ballasted lamps and lamp adapters rated 50 W or greater for installation in specific luminaires

LED lamps

These products are intended for connection to lampholders for outlet boxes and lampholders provided in luminaires, portable luminaires and signs. They are provided with ANSI lamp bases. ANSI base configurations are covered in standards such as NEMA_ANSLG C81.61, ''Electrical Lamp Bases – Specifications for Bases (Caps) for Electric Lamps.'' When differentiating between low-voltage and line-voltage ANSI lamp bases, consideration is given to Tables 7.3.3.1 and 7.3.3.2 in CSA-C22.2 No. 250.0, ''Luminaires.''

These products are generally for use in indoor, dry locations unless additionally investigated and marked for applications such as damp locations (not directly exposed to water). Products investigated and marked for wet locations may have additional restrictions regarding use or orientation.

These products have been investigated for use in the smaller of a 152 mm (6 in.) or 203 mm (8 in.) diameter, totally enclosed, recessed luminaire, if they will physically fit, unless marked not for use in a totally enclosed luminaire.

These products have not been investigated for use in emergency lighting equipment or exit signs.

RELATED PRODUCTS

Self-ballasted lamps and lamp adapters rated 50 W or greater for installation in specific luminaires are covered under Lamps, Self-ballasted and Lamp Adapters Certified for Canada (OOLR8).

Self-ballasted light-emitting-diode (LED) lamps are covered under Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV7).

LED lamps intended for specific luminaires or special applications are covered under Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV8).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1993 (2012), ''Self-Ballasted Lamps and Lamp Adapters.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Self-ballasted Lamp'' or ''Lamp Adapter,'' or other appropriate product name as shown in the individual Listings.

* *

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LAMPS, SELF-BALLASTED, LIGHT-EMITTING-DIODE TYPE CERTIFIED FOR CANADA (OOLV7)

USE AND INSTALLATION

This category covers self-ballasted light-emitting-diode (LED) lamps, rated up to 347 V ac nominal, provided with ANSI lamp bases.

Self-ballasted lamps have integral control and driver circuitry allowing direct connection to a voltage source (e.g., mains, transformer) without the use of an external constant-current source such as a driver or ballast. Such lamps are intended for operation at their marked voltage(s).

These products are intended for connection to lampholders for outlet boxes and lampholders provided in luminaires, portable luminaires and signs. They are provided with ANSI lamp bases. ANSI base configurations are covered in standards such as NEMA_ANSLG C81.61, ''Electrical Lamp Bases – Specifications for Bases (Caps) for Electric Lamps.'' When differentiating between low-voltage and line-voltage ANSI lamp bases, consideration is given to Tables 7.3.3.1 and 7.3.3.2 in CSA-C22.2 No. 250.0, ''Luminaires.''

Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV7)−*Continued*

LED lamps intended to replace or supplant traditional incandescent lamps are generally for use in indoor, dry locations unless additionally investigated and marked for applications such as damp locations (not directly exposed to water). Products investigated and marked for wet locations may have additional restrictions regarding use or orientation.

These products have been investigated for use in the smaller of a 152 mm (6 in.) or 203 mm (8 in.) diameter, totally enclosed, recessed luminaire, if they will physically fit, unless marked not for use in a totally enclosed luminaire.

LED lamps intended to replace or supplant traditional fluorescent lamps have been investigated for use in totally enclosed lamp compartments with 25.4 mm (1 in.) of clearance around the sides and underneath the lamp, unless marked not for use in a totally enclosed luminaire.

Products marked ''Suitable for Use in Open Luminaires'' are intended to replace tungsten-halogen lamps in applications where the luminaire is open and does not require an additional lamp containment barrier.

These products have not been investigated for use in emergency lighting equipment or exit signs.

RELATED PRODUCTS

LED lamps intended for connection to constant-current power sources (e.g., LED drivers), or those intended for specific luminaires or special applications are covered under Lamps, Self-ballasted, Light-emitting-diode Type Certified for Canada (OOLV8).

LED retrofit kits intended for field installation in UL-certified luminaires or office-furnishing lights are covered under Light-emitting-diode Retrofit Luminaire Conversion Kits Certified for Canada (IFAR7).

Self-ballasted fluorescent and high-intensity-discharge (HID) lamps and lamp adapters are covered under Lamps, Self-ballasted and Lamp Adapters Certified for Canada (OOLR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 1993 (2012), ''Self-Ballasted Lamps and Lamp Adapters,'' and CAN/CSA-C22.2 No. 250.13 (2012), ''Light Emitting Diode (LED) Equipment for Lighting Applications.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''LED Lamp,'' or other appropriate product name as shown in the individual Listings.

* *

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LAMPS, SPECIALTY CERTIFIED FOR CANADA (OONB7)

USE

This category covers specialty lamps, usually of the common bulb shapes, containing assemblies of light sources (such as miniature incandescent bulbs, light-emitting diodes) and associated electrical components, and provided with bases of various sizes, usually of the standard configurations covered in ANSI C81.61 (1990), ''Electric Lamp Bases.''

These lamps are intended for use in certified equipment, such as exit fixtures or exit lights, where the product marking specifies the use of a lamp covered under this category.

PRODUCT MARKINGS

The lamp or the smallest unit container is marked with the wattage, voltage, manufacturer's identification and catalog number.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 43, ''Lampholders,'' CSA-C22.2 No. 84, ''Incandescent

Lamps, Specialty Certified for Canada (OONB7)−*Continued*

Lamps,'' and CSA Technical Information Letter No. B-36B, ''Self-Ballasted Fluorescent Lamps with Medium Screw-Base and Integral-Ballasted Adapters with Medium Screw-Base for Fluorescent Lamps Intended for Use in Dry or Damp Locations.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SPECIALTY LAMP
FOR USE IN PRODUCTS MARKED
TO USE UL CLASSIFIED LAMP (+) (++)
Control No.

(+) Company identification
(++) Lamp catalog number

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LAUNDRY EQUIPMENT ACCESSORIES CERTIFIED FOR USE IN SPECIFIED EQUIPMENT CERTIFIED FOR CANADA (OOWK7)

USE AND INSTALLATION

This category covers accessories that allow operation of washing machines and clothes dryers through card-reading controls. These accessories are rated 600 V ac or less and are investigated for installation on specific models of washing machines and clothes dryers as indicated in the installation instructions.

Laundry-control accessories are intended to be installed by trained service personnel in accordance with the accessory manufacturer's installation instructions and CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 169, ''Electric Clothes Washing Machines and Extractors,'' and/or CAN/CSA-C22.2 No. 112, ''Electric Clothes Dryers.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

LAUNDRY EQUIPMENT ACCESSORY
FOR USE IN UL LISTED *
Control No.
* **ELECTRIC WASHERS** or **ELECTRIC DRYERS**

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LEAK-DETECTION EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (OPDH7)

GENERAL

This category covers leak-detection equipment, including control units, indicators, sensors, probes and auxiliary devices used as part of leak-detection systems.

Certain products in this category are associated apparatus and are intended for installation in unclassified locations. They are provided with intrinsically safe circuit(s) as indicated on the product, for extension into a hazardous (classified) location.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Leak Detection Equipment for Use in Hazardous Locations'' or ''Leak Detection Equipment (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

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LIGHTNING PROTECTION CERTIFIED FOR CANADA (OVGR7)

LIGHTNING CONDUCTORS, AIR TERMINALS AND FITTINGS CERTIFIED FOR CANADA (OVTZ7)

GENERAL

This category covers lightning protection components intended to be installed to provide a lightning protection system complying with CAN/CSA B72 (1987), ''Installation Code for Lightning Protection Systems.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Lightning Conductor,'' ''Air Terminal'' or ''Fitting.''

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LINE ISOLATION MONITORS CERTIFIED FOR CANADA (OWLS7)

USE

This category covers line isolation monitors, with or without supplementary remote indicating units, intended for use in isolated (ungrounded) power distribution systems in hospitals and other health care facilities. These devices are used to monitor the impedances to ground of an isolated circuit and provide a visual and audible indication of an abnormal leakage condition of the circuit being monitored.

The monitor and supplementary indicating units are intended to be installed in any of the following locations:

(a) Nonhazardous ordinary locations
(b) In operating rooms, 5 ft or more above the floor level
(c) Included as part of an isolated power-supply center

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 204, ''Line Isolation Monitors,'' and CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Line Isolation Monitor'' or ''Line Isolation Monitor Accessory.''

* *

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LOCKS CERTIFIED FOR CANADA (OWVV7)

HIGH-SECURITY ELECTRONIC LOCKS CERTIFIED FOR CANADA (OZDC7)

This category covers high security electronic locks intended for attachment on doors of safes, chests, vaults, automated banking machines, depository units, and the like. The locks are intended to provide a means of locking the boltwork against unauthorized opening. Electronic combination locks are investigated primarily for resistance to unauthorized opening and security against mechanical attack in an attempt to release the locking mechanism.

Electronic locks provide resistance to unauthorized opening for a limited period of time. Electronic combination locks covered under this category may or may not have integral protection against entry by force.

Electronic locks are powered by electrical circuits, or they generate their own power as a function of their operation.

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Electronic Locks, High Security Certified for Canada (OZDU7)

USE

This category covers burglary-resistant electronic combination locks designed for attachment to doors of safes, chests, vaults, automated banking machines, depository units, and the like. The locks are intended to provide a means of locking the boltwork against unauthorized opening.

These locks are highly resistant to expert or professional manipulation. The protection against expert manipulation includes an audit trail and a resistance to tampering after installation. Combination locks categorized as High are considered suitable for use on torch-resistant safes and chests, Class TRTL-15X6 and TRTL-30X6 vaults, automated banking machines, and night depositories.

ADDITIONAL INFORMATION

For additional information, see Electronic Locks Certified for Canada (OZDC7) and Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S334, ''Burglary Resistant Electronic Combination Locks.''

UL MARK

The Security Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SECURITY'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Burglary Resistant Electronic Combination Lock.''

* *

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LOCKING CYLINDERS CERTIFIED FOR CANADA (OZMV7)

USE

This category covers key-operated cylinders used in door locks and shunt switches for local and police-station-connected burglar alarm systems. The locking cylinders are intended to protect against unauthorized opening by picking or drilling the cylinder.

Locking Cylinders Certified for Canada (OZMV7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S328, ''Burglary Resistant Key Locks.''

UL MARK

The Security Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SECURITY'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Locking Cylinder.''

* *

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Cabinet-locking Cylinders Certified for Canada (OZQI7)

USE

This category covers key-operated cabinet-locking cylinders intended for use in cabinets and drawers. The cabinet-locking cylinders are intended to protect against unauthorized opening by picking or drilling the cylinder.

ADDITIONAL INFORMATION

For additional information, see Locking Cylinders Certified for Canada (OZMV7) and Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S328 (1998), ''Burglary Resistant Key Locks.''

UL MARK

The Security Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SECURITY'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Cabinet Locking Cylinder.''

* *

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Door Locks Certified for Canada (OZTU7)

USE

This category covers key-actuated locking assemblies for use on doors of stores, buildings, residences, and the like, to resist unauthorized opening by picking, impression techniques or drilling the lock cylinder or assembly, sawing or drilling the lock bolt, pulling the lock cylinder or other method involving the use of small hand tools.

ADDITIONAL INFORMATION

For additional information, see Locking Cylinders Certified for Canada (OZMV7) and Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S328, ''Burglary Resistant Key Locks.''

UL MARK

The Security Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SECURITY'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Door Lock.''

* *

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Door-lock Accessories Certified for Canada (OZWZ7)

USE

This category covers door-lock accessories that are used in conjunction with door locks to increase their resistance to unauthorized opening.

ADDITIONAL INFORMATION

For additional information, see Locking Cylinders Certified for Canada (OZMV7) and Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S328 (1998), "Burglary Resistant Key Locks."

UL MARK

The Security Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Security Listing Mark for these products includes the UL Mark for Canada symbol with the word "SECURITY" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Door Lock Accessory," or other appropriate product name as shown in the individual Listings.

* *

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LOW-VOLTAGE AC POWER-SWITCHING DEVICES CERTIFIED FOR CANADA (PAPU7)

GENERAL

This category covers devices such as low-voltage ac power circuit breakers, low-voltage dc power circuit breakers, low-voltage ac power circuit protectors, low-voltage ac integrally-fused power circuit breakers, and low-voltage power-switching device adapters.

Low-voltage power-switching devices have been investigated for continuous duty at 100% of their current ratings and are designed to provide service-entrance, feeder or branch-circuit protection. They may be manually and/or electrically operable.

These low-voltage power-switching devices, enclosures and adapters are for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such markings are independent of any marking on terminal connectors and are on a wiring diagram or other readily-visible location.

Stationary equipment is normally bus connected. However, terminal pads are provided which can accommodate field-installed pressure-wire connectors.

PRODUCT MARKINGS AND RATINGS

Unless the device is marked to indicate otherwise, the wiring space and current-carrying capacity are based on the use of 60°C wire in circuits rated 100 A or less, and on the use of 75°C wire for higher amp-rated circuits.

Low-voltage power-switching devices suitable for use with an accessory are marked to indicate the accessory(s), the electrical rating and proper connections (if not obvious).

Low-voltage power-switching devices without enclosures are intended for use only in Listed enclosures or as part of other Listed equipment which has been and are marked for use with a specific low-voltage power switching device.

* *

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ADAPTERS, LOW-VOLTAGE AC POWER-SWITCHING DEVICES CERTIFIED FOR CANADA (PAQQ7)

GENERAL

This category covers equipment designed to adapt low-voltage power-switching devices to receiving devices, such as individual enclosures, dead-front switchboards (switchgear), panelboards, etc. Field installation is intended only in those receiving devices which are specifically marked for their use.

Adapters, Low-voltage AC Power-switching Devices Certified for Canada (PAQQ7)−*Continued*

These adapters have been investigated in conjunction with power-switching devices and have been found suitable to carry 100% of the current rating of the power-switching device, and to withstand the maximum fault-current levels specified on the power-switching device.

PRODUCT MARKINGS

The adapters are marked to indicate the power-switching device with which they may be used.

ADDITIONAL INFORMATION

For additional information, see Low-voltage AC Power-switching Devices Certified for Canada (PAPU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 31 (1989), "Switchgear Assemblies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Low Voltage Power Switching Device Adapter."

* *

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LOW-VOLTAGE AC POWER CIRCUIT BREAKERS CERTIFIED FOR CANADA (PAQX7)

GENERAL

This category covers low-voltage power circuit breakers specifically designed to provide service-entrance, feeder or branch-circuit protection or serve as a disconnecting means. They are covered by the classifications indicated by the label designation as follows:

Low-voltage ac power circuit breaker — Without enclosure, and with or without noninterchangeable trip devices.

Low-voltage ac power breaker frame — Frame only of power circuit breaker with provision for interchangeable trip devices. A certified low-voltage ac power circuit breaker frame is certified for use only with certified low-voltage ac power circuit breaker trip device.

Low-voltage ac power circuit breaker trip device — Trip device only of power circuit breaker having provisions for interchangeable trip devices.

The frame size determines the maximum continuous current rating for all parts of a low-voltage ac power circuit breaker except the coils of the direct acting trip device. The rating of the trip device determines the actual continuous current rating.

The trip devices may contain ground-fault current, longtime-delay overcurrent, short-time-delay overcurrent and instantaneous overcurrent trip elements that may be adjustable. The tolerance of the marked position of the longtime-delay overcurrent trip setting is plus or minus 10%.

A ground-fault current trip element is one that functions at all values of current at or above a predetermined value of fault current to ground.

An instantaneous overcurrent trip element is one that functions with no purposely delayed action at all values of current at or above a predetermined value of overcurrent.

A long-time overcurrent trip element is one that functions with a purposely delayed action at all values of current between a predetermined value of overcurrent and the short-time or instantaneous pick-up settings of the circuit breaker.

A short-time-delay overcurrent trip element is one that functions with a purposely delayed action at all values of current between a predetermined value of overcurrent and the short-time current rating of the circuit breaker.

Circuit breakers without enclosures are intended for use only as part of other certified equipment investigated and marked for use with specific circuit breakers.

PRODUCT MARKINGS

Low-voltage ac power circuit breakers are marked with maximum voltage, frequency, continuous current, short-time current, short-circuit current (interrupting rating) and control voltage ratings. The short-time current rating is the designated limit of fault current that the low-voltage ac power circuit breaker can successfully carry for a short interval. Other rating information, such as the nominal design voltage and time-delay overcurrent trip setting, may be provided.

Circuit breakers without trip devices cannot of themselves respond to overcurrent, short-circuit or ground faults and are marked "No Over-

Low-voltage AC Power Circuit Breakers Certified for Canada (PAQX7)−*Continued*

Current Protection Provided'' or ''If Over-Current Protection is Required, Use With Type ____ Protective Relays.'' Circuit breakers without trip devices can respond to overcurrent when properly connected to protective relays.

ADDITIONAL INFORMATION

For additional information, see Low-voltage AC Power-switching Devices Certified for Canada (PAPU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 31 (1989), ''Switchgear Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Low-Voltage AC Power Circuit Breaker,'' ''Low Voltage AC Power Breaker Frame'' or ''Low Voltage AC Circuit Breaker Trip Unit.''

* *

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LOW-VOLTAGE AC INTEGRALLY-FUSED POWER CIRCUIT BREAKERS CERTIFIED FOR CANADA (PASQ7)

GENERAL

This category covers low-voltage ac integrally fused power circuit breakers rated 600 V maximum. Low-voltage ac integrally fused power circuit breakers include all the mechanical features of low-voltage ac power circuit breakers and, in addition, have current limiters or current-limiting fuses that function to increase the fault-current interrupting rating of the low-voltage ac integrally fused power circuit breakers.

These devices have been investigated for use on three-phase circuits having available fault currents of 200,000 rms symmetrical amps, maximum.

In addition to overcurrent trip elements of the low-voltage ac power circuit breakers, these are provided with an anti-single-phase tripping device that automatically opens the circuit breaker contacts in response to circuit interruption by the current limiter or the current-limiting fuse.

These devices are intended for use in certified switchgear or switchboards with certified adapters.

PRODUCT MARKINGS

Low-voltage ac integrally fused circuit breakers are marked with the maximum voltage, frequency, continuous current, short-circuit current (interrupting rating), intended fuse rating and type, and control voltage ratings. Other rating information, such as the nominal design voltage and time-delay overcurrent tripping setting, may be provided.

ADDITIONAL INFORMATION

For additional information, see Low-voltage AC Power-switching Devices Certified for Canada (PAPU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 31 (2010), ''Switchgear Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Low Voltage AC Integrally Fused Power Circuit Breaker.''

* *

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LOW-VOLTAGE DC POWER CIRCUIT BREAKERS CERTIFIED FOR CANADA (PAXW7)

USE

Low-voltage DC Power Circuit Breakers Certified for Canada (PAXW7)−*Continued*

This category covers stationary and draw-out low-voltage dc air and power circuit breakers specifically designed to provide service-entrance, feeder or branch-circuit protection in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Air circuit breakers are rated at a nominal voltage of 750 V dc and less.

Power circuit breakers are rated at a nominal voltage greater than 750 V dc and up to 3000 V dc.

Low-voltage dc air and power circuit breakers are separated into four types: general purpose, rectifier, high speed and semi-high speed.

These products are intended for use in certified switchgear or switchboards with certified adapters.

PRODUCT MARKINGS

These products are marked with the type of circuit breaker, frame size, rated maximum voltage, rated continuous current, rated peak current (when applicable), rated short-time current (where applicable), rated short-circuit current and rated control voltage.

ADDITIONAL INFORMATION

For additional information, see Low Voltage AC Power Switching Devices Certified for Canada (PAPU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 31, ''Switchgear Assemblies,'' and IEEE C37.14, ''Low-Voltage DC Power Circuit Breakers Used in Enclosures.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''DC Air Circuit Breaker'' or ''DC Power Circuit Breaker,'' preceded by the applicable product type: ''General-purpose,'' ''High-speed,'' ''Semi-high-speed'' or ''Rectifier.''

* *

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TRIP DEVICES CERTIFIED FOR USE IN LOW-VOLTAGE AC POWER CIRCUIT BREAKERS CERTIFIED FOR CANADA (PAYK7)

USE

This category covers trip devices suitable for use in place of the original trip device of a low-voltage ac power circuit breaker. Certification covers only the trip device in its ability to sense and respond to overcurrent and fault-current conditions.

This category does not cover the circuit breaker on which the trip device is mounted.

ADDITIONAL INFORMATION

For additional information, see Low-voltage AC Power Circuit Breakers Certified for Canada (PAQX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 31 (1989), ''Switchgear Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TRIP DEVICE
IN ACCORDANCE WITH CSA-C22.2 No. 31-M89
Control No.

* *

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MANAGEMENT EQUIPMENT, ENERGY CERTIFIED FOR CANADA (PAZX7)

USE

This category covers energy management equipment that energizes or de-energizes electrical loads to achieve the desired use of electrical power. This equipment normally controls electrical loads by responding to sensors or transducers monitoring power consumption, by sequencing, by cycling the loads through the use of preprogrammed data logic circuits, or any combination thereof. Devices responding to signals from a utility company may receive the signals over the power lines or as radio signals.

Typical loads controlled are space heating, air conditioning, lighting and other similar loads.

Devices are intended to be used only within the manufacturer's brand and product series as indicated in the manufacturer's instructions. Exceptions are specifically identified.

FACTORS NOT INVESTIGATED

The effects of the controls on the performance ratings of the connected loads have not been investigated.

PRODUCT MARKINGS

"Energy Management Equipment Enclosure," "Energy Management Equipment Enclosure Part," "Energy Management Equipment Subassembly" and "Energy Management Equipment Accessory" require modular labeling. The marking on the individual subassembly, or smallest container, will make reference to 1) a wiring diagram for interconnection of a system, and 2) the various combinations of subassemblies that may be employed to comprise the system unit.

RELATED PRODUCTS

Signal system units incorporating energy management systems are covered under Signal System Units Certified for Canada (UDTZ7).

Switching devices operated by a clock mechanism and other similar type products used to energize or de-energize loads are covered under Switches, Clock Operated Certified for Canada (WGZR7).

Energy-usage-monitoring equipment (not controlling loads directly) is covered under Energy Usage Monitoring Systems Certified for Canada (FTRZ7).

Measurement equipment is covered under Measuring, Testing and Signal-generation Equipment Certified for Canada (PICQ7).

Temperature-indicating and -regulating switches are covered under Temperature-indicating and -Regulating Equipment Certified for Canada (XAPX7) and Controllers, Refrigeration Certified for Canada (SDFY7).

Nonindustrial photoelectric switches for lighting control and/or motion-sensitive switches intended for nonindustrial applications are covered under Switches, Photoelectric Certified for Canada (WJCT7).

Plug-in, locking-type photocontrols for use with area lighting intended for parking lot and roadway lighting are covered under Photocontrols, Plug-in, Locking Type Certified for Canada (WJFX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 205 (1983), "Signal Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Energy Management Equipment," "Open Energy Management Equipment," "Enclosed Energy Management Equipment," "Energy Management Equipment Enclosure," "Energy Management Equipment Enclosure Part," "Energy Management Equipment Subassembly" or "Energy Management Equipment Accessory."

The word "Management" may be abbreviated "Mgmt" or "Mgt" (with or without a period); the word "Equipment" may be abbreviated "Equip" or "Eqpt" (with or without a period).

* *

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MANIFOLDS CERTIFIED FOR CANADA (PBBZ7)

USE

This category covers manifolds for high-pressure gas cylinders that are designed to eliminate pipe joints where valves, gauges, etc. are to be grouped at a central location. The individual Listings identify the fluids with which these devices are intended to be used.

* *

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COMPRESSED GAS MANIFOLDS CERTIFIED FOR CANADA (PCRT7)

USE

This category covers compressed gas manifolds intended for use with oxygen, nitrogen, nitrous oxide, carbon dioxide, air, inert gases, anhydrous ammonia, and fuel gases other than acetylene, and may be of the portable or stationary type. These manifolds are intended for connecting together two or more compressed gas cylinders. The manifolds are marked to indicate the gas or gases and pressures for which they are designed.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C407 (1974), "High-Pressure Gas Manifolds."

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged or the Listing Mark on the product is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Manifold – Compressed Gas." The statement "___ psi max for use with [gas]" is also included if not marked elsewhere on the product.

* *

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LP-GAS CONTROL MANIFOLDS CERTIFIED FOR CANADA (PDFR7)

USE AND INSTALLATION

This category covers various types of manifolds intended to be used in LP-gas systems to interconnect two containers. They serve to allow gas flow from one container at a time and, in the case of line breakage from one of the containers, will prevent both containers from emptying. They may be of the block, disc check, manually operated, or automatic-changeover types. Certain automatic-changeover manifolds also serve as first-stage regulators since they reduce the pressure to the second-stage regulator. Manual- or automatic-changeover manifolds may be incorporated in the assembly of integral two-stage regulators.

These devices are intended to be installed and used in accordance with CSA B149.2, "Propane Storage and Handling Code."

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C407 (1974), "Guide for the Investigation of High-Pressure Gas Manifolds," ULC/ORD-C125 (1992), "Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief)," and/or ULC/ORD-C144 (1975), "Guide for the Investigation of Pressure-Regulating Valves."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Control Manifold for LP-Gas."

* *

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MARKING AND CODING EQUIPMENT, ELECTRONIC CERTIFIED FOR CANADA (PGBE7)

USE AND INSTALLATION

This category covers electronic marking and coding equipment rated 600 V or less. Included in this category are ink jet printers or similar systems for production line labeling and/or coding. Units covered under this category normally are located in commercial or industrial environments. This equipment may be cord connected or have provision for field wiring. The units are marked with the type or types of ink for which they have been investigated.

RELATED PRODUCTS

Printing equipment intended for use in other applications is covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 950 (1993), "Safety of Information Technology Equipment, Including Electrical Business Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Marking and Coding Equipment," "Ink Jet Coding Machine," "Ink Jet Marking Machine," "Laser Coding Machine" or "Laser Marking Machine."

* *

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MASSAGE AND EXERCISE MACHINES CERTIFIED FOR CANADA (PGXX7)

GENERAL

This category covers motor-operated massage and exercise machines, such as vibrating and massaging chairs, hand-held massagers, exercise treadmills, and the like. Motor-operated massage machines include electric vibrators of the magnetic and motor-driven types.

FACTORS NOT INVESTIGATED

Any physiological effects produced from the use of these massage and exercise machines have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Massage Machine" or "Exercise Machine," or other appropriate product name as shown in the individual Listings.

* *

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MATERIAL LIFTS CERTIFIED FOR CANADA (PGZH7)

USE

This category covers manually or electrically operated material lifts intended to lift or support material loads. They are not intended to lift or support people.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B44, "Safety Code for Elevators."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Manually-Operated Material Lift" or "Electrically-Operated Material Lift."

* *

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MATTRESSES AND BEDDING EQUIPMENT CERTIFIED FOR CANADA (PHIA7)

MATTRESSES CERTIFIED FOR FLAMMABILITY CERTIFIED FOR CANADA (PHIX7)

USE

This category covers mattresses and mattress sets intended for use in residential and institutional environments. Specific institutional occupancies include but are not limited to hotels, motels, nursing homes, hospitals, educational, detention, and correctional institutions.

Authorities Having Jurisdiction should be consulted as to the specific requirements covering the acceptance and use of these products in the intended occupancies.

PRODUCT TESTING

These products exhibit resistance to rapid heat release when exposed to an open flame ignition source. The mattresses and mattress sets are constructed with elements that either (1) have been treated for the reduction of flammability, (2) are inherently resistant to ignition and flame growth, or (3) are manufactured with a fire barrier.

Mattresses and mattress sets are subjected to the open burning calorimeter test with rate of heat release (HRR) from the burning sample determined by an oxygen consumption technique.

FACTORS NOT INVESTIGATED

Mattresses and mattress sets have not been investigated for the effect of larger or different placements of the ignition source or with respect to the contribution of the mattresses or mattress sets to a developing fire condition with multiple mattress items or other surrounding materials or products.

The effects of aging and wear on the fire-retardant characteristics of the product have not been investigated.

The density of smoke and toxicity of the products of combustion have not been investigated. It should be recognized that the products of combustion from fires may be toxic to varying degrees, inasmuch as they may include smoke (particulate), carbon dioxide, carbon monoxide, and other vapors and gases, depending upon the conditions of burning and the materials involved. Occupancy tenability depends upon the conditions of heating or burning and the degree of confinement (ventilation) of the products of combustion or decomposition.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S137, "Standard Method of Test for Fire Growth of Mattresses (Open Flame Test)."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

Mattresses Certified for Flammability Certified for Canada (PHIX7)−*Continued*

[PRODUCT NAME*]
AS TO FLAMMABILITY
Control No.
* **MATTRESS** or **MATTRESS SET**
****

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MEASURING, TESTING AND SIGNAL-GENERATION EQUIPMENT CERTIFIED FOR CANADA (PICQ7)

GENERAL

This category covers equipment intended primarily for metering and testing of electrical and electronic circuits, such as ammeters, voltmeters, power meters, frequency counters, chart recorders, oscilloscopes, and related accessories, kits and probes. This category also covers equipment designed to provide electrical or electronic signals for test purposes, such as signal generators or injectors, and frequency synthesizers.

FACTORS NOT INVESTIGATED

These products have been investigated with respect to risk of fire, shock and injury to persons. Where such equipment is included in systems that involve other pieces of equipment or mechanical operations, the investigation of the risk of fire, electric shock and personal injury has included only the equipment specifically certified in the individual certifications. The accuracy of measured, analyzed or prepared quantities has not been investigated.

RELATED PRODUCTS

This category does not cover medical and dental or process-control metering and testing equipment. Certifications of equipment that measure the functional performance (nonelectrical or nonelectronic) of other equipment, the physical or chemical properties of materials or qualitative or quantitative constituent analysis of materials and preparation of materials for further analysis or measurement are covered under Laboratory-use Electrical Equipment Certified for Canada (OGTK7).

Additional certifications are covered under Electrical and Electronic Measuring and Testing Equipment Certified for Canada (FHCW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 61010-1 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements.'' In addition, CSA-C22.2 No. 61010-2-032 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-032: Particular Requirements for Hand-Held and Hand-Manipulated Current Sensors for Electrical Test and Measurement,'' and/or CAN/CSA-C22.2 No. 61010-031 (2007), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 031: Safety Requirements for Hand-Held Probe Assemblies for Electrical Measurement and Test,'' may be used where applicable.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Measuring and Testing Equipment,'' ''Measuring Equipment,'' ''Testing Equipment,'' ''Signal Generation Equipment,'' or the name of the specific type of product as shown in the individual Listings, or combinations of the preceding identities.

****

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MEDICAL EQUIPMENT CERTIFIED FOR CANADA (PIDF7)

USE AND INSTALLATION

This category covers equipment intended to diagnose, treat, or monitor a patient under medical supervision, and which makes physical or electrical contact with the patient and/or transfers energy to or from the patient and/or detects such energy transfer to or from the patient.

This category also covers those accessories defined by the manufacturer as necessary for the normal use of the equipment.

Unless otherwise noted, this equipment is designed for professional use by qualified personnel in hospitals, nursing homes, medical care centers, medical and dental offices, and similar health care facilities, and in remote areas under the direction of qualified personnel, in accordance with the instructions specified by the manufacturer.

This equipment has been certified with respect to electric shock, fire, mechanical and other specified hazards incident to its use in unclassified locations. The other specified hazards are included in CAN/CSA-C22.2 No. 601.1, the Particular and/or Collateral Standards and applicable supplements and amendments to which the equipment has been investigated.

The nature of some of this equipment, such as X-ray, nuclear imaging, and magnetic resonance equipment, is such that it involves features of installation and use not ordinarily presented in utilization equipment. Such features are covered in the manufacturer's installation instructions. Installation must, if possible, be made in a room or compartment in which provision is made to prevent fire or injury to persons and, in all cases, be in accordance with the manufacturer's installation instructions furnished with the equipment and the requirements of the Authorities Having Jurisdiction.

Baby incubators and similar equipment for use with oxygen-enriched atmospheres have been investigated with respect to the increased hazard resulting from the presence of oxygen and electrical parts within the equipment.

REBUILT PRODUCTS

This category also covers medical equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt medical equipment is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt medical equipment is subject to the same requirements as new medical equipment.

FIELD-INSTALLED EQUIPMENT

Products covered under this category include equipment intended to be field installed, in accordance with the instructions provided, to certified equipment of the same manufacturer. The field-installed equipment is appropriately marked as noted below.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, which may be produced by this equipment have not been investigated.

RELATED PRODUCTS

Medical equipment that includes refrigerated components, such as refrigeration therapy equipment, is covered under Refrigerated Medical Equipment Certified for Canada (SOPT7).

Equipment investigated to determine its suitability for use in hazardous (classified) locations as defined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

For household health care equipment, see Personal Hygiene and Health Care Appliances Certified for Canada (QGRZ7).

For heating pads, see Heating Pads, Electric Certified for Canada (MNUV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 601.1, ''Medical Electrical Equipment – Part 1: General Requirements.''

Particular Standards — CAN/CSA-C22.2 No. 601.1 contains requirements for safety which are generally applicable to all medical equipment. For certain types of equipment, these requirements are supplemented or modified by the special requirements of a Particular Standard (IEC 60601-2-XX, CAN/CSA-C22.2 No. 601.2.XX). However, unless otherwise indicated in the deviations, the requirements of a Particular Standard do not modify the deviations. Where Particular Requirements exist, the General Standard is not used alone.

Collateral Standards — When the equipment falls within the scope of one or more Collateral Standards (IEC 60601-1-XX, CAN/CSA-C22.2 No. 601.1.XX) such standard(s) may, optionally, also be used. Unless otherwise indicated in the deviations, the requirements of a Collateral Standard do not modify the deviations.

Product Marking (with respect to applicable standards) — As part of the Certification Mark, reference to CAN/CSA-C22.2 No. 601.1 is included. For products that have been investigated in accordance with the applicable Particular (IEC 60601-2-XX, CAN/CSA-C22.2 No. 601.2.XX)

and/or related Collateral (IEC 60601-1-XX, CAN/CSA-C22.2 No. 601.1.XX) Standards, reference to these standards is made on the product or in the accompanying documents.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEDICAL EQUIPMENT+
WITH RESPECT TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH [standard*]
Control No.

+ or other appropriate product name as shown in the individual Classifications

For rebuilt or remanufactured products the word "Rebuilt," "Remanufactured," "Refurbished" or "Reconditioned" precedes the product name.

For field-installed products the words "Field Installed" precedes the product name.

Alternate Marking Options

1. The Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the product name as described above, the phrase "SEE ACCOMPANYING DOCUMENTS," or the symbol of a triangle containing the exclamation point (IEC 348, Symbol 14 – ⚠), the standard number* and a control number. As a minimum, the standard number* always includes CAN/CSA-C22.2 No. 601.1 for products investigated to Canadian requirements only, and UL 60601-1, UL 2601-1 or both, with or without CAN/CSA-C22.2 No. 601.1, for products investigated to both U.S. and Canadian requirements. In addition, the product's accompanying documents will contain the complete Classification Mark.
2. For products with limited space for markings, the Classification Mark includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol, the symbol of a triangle containing the exclamation point (IEC 348, Symbol 14 – ⚠), and a control number. In addition, the product's accompanying documents will contain the complete Classification Mark.
3. For products (such as implantable devices) where the Classification Mark is not feasible, the complete Classification Mark will appear on the carton or smallest unit container in which the product is packaged. The product's accompanying documents may also contain the complete Classification Mark.

* Based on the certification coverage of the product, the standard number may be CAN/CSA-C22.2 No. 601.1 for products investigated to Canadian requirements only, or UL 60601-1, UL 2601-1 or both, and CAN/CSA-C22.2 No. 601.1 for products investigated to both U.S. and Canadian requirements. Additionally, the standard number may include any applicable Particular (IEC 60601-2-XX, CAN/CSA-C22.2 No. 601.2.XX) and/or related Collateral (IEC 60601-1-XX, CAN/CSA-C22.2 No. 601.1.XX) Standards for which the product has been found to comply by UL.

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MEDICAL EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PINR7)

GENERAL

This category covers portable suction, pressure and anesthesia units, portable baby incubators, surgical devices and similar equipment designed for professional use by attendants in hospitals. This equipment has been investigated solely from the standpoint of electrical, fire, explosion, and accident hazards. Other hazards, such as physiological effects, have not been investigated.

Except for low-voltage battery-powered devices, connections to supply lines require the use of receptacles with plugs or receptacles with plugs interlocked with snap switches, or their equivalent, certified for the specified hazardous locations. The flexible cord connected to the units should be frequently inspected and replaced when necessary. Terminal connections should be properly made and maintained.

Authorities Having Jurisdiction should be consulted with regard to conditions under which these portable devices will be permitted for use. It is recognized that portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Medical Equipment for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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MEDIUM-VOLTAGE POWER CABLE CERTIFIED FOR CANADA (PITY7)

GENERAL

This category covers shielded and concentric neutral power cable rated 5000 to 46,000 V intended for transmission and distribution of electrical energy for use either indoors or outdoors in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

This cable is single or multiconductor, aluminum or copper, with solid extruded dielectric insulation and may have an extruded jacket, metallic covering or combination of both over the single conductors or over the assembled conductors in a multiconductor power cable.

Shielded cable is suitable for use in wet or dry locations at a maximum conductor temperature of 90°C.

PRODUCT MARKINGS

Cable marked "Sunlight Resistant" may be exposed to the direct rays of the sun.

Cable may be optionally marked "FT1," or cable intended for installation in cable trays in accordance with the CEC is marked "FT4."

Cable with aluminum conductors is marked with the word "Aluminum" (or "AL").

The cable is marked with the conductor size, type of insulation (VLPE or EP), voltage rating and insulation level (100% or 133%), conductor material, the legend "Semiconducting — Remove When Terminating or Splicing" (or equivalent) on the surface of the semiconducting layer of the insulation shield in English or in French, the flame rating (if applicable) on the outer covering or jacket, an optional "Sunlight Resistant" marking if applicable, a power cable symbol and the year of manufacture.

Cable employing compact conductors is marked "CPT."

Cable employing solid conductors is marked "SOL."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C68.3 (1997), "Shielded and Concentric Neutral Power Cables Rated 5–46 kV."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Shielded and Concentric Neutral Power Cable" or "Medium-voltage Power Cable."

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METAL-CLAD CABLE CERTIFIED FOR CANADA (PJAZ7)

GENERAL

This category covers Types AC90, ACWU90, RA90 and TECK 90 cable intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

AC90 and ACWU90 cable is rated for use up to 600 V, and certified in sizes 14 AWG through 2000 kcmil for copper, and 12 AWG through 2000 kcmil for aluminum, and employs thermoset- or thermoplastic-insulated conductors. AC90 and ACWU90 cable consists of one or more insulated conductors with an overall interlocked metal armor. One or more grounding conductors may be employed. ACWU90 cable employs an overall jacket of thermoset or thermoplastic material. Single-conductor cable in sizes 4 AWG and smaller, and single-conductor cable without a concentric bonding conductor in sizes larger than 4 AWG is green or green with yellow stripes.

TECK 90 cable is rated for use up to 5000 V, and certified in sizes 14 AWG through 2000 kcmil for copper, and 12 AWG through 2000 kcmil for aluminum, and employs thermoset- or thermoplastic-insulated conductors. TECK 90 cable rated 5000 V employs conductors no smaller than 8 AWG. TECK 90 cable consists of one or more insulated conductors, with or without one or more grounding conductors, an inner jacket of thermoplastic or thermosetting material, and an overall interlocked steel, copper or aluminum armor. The armor on single-conductor cable is aluminum or copper.

RA90 cable is rated for use up to 5000 V, and certified in sizes 14 AWG through 2000 kcmil for copper, and 12 AWG through 2000 kcmil for aluminum, and employs thermoset-insulated conductors. RA90 cable consists of one or more insulated conductors with an overall smooth, seamed, seamless or corrugated aluminum armor. One or more grounding conductors may be employed. RA90 cable may employ an overall jacket of thermoplastic material.

PRODUCT MARKINGS

Information regarding temperature rating, voltage rating, cable and conductor Type and AWG size is shown either on a marker tape under the armor or on the surface of a nonmetallic jacket, if used.

AC90, ACWU90 and RA90 cable that complies with Appendix C of CSA-C22.2 No. 0.3, "Test Methods for Electrical Wires and Cables," for "FT4 – ST1," may be marked with the suffix "ST1."

AC90, ACWU90 and RA90 cable that complies with the Acid Gas Evolution Test of CSA-C22.2 No. 0.3 may be marked with the suffix "AG14."

"FT1" indicates that the TECK 90 cable meets the requirements of the FT1 Flame Test.

"FT4" indicates that the AC90, ACWU90, RA90 or TECK 90 cable meets the requirements of the FT4 Flame Test.

"-25C" (or "MINUS 25 C") indicates that the cable complies with a cold bending test at -25°C.

"-40C" (or "MINUS 40 C") indicates that the cable complies with a cold bending test at -40°C.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 123, "Aluminum Sheathed Cables," CAN/CSA-C22.2 No. 131, "Type TECK 90 Cable," and CSA-C22.2 No. 51, "Armoured Cables."

UL MARK

The Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name as appropriate: Metal-clad cable that contains copper conductors has the product name "Metal-clad Cable"; metal-clad cable that contains aluminum conductors has the product name "Metal-clad Aluminum Cable."

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METER-MOUNTING EQUIPMENT CERTIFIED FOR CANADA (PJSR7)

This category covers meter-mounting equipment, which consists of an enclosure, wiring terminals and provision for fastening of the meter to the

equipment. Meter-mounting equipment does not include load-making or load-breaking devices. It may include provisions for current transformers but not the transformers.

Transformer-rated meter-mounting devices intended for field installation of current transformers, busbars, and connectors for supply conductors are marked to show:

- the ampere rating and type of current transformers that may be used;
- the method of assembly; and
- the secondary wiring method or the following marking: "This Device Is Supplied Without Secondary Wiring. The Meter Socket Must Be Wired In Accordance With The Local Utility's Requirements."

Meter-mounting equipment is marked with a current rating. Multiple-position meter socket assemblies are provided with current ratings for each individual meter socket and an overall rating for the assembly. The overall rating is the rating for which the assembly is approved, but not necessarily the sum of the current ratings of the individual meter sockets.

This equipment is intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is on a wiring diagram or other readily visible location and is independent of any marking on a terminal connector unless the terminal connector is an integral, nonremovable part of the meter socket jaw.

Wire connectors in Listed meter-mounting equipment are intended to accommodate one conductor only unless use with more than one conductor is clearly indicated on the wiring diagram or other readily visible location.

Unless the equipment is marked to indicate otherwise, the termination provisions are based on the use of 75°C ampacities for wire as specified in Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Termination provisions are determined based on values provided in Tables 2 and 4, with no adjustment made for correction factors.

Meter-mounting equipment is marked with the enclosure type described in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

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METER-SOCKET BASES CERTIFIED FOR CANADA (PJWT7)

GENERAL

This category covers meter-socket bases, which are bases intended to accommodate plug-in-type watt-hour and similar meters rated for use with current transformers. They are designed to be installed, with the meter, inside enclosures to allow for connection in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Meter-socket bases are rated 600 V ac maximum. Meter-socket bases rated over 30 A are marked with their short-circuit-current rating in rms symmetrical amps. For short-circuit-current ratings exceeding 10 kA, the marking includes the type and rating of overcurrent protection to be used with the meter socket.

Meter-socket bases are marked with a continuous amp rating. They may, in addition, have a maximum use (intermittent) rating of not more than 125% of the continuous amp rating.

RELATED PRODUCTS

Meter sockets with meters protruding through the enclosure are covered under Meter Sockets Certified for Canada (PJYZ7)

ADDITIONAL INFORMATION

For additional information, see Meter-mounting Equipment Certified for Canada (PJSR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 115 (1989), "Meter Mounting Devices."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Unenclosed Meter Socket."

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for

Meter-socket Bases Certified for Canada (PJWT7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

METER SOCKETS CERTIFIED FOR CANADA (PJYZ7)

GENERAL

This category covers meter sockets, which are complete enclosures accommodating plug-in-type watt-hour and similar meters. They provide terminating means for conductors of wiring systems recognized by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

The tightening torque required for terminal screws is specified by a marking.

Terminal-wire connectors may be omitted and, if omitted, a marking specifies which connectors are intended to be used. Instructions for the field installation of connectors are provided with the connectors.

Ratings of certified single-position meter sockets are limited to 600 V ac maximum and to 200 A maximum. Ratings of certified multiple-position meter socket assemblies are limited to 600 V ac maximum with an overall current rating of 600 A maximum (200 A maximum per meter socket).

ADDITIONAL INFORMATION

For additional information, see Meter-mounting Equipment Certified for Canada (PJSR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 115 (1989), ''Meter-Mounting Devices.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Meter Socket.''

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METER-SOCKET ACCESSORIES CERTIFIED FOR CANADA (PKAX7)

GENERAL

This category covers accessories intended for use with meter sockets, such as jumper covers, meter-socket extenders or other equipment.

Ratings of certified meter-socket accessories are limited to 600 V ac and 200 A maximum.

RELATED PRODUCTS

See Meter Sockets Certified for Canada (PJYZ7).

ADDITIONAL INFORMATION

For additional information, see Meter-mounting Equipment Certified for Canada (PJSR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 115 (1989), ''Meter-Mounting Devices.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Meter Socket Accessory,'' ''Temporary Jumper Cover Accessory'' or ''Meter Socket Extender,'' or other appropriate product name as shown in the individual Listings.

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METERS CERTIFIED FOR CANADA (PKQT7)

FLAMMABLE-LIQUID METERS CERTIFIED FOR CANADA (PLRZ7)

USE

This category covers positive-displacement (quantity) meters intended to be used in dispensing devices at operating pressures of 345 kPa (50 psig) or less.

These meters are intended for use with the following fuels:

a) Gasoline
b) Gasoline/ethanol blends designated as ''gasohol'' (E10 maximum)
c) Diesel fuel
d) Fuel oil
e) Kerosene

These products are intended to be installed and used in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

FACTORS NOT INVESTIGATED

The suitability of registers, counters, or computers used or provided with these meters, or the accuracy of measurement resulting from or required in actual application, has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C25, ''Meters for Flammable and Combustible Liquids and Propane.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Meter for Flammable Liquid.''

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FLAMMABLE-LIQUID METERS, REBUILT CERTIFIED FOR CANADA (PLSF7)

USE

This category covers rebuilt positive-displacement (quantity) meters intended to be used in dispensing devices at operating pressures of 344.83 kPa or less.

These meters are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt meters are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt meters are subject to the same requirements as new meters.

These meters are intended for use with the following fuels:

a) Gasoline
b) Gasoline/ethanol blends designated as ''gasohol'' (E10 maximum)
c) Diesel fuel
d) Fuel oil
e) Kerosene

These meters are intended to be installed and used in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

FACTORS NOT INVESTIGATED

The suitability of registers, counters or computers used or provided with these meters, or the accuracy of measurement resulting from or required in actual application, has not been investigated.

RELATED PRODUCTS

Meters intended for use with flammable and combustible liquids are covered under Flammable-liquid Meters Certified for Canada (PLRZ7).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C25, ''Meters for Flammable and Combustible Liquids and Propane.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark

Flammable-liquid Meters, Rebuilt Certified for Canada (PLSF7)−*Continued*

for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Rebuilt Meter for Flammable Liquid."

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LP-GAS METERS CERTIFIED FOR CANADA (PMFX7)

USE

This category covers LP-gas meters intended for the handling of LP-gas in the liquid state and designed for working pressures of 1724 kPa or more, as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C25, "Meters for Flammable and Combustible Liquids and Propane."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name "Meter for LP-Gas," and the statement "____ kPa max."

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MICROWAVE AND CABLE COMMUNICATION EQUIPMENT CERTIFIED FOR CANADA (POFV7)

This category covers microwave communication equipment, cable communication equipment, communication antennas and antenna positioning equipment intended for household or commercial use.

This equipment has been investigated with respect to risk of fire, electric shock and personal injury. Where such equipment is included in systems that involve other pieces of equipment or mechanical operations, the investigation of the risk of fire, electric shock and personal injury have included only the equipment specifically Listed in the individual Listings.

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COMMUNICATION ANTENNAS CERTIFIED FOR CANADA (POQQ7)

USE

This category covers satellite and microwave receiving and transmitting antennas and accessories intended for household or commercial use, such as satellite antenna dishes, microwave antenna horns or waveguides, receiving and transmitting antennas, antenna mounting/support hardware (e.g., tripods, masts, polar mounts) and similar products.

RELATED PRODUCTS

These products may also be covered under Audio/Video Apparatus Certified for Canada (AZSQ7) and Audio and Video Equipment Certified for Canada (AZUJ7).

ADDITIONAL INFORMATION

For additional information, see Microwave, and Cable Communication Equipment Certified for Canada (POFV7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Communication Antennas Certified for Canada (POQQ7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 1, "Audio, Video, and Similar Electronic Equipment".

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Microwave and Cable Communication Equipment," "Satellite Antenna Equipment," "Microwave Antenna Equipment," "Antenna Equipment" or "...Product," or other appropriate product name as shown in the individual Listings.

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MINERAL-INSULATED CABLE ASSEMBLIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (POWD7)

GENERAL

This category covers lengths of mineral-insulated metal-sheathed cable with one or both ends factory terminated with a certified mineral-insulated cable fitting. The fittings provide threaded connection of the cable to hazardous locations equipment.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 174, "Cables and Cable Glands for Use in Hazardous Locations."

UL MARK

The Listing Mark of UL on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Mineral Insulated Cable Assembly for Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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MINERAL-INSULATED METAL-SHEATHED CABLE CERTIFIED FOR CANADA (PPKV7)

GENERAL

This category covers mineral-insulated metal-sheathed cable consisting of one or more solid copper conductors insulated with highly compressed magnesium oxide or silicon dioxide and enclosed in a continuous copper or alloy steel sheath. It is intended for use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Type MI cable is labeled in sizes 18 AWG to 1000 kcmil single conductor, 18 to 4 AWG, two and three conductor, 18 to 6 AWG four conductor, and 18 to 10 AWG seven conductor constructions. The cable is rated 600 V, and employs a copper sheath.

Type LWMI cable is labeled in sizes 18 to 10 AWG for on to seven conductor constructions and is rated 600 V. Type LWMI cable is also labeled in sizes 18 to 10 AWG for 2 and 3 conductor constructions rated 300 V. The cable employs a copper sheath.

Type SSMI cable is similar to MI except that it employs a stainless steel alloy sheath.

Type SSLWMI cable is similar to LWMI except that is employs a stainless steel alloy sheath.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 124, "Mineral-Insulated Cable."

UL MARK

The Listing Mark of UL on the attached tag, coil, reel, or smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Mineral Insulated Metal-Sheathed Cable."

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MOTOR-GENERATOR SETS CERTIFIED FOR CANADA (PQYW7)

USE

This category covers close-coupled combinations of electric motors and generators for indoor use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I.". This equipment is designed as frequency converters or to provide a voltage regulating function provided by the mechanical inertia, and may be intended for portable, permanent or mobile installations.

This category does not cover electric machines for use in aircraft, marine service installations, drives for land transportation equipment, machines used in underground mining, hazardous environments or environments having abnormal temperatures.

RELATED PRODUCTS

This category does not cover electrical generating equipment driven by gasoline, LP-gas, or diesel fueled internal combustion engines. These products are covered under Engine Generators Certified for Canada (FTSR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 100 (2004), "Motors and Generators," and CSA-C22.2 No. 14 (1995), "Industrial Control Equipment," as it applies to the product.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Motor-Generator Set" or "Flywheel Energy Storage System," or other appropriate product name as shown in the individual Listings.

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MOTORS CERTIFIED FOR CANADA (PRGY7)

USE

This category covers three-phase motors:

1. intended to be field installed in accordance with Section 28 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC),
2. 5 hp and larger,
3. greater than 177.8 mm (7 in.) in diameter,
4. where the motor overload protection required by Section 28 of the CEC takes the form of a separate overload device or control.

PRODUCT MARKINGS AND INSTALLATION

An enclosed-type motor has the Enclosure Type designation marked on the motor for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7). The motor may also be marked "Raintight" or "Rainproof."

An enclosed-type motor is not intended to be installed in an enclosure unless a marking on the motor, the installation instructions or a stuffer sheet provided with the motor states that the motor may be enclosed. Specifications for the enclosure are included with the instructions or marking.

An open-type motor is intended to be installed in an enclosure suitable for the end use. The minimum size of the enclosure is marked on the motor, provided in the installation instructions or as a stuffer sheet provided with the motor.

All motors are intended for use in a 40°C (104°F) ambient unless marked for a different ambient.

All motors are provided with installation information that indicates the proper methods to secure the motor and electrically connect the motor to the power source. The instructions also provide information concerning the type of load the motor can operate and, if needed, the type of protection.

FIELD PROVISIONS

Motors are provided with a means to electrical connect the motor with the electrical system in the field.

Suitability of guards for the shaft or other moving parts must be determined in the end-use application.

RELATED PRODUCTS

Motors intended for use in hazardous (classified) locations are covered under Motors for Use in Hazardous Locations Certified for Canada (PTDR7), Motors, Specialty for Use in Hazardous Locations Certified for Canada (PUCJ7) and Motors, Division 2 for Use in Hazardous Locations Certified for Canada (PTHE7).

Motors incomplete in construction are covered under Motors Certified for Canada (PRGY8).

Products Verified for energy efficiency are covered under Electric Motors Verified for Energy Efficiency (ZYKH).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 100, "Motors and Generators."

Where indicated in the individual certifications, the spacings provided within these motors have additionally been investigated to CSA-C22.2 No. 0.2, "Insulation Coordination."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Electric Motor."

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MOTORS, INVERTER DUTY CERTIFIED FOR CANADA (PRHJ7)

USE

This category cover squirrel cage, polyphase induction motors intended for use with variable voltage and variable frequency controls (commonly referred to as inverters) that are:

1. three-phase,
2. intended to be field installed in accordance with Section 28 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC),
3. 5 hp and larger,
4. greater than 177.8 mm (7 in.) in diameter, and
5. where the motor overload protection required by Section 28 of the CEC takes the form of a separate overload device or control.

The requirements for this category are intended to investigate the suitability of the motor for normal use when fed from an inverter supply through a manufacturer-declared range of operating conditions.

This category does not cover:

1. the efficacy of motor-overtemperature protection under abnormal conditions,
2. the operation of a motor in hazardous (classified) locations.

Though the motors covered under this category may be provided with Recognized overtemperature protection, the suitability of the overtemperature protection has not been investigated and must be determined in the end-use application.

INSTALLATION

All motors are provided with installation information that indicates the proper methods to secure the motor and electrically connect the motor to the power source. The instructions also provide information concerning the type of load the motor can operate and, if needed, the type of protection.

An enclosed-type motor is not intended to be installed in an enclosure unless a marking on the motor, the installation instructions, or a stuffer sheet provided with the motor states that the motor may be enclosed. Specifications for the enclosure are included with the instructions or marking.

When conduit hubs are not provided for a Type 2, 3, 3R, 3S or 5 enclosure, the enclosure, the instruction sheet provided with the enclosure, or the packaging carton is marked to indicate that raintight or wet-location hubs complying with the requirements in CAN/CSA-C22.2 No. 18.3, "Conduit, Tubing, and Cable Fittings," are intended to be used.

A separable conduit hub and a closure fitting is marked with the manufacturer's name or trademark and the catalog number or equivalent. Such a hub or fitting may be shipped separately, and any gasket, hardware, and instructions necessary for installation is shipped with the fitting or packaged with the enclosure.

An enclosure marked Type 4, 4X, 6 or 6P is provided with instructions for use of the watertight connection if the connection is not mounted on the enclosure.

Installation instructions are provided with an enclosure intended for field assembly of the bonding means that identify the parts for bonding and specify the method of installation.

Instructions are provided with the enclosure indicating that when installed in a Type 2 or 3R environment, the drain hole plug is intended to be removed.

PRODUCT MARKINGS

An enclosed-type motor has the Enclosure Type designation marked on the motor for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

All motors are intended for use in a 40°C (104°F) ambient unless marked for a different ambient.

These motors are marked with:

1. the manufacturer's name or identification,
2. the motor catalog or model number,
3. the rated voltage,
4. the full-load amperes, watts or kilowatts, or both,
5. the rated speed,
6. the rated horsepower or output wattage,
7. the rated temperature rise or the insulation system class,
8. the rated ambient temperature,
9. the rated frequency, expressed in one of the following terms: hertz (or Hz); ac-dc (frequency in Hz)/dc (e.g., 60/dc); ac only; direct current, and
10. the number of phases.
11. A continuous-duty motor is marked "Continuous" (or "CONT").
12. A direct-current motor is marked to indicate the winding type: straight shunt, stabilized shunt, compound or series.
13. A multi-speed motor is marked with the amperes and horsepower at each speed.

These motors are marked to indicate the temperature rating (e.g., 60°C only, 60/75, or 75°C only) of the field-installed conductors for which the equipment has been investigated.

Motors equipped with electrically-powered, condensation-prevention heaters are marked with the rated heater voltage, number of phases, and the rated power in watts.

Air-over motors are marked "Air Over" (or "AO") or "Air-Over Motor" (or "AOM").

An alternating-current motor is marked with a code letter to indicate the locked-rotor amperes in accordance with the CEC.

A wound-rotor induction motor is marked with the secondary volts and full-load amperes.

A motor rated for short-time or intermittent duty is marked on the nameplate with the words "intermittent duty" (or "int. duty") and with the time rating in minutes or hours, or a combination of minutes and hours. The rating may be for "On" time only or include specifications for both "On" and "Off" periods.

If the acceptability of a Type 2 or 3R enclosure is dependent upon a particular mounting orientation, the enclosure is marked to indicate the required orientation.

A cast-metal enclosure marked Type 3, 3R or 3S is marked to indicate that, after determining the mounting position of the enclosure, any holes drilled in the field are intended to be located in the lowest part of the bottom wall.

Exception: If a manufacturer intends that a cast-metal enclosure be acceptable for field drilling and tapping of holes for conduit connections, the enclosure is marked to indicate the location and trade sizes of conduit for which the enclosure has been found to be acceptable. If counter-boring is necessary to accommodate certain sizes of conduit, such information is also given.

Note: The instructions for drilling and tapping may be provided on an instruction sheet provided with the enclosure or marked on the packaging carton.

Any environmental-type enclosure intended for use with conduit hubs and/or other field-installed equipment, but shipped from the factory without them, is marked or provided with instructions that identify the type of equipment intended to be used to maintain the environmental integrity of the enclosure. This may be accomplished by identifying the necessary environmental type designation or by identifying the specific manufacturer and model number of the field-installed equipment.

RELATED PRODUCTS

Motors intended for use in hazardous (classified) locations are covered under Motors for Use in Hazardous Locations Certified for Canada (PTDR7), Motors, Specialty for Use in Hazardous Locations Certified for Canada (PUCJ7), and Motors, Division 2 for Use in Hazardous Locations Certified for Canada (PTHE7).

Motors incomplete in construction and intended for factory installation are covered under Motors Certified for Canada (PRGY8).

Motors Verified for energy efficiency are covered under Electric Motors Verified for Energy Efficiency (ZYKH).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 100, "Motors and Generators."

Where indicated in the individual certifications, the spacings provided within these motors have additionally been investigated to CSA-C22.2 No. 0.2, "Insulation Coordination."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Inverter-duty Motor."

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MOTORS AND GENERATORS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PRSN7)

MOTORS, SPECIALTY FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PRZM7)

USE AND INSTALLATION

This category covers specialty motors.

These motors are intended for installation and operation in accordance with the instructions provided for each motor by the manufacturer. These motors may require any or all of the following for proper operation: (1) special controllers, (2) special control circuitry, (3) atypical input voltage waveform, (4) atypical input current waveform. Refer to the operating instructions. These motors are not intended for across-the-line operation.

The Certification Mark on a specialty motor applies to the motor, but not any equipment driving or driven by the motor.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 100 (2004), "Motors and Generators."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

Motors, Specialty for Use in Zone Classified Hazardous Locations Certified for Canada (PRZM7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Specialty Motor for Use in Hazardous Locations.''

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MOTORS AND GENERATORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PSBV7)

GENERATORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PSPT7)

GENERAL

This category covers generators for use in Class I, Groups C and D; Class II, Groups E, F and G hazardous locations.

The Certification Mark on a generator applies to the generator, but not to any equipment driving or driven by the generator. In the case of a motor generator set provided with a common base, the motor and generator each bear its respective Certification Mark.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 145 (1986), ''Motors and Generators for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Generator for Hazardous Locations.''

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MOTORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PTDR7)

GENERAL

This category covers motors for use in Class I, Groups C and D; Class II, Groups E, F and G hazardous locations.

The Certification Mark on a motor applies to the motor, but not to any equipment driving or driven by the motor. In the case of a motor-generator set provided with a common base, the motor and generator each bear its respective Certification Mark.

RELATED PRODUCTS

Products Verified for energy efficiency are covered under Electric Motors for Use in Hazardous Locations Verified for Energy Efficiency (ZYKN).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 145 (1986), ''Motors and Generators for Use in Hazardous Locations.''

Motors for Use in Hazardous Locations Certified for Canada (PTDR7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Motor for Hazardous Locations.''

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MOTORS, DIVISION 2 FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PTHE7)

GENERAL

This category covers electric motors intended for use in Class I, Division 2, Groups A, B, C and D, and Class II, Division 2, Groups F and G hazardous (classified) locations.

For Class I, Division 2 locations, the enclosure may be of the open or totally enclosed type. The Group designation is marked unless the motor is acceptable for Groups A, B, C and D. The motor is also marked with the operating-temperature code designating the maximum internal or external surface temperature determined at rated full-load steady-state conditions, if the temperature is greater than 100°C. If the enclosure incorporates one or more arcing or sparking parts, the part is housed in a Class I, Division 1 enclosure or the part is within a hermetically sealed enclosure, constructed with current-interrupting contacts immersed in oil, located in a nonincendive circuit or located in a purged and pressurized enclosure. If the motor is provided with an internal space heater, the space heater is intended to be wired in the control circuit such that the space heater is energized when the motor is de-energized, and vice versa. The maximum surface temperature of the space heater is considered in determining the marked operating temperature of the motor.

For Class II, Division 2 locations, the enclosure is of the totally enclosed type. The motor is marked with the operating temperature or operating-temperature code designating the maximum full-load external temperature determined at rated full-load steady-state conditions when operating in free air (not dust blanketed), if the external temperature is greater the 100°C.

RELATED PRODUCTS

For Division 1 motors, see Motors for Use in Hazardous Locations Certified for Canada (PTDR7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CSA Electrical Certification Notice No. 672, ''Motors Used in Division 2 Locations'' (January 23, 1990).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Motor for Division 2 Hazardous Locations.''

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MOTORS AND GENERATORS, REBUILT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PTKQ7)

USE

This category covers rebuilt motors and generators for use in Class I, Groups C and D, and Class II, Groups E, F and G hazardous locations.

Unless otherwise marked, rebuilt motors and generators for use in Class I and Class II hazardous locations are intended for use in ambient temperatures within the range of -25°C (-13°F) to +40°C (+104°F).

Motors and Generators, Rebuilt for Use in Hazardous Locations Certified for Canada (PTKQ7)–*Continued*

The Certification Mark on a rebuilt motor or generator applies to the motor or generator, but not to any equipment driven by or driving the motor or generator. In the case of a rebuilt motor-generator set provided with a common base, the motor and generator will each bear its respective Certification Mark.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 145 (1986), ''Motors and Generators for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Rebuilt Electric Motor for Use in Hazardous Locations'' or ''Rebuilt Electric Generator for Use in Hazardous Locations.''

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MOTORS, SPECIALTY FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (PUCJ7)

GENERAL

This category covers specialty motors intended for use in Class I, Groups C and D, and Class II, Groups E, F and G hazardous (classified) locations.

These motors are intended for installation and operation in accordance with instructions provided for each motor by the manufacturer. These motors may require any or all of the following for proper operation: (1) special controllers, (2) special control circuitry, (3) atypical input voltage waveform, (4) atypical input current waveform. Refer to the operating instructions. These motors are not intended for across-the-line operation.

The Certification Mark on a specialty motor applies to the motor, but not any equipment driving or driven by the motor.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 145 (1986), ''Motors and Generators for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Specialty Motor for Hazardous Locations.''

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MULTIOUTLET ASSEMBLIES CERTIFIED FOR CANADA (PVGT7)

USE AND INSTALLATION

This category covers metal raceways and power-pole assemblies with factory-installed conductors and attachment-plug receptacles without provision for field installation of additional conductors, except where the product is marked to indicate the number, type and size of additional conductors that may be field installed.

This category also covers nonmetallic raceways with factory-installed conductors and attachment-plug receptacles either factory installed or separately certified as Multioutlet Assembly Fittings Certified for Canada (PVUR7) for field installation.

Separation of communication, signal and data circuits from branch-circuit wiring is provided in the assembly where the conductors are installed at the factory. Separate channels are provided in assemblies intended to be field wired with circuits requiring separation.

Power-pole multioutlet assemblies may be provided with hard-usage flexible cord not exceeding 3 m in length and terminated with an attachment plug when operating at 300 V or less. Authorities Having Jurisdiction should be consulted before installation.

Multioutlet assemblies are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 62 (1993), ''Surface Raceway Systems,'' and CAN/CSA-C22.2 No. 62.1, ''Nonmetallic Surface Raceways and Fittings.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Multi-Outlet Assembly.''

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MULTIOUTLET ASSEMBLY FITTINGS CERTIFIED FOR CANADA (PVUR7)

USE AND INSTALLATION

This category covers multioutlet assembly fittings intended for use with multioutlet metal raceways and power-pole assemblies. Fittings may consist of flexible metal conduit or armored cable to be connected to multioutlet assemblies by means of nonstandard wired plug-in devices or prefabricated component parts, such as preformed corners and the like.

Multioutlet assembly fittings are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Multioutlet Assemblies Certified for Canada (PVGT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 62 (1993), ''Surface Raceway Systems,'' and CAN/CSA-C22.2 No. 62.1, ''Nonmetallic Surface Raceways and Fittings.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Multi-Outlet Assembly Fitting,'' ''Elbow'' or ''End Fitting,'' or other appropriate product name as shown in the individual Listings.

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MUSICAL INSTRUMENTS CERTIFIED FOR CANADA (PWHZ7)

USE

This category covers electrical devices that produce music under the direct control of the player. This category also covers accessories for use with musical instruments, such as rhythm generators, tone cabinets, music tuners, and the like.

RELATED PRODUCTS

For devices that reproduce music from records, magnetic tape or other recording media, see Audio and Radio Equipment, Commercial Certified for Canada (AZCY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, "Audio, Video, and Similar Electronic Equipment" or CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, "Audio, Video and Similar Electronic Apparatus – Safety Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Musical Instrument" or other appropriate product name as shown in the individual Listings.

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NEON TRANSFORMERS AND POWER SUPPLIES CERTIFIED FOR CANADA (PWIK7)

USE

This category covers indoor and outdoor use neon transformers and power supplies intended for use with display signs, outline lighting and luminaires employing gas-filled glass tubing identified as neon or electric discharge tubing.

These transformers and power supplies have been investigated for secondary-circuit ground-fault protection.

Neon transformers and power supplies are intended for use in or with electric signs and outline lighting within the scope of CAN/CSA-C22.2 No. 207-M89, "Portable and Stationary Electric Signs and Displays," and for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

This category also covers neon transformer and power-supply accessories intended for use with specific neon transformers and power supplies.

PRODUCT MARKINGS

Transformers and power supplies covered under this category are marked "Indoors," "Outdoors," "Weatherproof" or "WP." Products marked "Indoors" are only suitable for use indoors, and products marked "Outdoors" are suitable for use indoors or outdoors sheltered from rain, snow and the like by being located within a sign body, enclosure and the like. Products marked "Weatherproof" or "WP" do not need to be additionally sheltered from rain, snow and the like.

Transformers and power supplies covered under this category are marked with a Type number from 2 to 8 in association with the location designation "Indoors," "Outdoors," "Weatherproof" or "WP." These Type numbers identify particular construction features associated with a particular transformer or power supply as identified below:

- **Type 2** – Neon supply with input and output terminals or leads that should be enclosed in accordance with the CEC.
- **Type 3** – Neon supply with input terminals or leads enclosed and intended for connection to a permanent wiring system, and with output terminals or leads that should be enclosed in accordance with the CEC.
- **Type 4** – Neon supply with input and output terminals or leads enclosed and intended for connection to a permanent wiring system.
- **Type 5** – Neon supply with input terminals or leads enclosed and intended for connection to a permanent wiring system and provided with integral receptacles for output connection.
- **Type 6** – Cord-connected neon supply provided with integral receptacles for output connection.
- **Type 7** – Cord-connected neon supply with output terminals or leads that should be enclosed in accordance with the CEC.
- **Type 8** – Cord-connected neon supply with enclosed output terminals or leads.

These Type designations do not relate in any way to general enclosure designations as noted in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Transformers and power supplies are also marked with a model designation and may be marked with an optional designation 2161HX, 2161KX, 2161MH or 2161WX. The optional designations provide information on the construction of the transformer and power supply for sign manufacturers and installers to use for ordering and replacement purposes.

Transformers and power supplies marked "For Moving Vehicle Use Only" are intended for use only in moving vehicles and not for use in a freestanding sign, or building mounted sign or outline lighting product.

Neon transformer and power-supply accessories are marked "For Use With XXX Neon Transformer" or "For Use With XXX Neon Power Supply," where "XXX" indicates the model number, catalog number, part number, or other specific identifier of the neon transformer or neon power supply.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 255 (2004), "Neon Transformers and Power Supplies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Neon Transformer," "Neon Power Supply," "Neon Transformer Accessory" or "Neon Power Supply Accessory."

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NONMETALLIC-SHEATHED CABLE CERTIFIED FOR CANADA (PWVX7)

GENERAL

This category covers Types NMWU and NMD90 nonmetallic-sheathed cable, rated 300 V, intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and certified in copper sizes 14 to 2 AWG inclusive and aluminum sizes 12 to 2 AWG inclusive.

PRODUCT MARKINGS

Cable with aluminum alloy 1350 conductors is surface marked "ALUMINUM," "ALUM" or "AL."

Cable with ACM conductors is surface marked "ALUMINUM-ACM," "ALUM-ACM" or "AL-ACM."

Wire and cable employing compact-stranded copper conductors is so identified on the tag, coil or reel by "COMPACT STRAND."

When Type NMD90 cable is provided with nylon sheaths over the insulated conductors, "NMD90 NYLON" is marked on the surface of the jacket. Type NMD90 cable employing cross-linked polyethylene insulation is surface marked on the jacket "NMD90 XLPE."

The words "RED-BLACK" are marked on the surface of the jacket of two-conductor cable employing red and black insulation. Two-conductor cable may be marked "-25C," "MINUS 25C," "-40C" or "MINUS 40C" if it complies with the applicable requirement.

This cable is marked with the flame rating "FT1."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 48 (1990), "Nonmetallic Sheathed Cable."

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, coil, reel or smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic-sheathed Cable."

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NONMETALLIC-SHEATHED-CABLE CONNECTORS CERTIFIED FOR CANADA (PXJV7)

USE

This category covers nonmetallic-sheathed cable connectors intended for use with nonmetallic-sheathed cable for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

All male threaded fittings have only been investigated for use with locknuts.

The individual certifications may have details about the size and number of the nonmetallic-sheathed cable each connector will secure.

Reusability — Connectors have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

MARKINGS

Connectors which are also suitable for use with service-entrance cable, flexible nonmetallic tubing or flexible cord are so indicated on the device or carton.

Except for duplex connectors or when otherwise marked on the carton to indicate connecting of more than one cable or cord, the connectors in this category have been investigated for connecting one cable only.

RELATED PRODUCTS

Connectors covered under Armored Cable Connectors Certified for Canada (AWSX7) and Conduit Fittings Certified for Canada (DWTT7) are also suitable for use with nonmetallic-sheathed cable when specifically indicated on the device or carton.

Connectors suitable for flexible cord only are covered under Outlet Bushings and Fittings Certified for Canada (QCRV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 18.3, "Conduit, Tubing, and Cable Fittings."

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic-sheathed Cable Connector" (or "N.M. Cable Connector"), or other appropriate product name as shown in the individual Listings.

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NONMETALLIC-SHEATHED CABLE INTERCONNECTORS CERTIFIED FOR CANADA (QAAV7)

GENERAL

This category covers self-contained interconnectors employing pressure cable connectors, insulation displacement or insulation piercing connectors for splicing or tapping nonmetallic (NM) sheathed cable. These interconnectors are intended for installation and use in accordance with Section 12 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These devices have been investigated for equivalency to Type NM cable in insulation and temperature rise, and for capability to withstand fault currents, vibration and mechanical shock that may occur during transport of the units in which they are used.

PRODUCT MARKINGS

The devices are marked with the Listee's name or identification, catalog number or equivalent, and complete electrical ratings.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 18.3, "Conduit, Tubing, and Cable Fittings," and CSA-C22.2 No. 182.3, "Special Use Attachment Plugs, Receptacles, and Connectors."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to

identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Nonmetallic Sheathed Cable Interconnector" (or "N.M. Cable Interconnector"), or other appropriate product name as shown in the individual Listings.

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COMMERCIAL SEATING SYSTEMS CERTIFIED FOR CANADA (QAHU7)

GENERAL

This category covers single- or multiple-seating systems that may be provided with an integral table and contain electrical accessories, such as an electrical distribution system, and may also be provided with channels for routing communication wiring. The seating is intended to be permanently mounted to the building structure.

This category covers only the electrical hazards associated with the product.

RELATED PRODUCTS

Electrical accessories designed for field installation, such as receptacles, electrical distribution systems, power distribution elements, etc., are covered under Office Furnishings Certified for Canada (QAWZ7) and are marked to identify the specific seating system with which they have been investigated for use.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 203 (1991), "Modular Wiring Systems for Office Furniture."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

POWERED SEATING SYSTEM*
FOR ELECTRICAL HAZARD ONLY
Control No.

* or other appropriate product name as shown in the individual Classifications

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OFFICE APPLIANCES AND BUSINESS EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QAVS7)

GENERAL

This category covers equipment and appliances normally used in business establishments classified as hazardous locations. The equipment and appliances may be electromechanical and/or electronic.

Intrinsically safe equipment is so marked on the product.

To maintain the intrinsically safe features of battery-operated appliances, only batteries of the type and size indicated on the product should be used.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

OFFICE APPLIANCES AND BUSINESS EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QAVS7)

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Office Appliance for Use in Hazardous Locations'' or ''Business Equipment for Use in Hazardous Locations.''

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OFFICE FURNISHINGS CERTIFIED FOR CANADA (QAWZ7)

USE AND INSTALLATION

This category covers office furnishings that consist of electrical distribution systems, components and accessories to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC). They may form part of a panel or office furnishing assembly and include the necessary wiring, raceways, outlets, switches, and interconnections between office furnishings.

Products specifically designed and arranged for field installation in office furnishings such as lighting units and clocks are covered as accessories under Office Furnishing Accessories Certified for Use with Specified Equipment Certified for Canada (QAXE7) and are marked to identify the specific office furnishing with which they have been investigated.

Office furnishing electrical systems may be suitable for connection to optional standby power systems in accordance with the CEC.

Office furnishing electrical systems are available in single-phase and three-phase wiring systems and may provide multi-circuit branch circuits to an office furnishing. Some office furnishings are connected to more than one source of supply, such as an uninterruptible power supply, in addition to the building service-entrance power.

When the office furnishing electrical system is supplied with hospital-grade receptacles, the office furnishing electrical system is not suitable for use in general patient care areas or critical patient care areas. The electrical system has not been investigated for use in patient care areas as stated in Section 24 of the CEC.

INSTRUCTIONS AND PRODUCT MARKINGS

Each office furnishing electrical component that is shipped separately from the major office furnishing unit to which it is to be connected is marked ''For Use with Office Furnishing System Series ____,'' in which the appropriate series or catalog number is designated.

Each top- and base-feed wiring assembly is marked with a diagram or the equivalent, indicating the methods of connection to the branch circuit and the electrical rating.

Each top- and base-feed wiring assembly is marked with ''WARNING'' and the following or equivalent statement: ''Connect to branch circuit at one point only.''

Each convenience receptacle is marked by a letter, number, color, or similar designation to indicate the circuit in the system to which the receptacle is connected. The identification is consistent throughout any one office furnishing electrical system and with any markings on the diagram for the branch-circuit connections.

The instructions indicate that not more than 12 outlets should be connected to one circuit.

RELATED PRODUCTS

Certified partitions that extend to the ceiling or used to support the building structure are covered under Sections and Units Certified for Canada (QQXX7).

Composite panels certified with respect to the CEC and/or one or more model building codes, plumbing codes or provincial building codes are covered under Composite Panels Certified for Canada (QRSY7).

Lighting units intended for use with office furnishings are covered under Office Furnishing Lights Certified for Canada (QAXB7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 203 (1991), ''Modular Wiring Systems for Office Furniture.''

Some office furnishing systems covered under this category have also been investigated to CAN/ULC-S102, ''Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies,'' and CAN/ULC-S102.2, ''Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Office Furnishing'' or ''Office Furnishing Accessory.''

Combination Listing/Classification Mark — A Listing Mark combined with a Classification Mark is provided on products that have additionally been investigated to CAN/ULC-S102 and CAN/ULC-S102.2. The combined Listing/Classification Mark consists of the Listing Mark elements detailed above and the following:

ALSO CLASSIFIED IN ACCORDANCE WITH CAN/ULC-S102 and CAN/ULC-S102.2 SURFACE-BURNING CHARACTERISTICS

+

+ Flame-spread and smoke-developed values applicable to the product

* *

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OFFICE FURNISHING LIGHTS CERTIFIED FOR CANADA (QAXB7)

GENERAL

This category covers lights intended for use with office furnishings when installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' This category covers both freestanding and mounted lights that may be electrically or mechanically connected to an office furnishing. Products specifically designed and arranged for use with an individual design of office furnishing are marked to identify the specific office furnishing with which they have been investigated.

Products that require electrical assembly in the field are covered as kits or light accessories in the individual certifications. Kits and light accessories are completely wired to the extent permitted by the intended field installation, with all splices and connections completed and with all electrical components mounted.

A kit forms a complete office furnishing light when assembled in accordance with the instructions provided.

A light accessory and the required office furnishing or a combination of light accessories form a complete office furnishing light when assembled in accordance with the instructions provided.

The individual certifications may include one or more Roman numerals (from II through XIV) that had previously been used to identify certain types of portable luminaires covered under that certification. This identification system is no longer in use, and these Roman numerals can be disregarded.

REBUILT PRODUCTS

This category also covers office furnishing lights that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt office furnishing lights are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt office furnishing lights are subject to the same requirements as new office furnishing lights.

RELATED PRODUCTS

Office furnishing lights investigated to CSA-C22.2 No. 12, ''Portable Luminaires,'' or CSA-C22.2 No. 9.0, ''General Requirements for Luminaires,'' may also be covered under Luminaires, Portable Certified for Canada (QOWZ7).

Office furnishing light accessories investigated to CSA-C22.2 No. 12 may also be covered under Portable Luminaire Kits and Subassemblies Certified for Canada (QPAU7).

Office furnishing light accessories investigated to CSA-C22.2 No. 250.0, ''Luminaires,'' may also be covered under Luminaire Fittings Certified for Canada (IFFX7).

ADDITIONAL INFORMATION

For additional information, see Office Furnishings Certified for Canada (QAWZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 250.0, ''Luminaires,'' CSA-C22.2 No. 9.0, ''General Requirements for Luminaires,'' CSA-C22.2 No. 12, ''Portable Luminaires,'' and CAN/CSA-C22.2 No. 203, ''Modular Wiring Systems for Office Furniture,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Office Furnishing Lights Certified for Canada (QAXB7)−*Continued*

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Office Furnishing Light,'' ''Office Furnishing Light Kit,'' ''Office Furnishing Light Accessory'' or ''Rebuilt Office Furnishing Light.'' The word ''Luminaire'' may be used in lieu of ''Light.''

* *

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OFFICE FURNISHING ACCESSORIES CERTIFIED FOR USE WITH SPECIFIED EQUIPMENT CERTIFIED FOR CANADA (QAXE7)

USE AND INSTALLATION

This category covers office furnishing accessories, such as lighting units, receptacles, clocks, power distribution systems and system components, intended for field installation in specific combinations that have been investigated for use with the specific office furnishing systems.

These accessories have been investigated for use with other manufacturers' certified office furnishings, as indicated in the Certification Mark or the referenced compatibility list.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 203 (1991), ''Modular Wiring Systems for Office Furniture.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*]
FOR USE WITH UL LISTED [manufacturer's name and model no(s).]
OFFICE FURNISHING PANEL SYSTEM
Control No.
or
[PRODUCT IDENTITY*]
FOR CATALOG NUMBERS OF COMPATIBLE EQUIPMENT, REFER TO PUBLICATION NO. ___ PROVIDED WITH THIS PRODUCT. IF ADDITIONAL INFORMATION IS NECESSARY, CONTACT THE FACTORY.
Control No.

* as shown in the individual Classifications

The referenced publication is a compatibility list that tabulates the company names, catalog numbers and electrical ratings of the Classified accessories, and the company name(s) and catalog number(s) of the applicable UL Listed products with which the accessories have been investigated. One copy of the compatibility list and the installation instructions are provided with each accessory.

* *

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OPTICAL FIBER CABLE CERTIFIED FOR CANADA (QAYK7)

USE

This category covers optical fiber cable, which is a jacketed cable for use within buildings in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' in telecommunications systems.

PRODUCT MARKINGS

Optical fiber cable is identified by a marking on the surface of the jacket or on a marker tape under the jacket consisting of the manufacturer's identification (name, trademark or color threads), cable type designation as noted below, flame classification as specified for the applicable cable type, and the temperature rating if above 60°C. Optical fiber cable may optionally be marked ''sunlight resistant'' (or ''sun res'' or ''SR'').

Type Designations and Associated Flame Ratings

OFNG, OFCG, OFNR or OFCR — The char length of this cable does not exceed 1.5 m (4 ft 11 in.) when tested in accordance with the Vertical-Tray Flame Test, Method 2 – FT4 in CSA-C22.2 No. 2556, ''Wire and Cable Test Methods.'' Smoke measurements are optional; the total smoke released does not exceed 150m^2 and the peak smoke release rate does not exceed 0.40 m^2/s when tested in accordance with the ST1 Limited Smoke Test in CSA-C22.2 No. 2556. The flame rating ''FT4'' or ''FT4-ST1,'' as applicable, follows the Type designation.

OFNP or OFCP — This cable exhibits a maximum peak optical density of 0.5, a maximum average optical density of 0.15, and a maximum flame spread distance of 1.50 m (5 ft), when tested per ANSI/NFPA 262, ''Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces,'' (CSA FT6 flame test). The flame rating ''FT6'' follows the Type designation.

OFNH, OFCH, OFN or OFC — This cable complies with the FT1 Flame Test requirements when tested in accordance with the FT1 flame test in CSA-C22.2 No. 2556. The flame rating ''FT1'' follows the Type designation.

A ''C'' in the third position of the Type designation indicates that the cable contains noncurrent-carrying conductive members, such as metallic strength members and metallic vapor barriers.

An ''N'' in the third position of the Type designation indicates that the cable contains no metallic members and no other electrically conductive materials.

Cable marked ''sunlight resistant'' (or ''sun res'' or ''SR'') may be exposed to the direct rays of the sun.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 232, ''Optical Fiber Cables.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, coil, reel, or smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Optical Fiber Cable.''

The Listing Mark for this category requires the use of a holographic label.

* *

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OPTICAL FIBER CABLE, FIELD ASSEMBLED CERTIFIED FOR CANADA (QAZD7)

USE AND INSTALLATION

This category covers field-assembled optical fiber cable, which is an on-site assembly of one or more optical fiber members and an optical fiber jacket. Field-assembled optical fiber cable is intended for installation in buildings in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' The optical fiber jacket is installed in a manner similar to conduit or raceway. Once the jacket is installed, the optical fiber members are inserted into the jacket, completing the assembly.

PRODUCT MARKINGS

Optical fiber cable is identified by a marking on the surface of the jacket . This marking includes the flame rating ''FT1'' or the suffix ''H,'' ''FT4'' or the suffix ''G'' or ''R,'' or ''FT6'' or the suffix ''P,'' in addition to the Listee's name and catalog designation and one of the following Type designations:

OFC — Indicates cable that contains noncurrent-carrying conductive members, such as metallic strength members and metallic vapor barriers.

OFN — Indicates cable that contains no metallic members and no other electrically conductive materials.

Cable marked ''Sunlight Resistant'' (or ''Sun Res'' or ''SR'') may be exposed to the direct rays of the sun.

Optical Fiber Cable, Field Assembled Certified for Canada (QAZD7)−*Continued*

The marking on the attached tag, coil, reel or smallest unit container in which the optical fiber jacket is packaged includes the following: "For Use Only with Optical Fiber Members, Cat. No.____, manufactured by [company name]."

The marking on the attached tag, coil, reel or smallest unit container in which the optical fiber members are packaged contains the following: "[Company name] Optical Fiber Members, For Use Only With Optical Fiber Jacket Cat. No. ____, manufactured by [company name]."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 232, "Optical Fiber Cables."

UL MARK

The UL symbol on the optical fiber jacket and the Listing Mark of UL on the attached tag, coil, reel or smallest unit container in which the optical fiber jacket is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Field Assembled Optical Fiber Cable."

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OPTICAL FIBER/COMMUNICATIONS/ SIGNALING/COAXIAL CABLE RACEWAY CERTIFIED FOR CANADA (QAZM7)

USE AND INSTALLATION

This category covers raceway and fittings intended for the installation of conductive and nonconductive optical fiber cable, communications cable, signaling cable, and coaxial cable in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." The raceway is only suitable for the installation of the optical fiber cable, communications cable, signaling cable, and coaxial cable noted in the following information. Individual raceway systems differ in their construction and, therefore, their components are not interchangeable with other raceway or fittings of other systems. This category includes pliable lengths, rigid straight sections, elbows, bends and fittings such as expansion joints, female and male adapters, and couplings.

A raceway marked "Plenum – OFCR FT-6" is suitable for use in ducts, plenums or other spaces used for environmental air when used to enclose optical fiber cable, communications cable, signaling cable, and coaxial cable marked "FT-6." This raceway exhibits a maximum peak optical density of 0.5, a maximum average optical density of 0.15, and a maximum flame-spread distance of 1.50 m when tested in accordance with the Test for Flame Propagation and Smoke-Density Values (Plenum) in ULC/ORD-C2024, "Standard Method of Fire Tests for Optical Fibre Cable Raceway." This raceway is identified by a marking on the surface of the raceway or on a marker tape. This raceway is also suitable for installation in risers when used to enclose optical fiber cable, communications cable, signaling cable, and coaxial cable marked "FT-4" or "FT-6," and general-purpose use when used to enclose optical fiber cable, communications cable, signaling cable, and coaxial cable marked "FT-1," "FT-4" or "FT-6."

A raceway marked "Riser – OFCR FT-4" is suitable for installation in risers when used to enclose optical fiber cable, communications cable, signaling cable, and coaxial cable marked "FT-4" or "FT-6." This raceway has fire-resistant characteristics capable of preventing the carrying of fire from floor to floor. This raceway meets the test requirements of the Test for Flame Propagation (Riser) in ULC/ORD-C2024. This raceway is identified by a marking on the surface of the raceway or on a marker tape. The raceway is also suitable for general-purpose use when used to enclose optical fiber cable, communications cable, signaling cable, and coaxial cable marked "FT-1," "FT-4" or "FT-6."

A raceway marked "General – OFCR FT-1" is suitable for general-purpose use, with the exception of risers, plenums, and other spaces used for environmental air when used to enclose optical fiber cable, communications cable, signaling cable, and coaxial cable marked "FT-1," "FT-4" or "FT-6." This raceway is resistant to the spread of fire when tested in accordance with the Vertical-Tray Flame Test (General Use) in ULC/ORD-C2024.

Pliable raceway is a raceway that can be bent by hand without the use of tools. The smallest radius of the curve of the inner edge of any bend to which the raceway may be bent without cracking either on the outer surface or internally is not less than 2-1/2 times the outside diameter of the raceway.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C2024, "Standard Method of Fire Tests for Optical Fibre Cable Raceway."

UL MARK

The UL symbol and the product name "Optical Fiber Raceway," "Communications Cable Raceway," "Signaling Cable Raceway," "Coaxial Cable Raceway" or "Optical Fiber/Communications/Signaling/Coaxial Cable Raceway" on the raceway, and the Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the appropriate product names as indicated above.

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OPTICAL FIBER/COMMUNICATIONS/ SIGNALING/COAXIAL CABLE OUTLET BOXES CERTIFIED FOR CANADA (QAZR7)

USE AND INSTALLATION

This category covers outlet boxes and other device-mounting products intended to support outlets for use with or without raceways and fittings that contain nonconductive optical fiber cable, communications cable, signaling cable, and coaxial cable. These products are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." The products and raceways are only suitable for the installation of the optical fiber, communications cable, signaling cable, and coaxial cable. Individual raceway systems differ in their construction and, therefore, their components are not interchangeable with other raceways or fittings of other systems.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 18.1, "Metallic Outlet Boxes," and CSA-C22.2 No. 18.2, "Nonmetallic Outlet Boxes."

UL MARK

The Listing Mark on the product, or the UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Optical Fiber Outlet Box," "Communications Cable Outlet Box" or "Optical Fiber/Communications/Signaling/Coaxial Cable Outlet Box," or other appropriate product name as shown in the individual Listings.

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OUTLET BOX ACCESSORIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QAZV7)

GENERAL

This category covers conduit box bodies, flat and domed covers, fixture hanger covers, threaded extensions, sealing hub covers, and similar subassemblies of outlet boxes, fixture fittings and conduit fittings. They are intended to be assembled at the factory or in the field by the user to form a complete explosion-proof or dust-ignition-proof enclosure. Information on restrictions in the use and assembly of these devices are marked on each part.

RELATED PRODUCTS

See Outlet Boxes for Use in Hazardous Locations Certified for Canada (QBCR7), Conduit Fittings for Use in Hazardous Locations Certified for Canada (EBNV7) and Luminaire Fittings for Use in Hazardous Locations Certified for Canada (IGIV7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Outlet Box Accessory for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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CABLE ROUTING ASSEMBLIES CERTIFIED FOR CANADA (QBAA7)

USE AND INSTALLATION

This category covers routing assemblies for the installation of conductive and nonconductive optical fiber cable and communications cable. The routing assemblies are only suitable for the installation of optical fiber and communications cable noted in the following information. Individual routing assembly systems differ in their construction and, therefore, their components are not interchangeable with other routing assemblies or fittings of other systems. This category includes pliable lengths, rigid straight sections, elbows, bends, and fittings such as expansion joints, female and male adapters, and couplings.

These products may or may not incorporate end fixtures or covers.

A routing assembly marked ''Plenum – OFCR FT-6'' is suitable for use in ducts, plenums or other spaces used for environmental air when used to enclose optical fiber or communications cable marked ''FT-6.'' This exhibits a maximum peak optical density of 0.5, a maximum average optical density of 0.15, and a maximum flame spread distance of 1.50 m when tested in accordance with the Test for Flame Propagation and Smoke-Density Values (Plenum) in ULC/ORD-C2024, ''Standard Method of Fire Tests for Optical Fibre Cable Raceway.'' This routing assembly is identified by a marking on the surface of the routing assembly or on a marker tape. This routing assembly is also suitable for installation in risers when used to enclose optical fiber or communications cable marked ''FT-4'' or ''FT-6'' and general use when used to enclose optical fiber or communications cable marked ''FT-1,'' ''FT-4'' or ''FT-6.''

A routing assembly marked ''Riser – OFCR FT-4'' is suitable for installation in risers when used to enclose optical fiber or communications cable marked ''FT-4'' or ''FT-6.'' This routing assembly has fire-resistant characteristics capable of preventing the spread of fire from floor to floor. This routing assembly meets the test requirements of the Test for Flame Propagation (Riser) in ULC/ORD-C2024. This routing assembly is identified by a marking on the surface of the routing assembly or on a marker tape. The routing assembly is also suitable for general use when used to enclose optical fiber or communications cable marked ''FT-1,'' ''FT-4'' or ''FT-6.''

A routing assembly marked ''General – OFCR FT-1'' is suitable for general use, with the exception of risers, plenums, and other spaces used for environmental air when used to enclose optical fiber or communications cable marked ''FT-1,'' ''FT-4'' or ''FT-6.''

This routing assembly is resistant to the spread of fire when tested in accordance with the Vertical-Tray Flame Test (General Use) in ULC/ORD-C2024.

RELATED PRODUCTS

Optical fiber and communications cable raceways are covered under Optical Fiber/Communications/Signaling/Coaxial Cable Raceway Certified for Canada (QAZM7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C2024, ''Standard Method of Fire Tests for Optical Fibre Cable Raceway.''

UL MARK

The UL symbol on the product and the complete Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''General-use Cable Routing Assembly,'' ''Riser Cable Routing Assembly,'' ''Plenum Cable Routing Assembly,'' ''Optical Fiber Routing Assembly,'' ''Communications Cable Routing Assembly'' or ''Optical Fiber/Communications Cable Routing Assembly.''

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OUTLET BOXES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QBCR7)

GENERAL

This category covers conduit boxes for use in threaded rigid conduit or steel intermediate metal conduit systems. They provide for splicing of conductors, but conductors should not be sealed in conduit boxes. The boxes are marked to indicate when accessories such as unions and sealing fittings are furnished with the box.

Boxes marked ''rain tight'' have been subjected to tests designed to simulate exposure to beating rain to determine that such exposure will not result in entrance of water.

Cast-aluminum alloy outlet boxes are not considered acceptable for installation in concrete or cinder fill unless protected with asphalt base paint or the equivalent.

RELATED PRODUCTS

See Conduit Fittings for Use in Hazardous Locations Certified for Canada (AAIZ7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Outlet Box for Hazardous Locations.''

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ACTIVE OPTICAL CABLE ASSEMBLIES CERTIFIED FOR CANADA (QBDV7)

GENERAL

This category covers factory-assembled active optical cable (AOC) assemblies. AOC is a cabling technology that accepts the same electrical interfaces as a traditional copper cable, but uses optical fiber between the connectors. AOC uses electrical-to-optical transceivers on the cable ends to access the performance capabilities of optical fiber while retaining compatibility with standard electrical interfaces.

AOC assemblies consist of optical fiber or hybrid (optical fiber/copper) cable and electrically active connectors incorporating optical transceivers. This AOC utilizes Class 1 lasers with the light source wholly contained within the cable assembly. The electrical circuits are powered by a Class 2 power source or an information technology (computer) equipment limited-power circuit as defined in Section 16 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). Hybrid cable may be used to carry electrical power to the far end of the cable and is suitably rated for the voltage and current involved.

USE AND INSTALLATION

This category covers AOC assemblies intended for installation between units of electronic equipment where the interconnecting cable is outside of the equipment enclosures. AOC assemblies are not a permanent wiring method except as described in the CEC articles below.

When constructed with a certified cable identified by a marking on the surface of the jacket as a type permitted in Sections 16, 56 or 60 of the CEC, AOC assemblies may be installed in accordance with those sections.

RELATED PRODUCTS

Active connectors such as those that incorporate active optical transceivers are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ8) or Audio/Video, Information and Communication Technology Equipment Certified for Canada (AZOA8).

Optical fiber cable (without connectors) for use within buildings in accordance with Section 56 of the CEC is covered under Optical Fiber Cable Certified for Canada (QAYK7).

Factory-assembled optical fiber cable assemblies and factory-/field-installed connector products intended for residential and/or commercial applications as part of an optical fiber wiring system without active optical transceivers are covered under Optical Fiber Cable Assemblies and Connectors Certified for Canada (QBFA7).

Communications interconnecting cable, patch cords, extension cords and the like without active optical transceivers and not intended for use in residential and/or commercial applications as connected premises in accordance with the CEC are covered under Communications-circuit Accessories Certified for Canada (DUXR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

All assemblies: TIA-455-6-B (2003), "FOTP-6 - Cable Retention Test Procedure for Fiber Optic Cable Interconnecting Devices."

Optical fiber cable identified as a type permitted for permanent installation in public or private premises by Section 56 of the CEC: CSA-C22.2 No. 232 (2009), "Optical Fiber Cables."

Hybrid cable identified as a type permitted for permanent installation in public or private premises by Sections 16 or 60 of the CEC: CSA-C22.2 No. 214 (2008), "Communications Cables."

Optical fiber cable for use in patch cords and not intended for permanent installation in public or private premises as described in the CEC: CSA-C22.2 No. 2556 (2007), "Wire and Cable Test Methods" (FT-1 rating).

Hybrid cable for use in patch cords and not intended for permanent installation in public or private premises as described in the CEC: CSA-C22.2 No. 210 (2011), "Appliance Wiring Material Products" (FT-1 rating).

UL MARK

The Listing Mark of UL on the product, on the attached tag or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Active Optical Cable" or "[Technology] Active Optical Cable," where "Technology" refers to the copper technology of the interface, such as "HDMI," "Thunderbolt" or "Ethernet."

The words "Active Optical Cable" may be abbreviated "AOC."

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OPTICAL FIBER CABLE ASSEMBLIES AND CONNECTORS CERTIFIED FOR CANADA (QBFA7)

GENERAL

This category covers factory-assembled optical fiber cable assemblies and factory/field-installed connector products intended for residential and/or commercial applications as part of an optical fiber wiring system.

Optical fiber cable assemblies consist of optical fiber cable and optical fiber cable connectors. When constructed with a certified cable identified by a marking on the surface of the jacket as a type permitted in Section 56 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), optical fiber cable assemblies may be installed in accordance with that Section.

Optical fiber cable connectors are intended for factory assembly or for field assembly by trained service personnel.

RELATED PRODUCTS

Optical fiber cable (without connectors) for use within buildings in accordance with the CEC is covered under Optical Fiber Cable Certified for Canada (QAYK7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate optical fiber connectors is CAN/CSA-C22.2 No. 0.17 (2000), "Evaluation of Properties of Polymeric Materials."

The basic standards used to investigate optical fiber cable assemblies are CSA-C22.2 No. 232 (2009), "Optical Fiber Cables" (where certified cable is employed) or CSA-C22.2 No. 2556 (2007), "Wire and Cable Test Methods" (for noncertified cable FT-1 rating) and, for connectors, CAN/CSA-C22.2 No. 0.17 (2000) and TIA-455-6-B (2012), "FOTP-6 – Cable Retention Test Procedure for Fiber Optic Cable Interconnecting Devices."

UL MARK

The Listing Mark of UL on the product or on the attached tag or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Optical Fiber Cable Assembly" or "Optical Fiber Connector."

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OUTLET BOXES AND FITTINGS CERTIFIED FOR CANADA (QBPZ7)

METALLIC OUTLET BOXES CERTIFIED FOR CANADA (QCIT7)

GENERAL

This category covers metallic flush device boxes, conduit boxes, floor boxes, outlet boxes, outlet box hoods, special-purpose boxes (e.g., concrete and boxes for ceiling fans), extension rings, metallic covers, and cover plates for flush-mounted wiring devices intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Units of measure for markings are SI (metric) units unless otherwise specified. Markings expressed in equivalent units are optional.

COVER POSITION FOR 4-BY-4 BOX

This box accommodates two standard cover configurations.

EXTENSION RINGS

Extension rings are suitable for extending properly secured flush- or surface-mounted boxes. One or more extensions may be used. An extension ring is intended to increase the box depth, volume, or both.

BOX EXTENDER

Adjustable-depth box extenders intended for adjustment during installation are marked with the maximum allowable amount of extension. The smallest unit shipping carton is also marked with the following or equivalent: "MAXIMUM EXTENSION __ mm (__in)" or "EXTENSION MAXIMUM __mm (__ in)."

Metallic Outlet Boxes Certified for Canada (QCIT7)−*Continued*

CLAMPS

Each cable opening, except a round knockout, is provided with a clamp. The carton is marked to indicate the type of wiring system or combination of systems for which they have been tested. The clamps are marked with the following letters or combinations thereof to indicate that they are suitable for use with armored cable, TECK cable or aluminum-sheathed cable (“A”): flexible metal conduit – F, nonmetallic-sheathed cable – ‘‘N,’’ or flexible tubing (loom) – “T.” If suitable for all types, the clamp is marked ‘‘ALL.’’ Clamps suitable for nonmetallic-sheathed cable are also suitable for multiconductor underground feeder and branch circuit cable where used in dry locations. Clamps have been tested for securing only one cable per clamp, except multiple-section clamps are considered suitable for securing one cable under each section of the clamp, each cable entering a separate knockout. If clamps have been tested only for 14/2 or for a cable size larger than 14/2, the cable size or size range is marked on the clamp or its smallest unit shipping carton. If clamps have been tested with 14/2 and the largest size cable the cable entry can physically accommodate, no marking is required.

KNOCKOUT ENTRY

Knockouts for the entrance of conduit or cable are not located in the sides of a gangable (sectional) box, including boxes intended to accommodate a switch rated at 347 V ac.

FIXTURE/LUMINAIRE SUPPORT

A box, with or without a bracket or bar hanger, intended for support of a fixture/luminaire is suitable for fixtures/luminaires weighing up to 23 kg. A bar hanger or a box designed to be supported from a ceiling grid is marked ‘‘Not for Fixture/Luminaire or Fan Support.’’ An instruction sheet is provided. The box is marked with the maximum weight it can support, but not exceeding 23 kg.

CEILING PADDLE FAN SUPPORT

An outlet box intended to support a ceiling-suspended fan weighing a maximum 15.9 kg or 23 kg is visibly and clearly marked ‘‘ACCEPTABLE FOR FAN SUPPORT OF ___ kg (___ lb) OR LESS’’ and ‘‘CONVIENT AU SUPPORT D’UN VENTILATEUR DE ___ kg (___ lb) OU MOINDRE,’’ with blanks filled in with maximum values. Each ceiling fan support box is provided with size No. 10-32 retaining screws and external tooth lock washers for securing the fan or the outlet box cover to the box.

INTEGRAL CONNECTORS

Boxes with integral connectors for electrical metallic tubing or for unthreaded rigid metallic conduit are provided with a marking on the carton to indicate the specific type or types of wiring system for which the box has been tested.

GROUNDING MEANS

A minimum of one installed grounding screw per gang or device, or other means, is provided to connect the branch-circuit grounding conductors to the box and to connect a bonding jumper from the box to the grounding terminal of a wiring device. An identified hole, threaded or not, is not acceptable for grounding.

CONCRETE TIGHT

Boxes suitable for installation in concrete are identified as ‘‘concrete tight’’ on the carton. They may have no means of support other than the concrete and often accommodate covers at top and bottom. Outlet boxes intended for use in concrete slab ceilings have knockouts located to allow the conduit to be installed above crossed reinforcing bars without being offset or bent.

FLOOR BOXES

Floor boxes designed for floor installation are provided with covers and gaskets to exclude surface water and sweeping compounds that might be present in floor cleaning operations. Those boxes intended for installation in concrete floors are frequently provided with leveling screws, threaded hubs, or both and are provided with a marking on the carton to identify boxes of this type such as ‘‘Floor Box’’ or ‘‘Floor Box, Concrete Tight,’’ as appropriate. Floor boxes may be provided with wiring devices.

WET AND DAMP LOCATIONS

Boxes and covers intended for use in wet locations are marked ‘‘Wet Location.’’ Boxes with threaded conduit hubs will normally prevent water from entering except for condensation within the box or connected conduit.

Box and device cover combinations, and flush device covers that provide protection from the weather only when the cover is closed are marked ‘‘Wet Location Only When Cover Closed.’’ Outlet box hoods intended for use in damp or wet locations are marked for each location and may be marked ‘‘Extra-Duty.’’

RELATED PRODUCTS

Outlet box assemblies that include certified outlet boxes and one or more of the following certified parts: wiring device, mud ring, cover plate, wet-location gasket and cover plate, wet-location gasket and outlet box hood, or other factory-assembled parts, are covered under Wiring Assemblies Certified for Canada (QQYZ7).

ADDITIONAL INFORMATION

Metallic Outlet Boxes Certified for Canada (QCIT7)−*Continued*

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 18.1 (2004), ‘‘Metallic Outlet Boxes,’’ and CAN/CSA-C22.2 No. 42.1 (2000), ‘‘Cover Plates for Flush-Mounted Wiring Devices.’’

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word “LISTED,” a control number, and one of the following product names: ‘‘Outlet Box,’’ ‘‘Outlet Box and Cover,’’ ‘‘Extension Ring,’’ ‘‘Flush Device Box,’’ or other appropriate product name as shown in the individual Listings.

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NONMETALLIC OUTLET BOXES CERTIFIED FOR CANADA (QCMZ7)

GENERAL

This category covers nonmetallic flush device boxes, conduit boxes, floor boxes, outlet boxes, outlet box and bar hanger assemblies, outlet box hoods, special-purpose boxes (e.g., concrete and boxes for ceiling fans), extension rings, metallic and nonmetallic box extenders, covers, and cover plates for flush-mounted wiring devices intended for installation in accordance with CAN/CSA-C22.1, ‘‘Canadian Electrical Code, Part I.’’ Units of measure for markings will include SI (metric) units, unless otherwise specified. Markings expressed in equivalent units are optional.

COVER MOUNTING SCREW HOLES FOR 4-BY-4 BOX

This box accommodates two standard cover configurations.

BOX EXTENDER

Adjustable-depth box extenders intended for adjustment during installation are marked with the maximum allowable amount of extension. The smallest unit shipping carton is also marked with the following or equivalent: ‘‘MAXIMUM EXTENSION ___ mm (___ in)’’ or ‘‘EXTENSION MAXIMUM ___ mm (___ in).’’

CABLE AND CLAMPS

Each cable opening, except a round knockout, is provided with a clamp. The carton is marked to indicate the type of wiring system or combination of systems for which they have been tested. The clamps are marked with the following letters or combinations thereof to indicate that they are suitable for use with nonmetallic-sheathed cable ‘‘N’’ or flexible tubing (loom) “T.” Clamps have been tested for securing only one cable per clamp, except multiple-section clamps are considered suitable for securing one cable under each section of the clamp, each cable entering a separate knockout. If clamps have been tested only for 14/2 or for a cable size larger than 14/2, the cable size or size range is marked on the clamp or its smallest unit shipping carton. If clamps have been tested with 14/2 and the largest size cable the cable entry can physically accommodate, no marking is required.

Boxes intended for use with nonmetallic-sheathed cable or open wiring are suitable for use with cable or wire rated 90°C.

FOR USE WITH RIGID PVC CONDUIT

Nonmetallic boxes for use with rigid PVC conduit are intended for use at a maximum working temperature of 75°C.

FIXTURE/LUMINAIRE SUPPORT

A box, with or without a bracket or bar hanger, intended for support of a fixture/luminaire is suitable for fixtures/luminaires weighing up to 13 kg or less or up to 23 kg. The box is marked either 13 kg or 23 kg.

A bar hanger or a box not intended to be used with a box for fixture/luminaire or ceiling fan support, but designed only to be supported from a ceiling grid is marked ‘‘Not for Fixture/Luminaire or Fan Support.’’

CEILING FAN SUPPORT

An outlet box intended to support a ceiling-suspended fan weighing a maximum 15.9 kg or 23 kg is visibly and clearly marked ‘‘ACCEPTABLE FOR FAN SUPPORT OF ___ kg (___ lb) OR LESS’’ and ‘‘CONVIENT AU SUPPORT D’UN VENTILATEUR DE ___ kg (___ lb) OU MOINDRE,’’ with blanks filled in with maximum values. Each ceiling fan support box is provided with size No. 10-32 retaining screws and external tooth lock washers for securing the fan or the outlet box cover to the box.

GROUNDING MEANS

Nonmetallic Outlet Boxes Certified for Canada (QCMZ7)−*Continued*

A metal strap or plate with a minimum of one installed grounding screw is provided for bonding connection in a box of nonmetallic material, and is securely mounted to the box. A means is provided for continuous bonding of multiple wiring devices.

CONCRETE TIGHT

Boxes suitable for installation in concrete are designated as ''concrete tight'' on the carton. They may have no means of support other than the concrete and often accommodate covers at top and bottom. Outlet boxes intended for use in concrete slab ceilings have knockouts located to allow the conduit to be installed above crossed reinforcing bars without being offset or bent.

FLOOR BOXES

Floor boxes designed for floor installation are provided with covers and gaskets to exclude surface water and sweeping compounds that might be present in floor-cleaning operations. Those boxes intended for installation in concrete floors are frequently provided with leveling screws, threaded hubs, or both and are provided with a marking on the carton to identify boxes of this type, such as ''Floor Box'' or ''Floor Box, Concrete Tight,'' as appropriate. Floor boxes may be provided with wiring devices.

WET LOCATIONS

Boxes and covers are intended for use in wet locations are marked ''Wet Location'' or ''Rain tight.'' Boxes with threaded conduit hubs will normally prevent water from entering except for condensation within the box or connected conduit.

Box and device cover combinations, and flush device covers that provide protection from the weather only when the cover is closed, are marked ''Wet Location Only When Cover Closed.'' Outlet box hoods intended for use in damp or wet locations are marked for each location and may be marked ''Extra-Duty.''

RELATED PRODUCTS

Outlet box assemblies that include certified outlet boxes and one or more of the following certified parts: wiring device, mud ring, cover plate, wet-location gasket and cover plate, wet-location gasket and outlet box hood, or other factory-assembled parts, are covered under Wiring Assemblies Certified for Canada (QQYZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 18.2, ''Nonmetallic Outlet Boxes,'' CAN/CSA-C22.2 No. 42.1, ''Cover Plates for Flush-Mounted Wiring Devices,'' and CAN/CSA-C22.2 No. 85, ''Rigid PVC Boxes and Fittings.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Outlet Box,'' ''Outlet Box and Cover,'' ''Extension Ring'' or ''Flush Device Box,'' or other appropriate product name as shown in the individual Listings.

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OUTLET BUSHINGS AND FITTINGS CERTIFIED FOR CANADA (QCRV7)

GENERAL

This category covers supports for outlet and flush-device boxes; bushings for use in metal studs; fittings for use in or on outlet and flush-device boxes, such as knockout reducers, seals and insulating inserts, and cord-grip attachments; insulating gaskets used behind a cover plate for flush-mounted wiring devices to stop drafts; pulling, strain-relief and support grips; locknuts for conduit; sealing rings, service-entrance heads for rigid conduit or electrical metallic tubing; cable riser supports; and bushings for use on the ends of rigid or flexible conduit, electrical metallic tubing, or armored cable, where a change to open wiring is made. These bushings are suitable for temperatures of 150°C if they are black or brown in color, 90°C if they are any other color unless specifically marked for a higher temperature. These products are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

All male threaded fittings have only been investigated for use with locknuts.

Outlet Bushings and Fittings Certified for Canada (QCRV7)−*Continued*

Reusability — Bushings and fittings have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

Service-entrance heads or hoods are intended to be used on rigid conduit or electrical metallic tubing that is mounted with the conductor openings facing toward the ground. Service-entrance heads or hoods are suitable for outdoor use and in wet locations.

ENVIRONMENTAL ENCLOSURE TYPE RATINGS

Each fitting may be marked with one or more of the following Environmental Enclosure Type ratings for which it was investigated: Type 1, 2, 3, 3R, 3S, 4, 4X, 5, 6, 6P, 12, 12K, 13. The intended uses for each Environmental Enclosure Type are indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/CSA-C22.2 No. 18.1 (2004), ''Metallic Outlet Boxes''
CSA-C22.2 No. 18.3 (2004), ''Conduit, Tubing, and Cable Fittings''
CAN/CSA-C22.2 No. 42.1, ''Cover Plates for Flush-Mounted Wiring Devices''
CAN/CSA-C22.2 No. 85 (1989), ''Rigid PVC Boxes and Fittings''
CSA-C22.2 No. 211.0, ''General Requirements and Methods of Testing for Nonmetallic Conduit''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Outlet Bushing,'' ''Outlet Fitting,'' ''Offset Adapter,'' ''Bar Hanger,'' or other appropriate product name as shown in the individual Listings.

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OUTLET CIRCUIT TESTERS CERTIFIED FOR CANADA (QCYU7)

GENERAL

This category covers portable devices with fixed attachment-plug blades, or probes attached to flexible leads, used to indicate various wiring conditions in branch circuits by a pattern of lights or other similar means along with markings or instructions to identify the probable wiring conditions which cannot be determined by the tester.

The devices may include provisions for checking the functions of a ground-fault circuit interrupter (GFCI), connected to the branch circuit.

These devices are not comprehensive diagnostic instruments.

RELATED PRODUCTS

Ground-continuity-indicating devices constructed integral with cord-connector bodies for use on construction sites are covered under Attachment Plugs, Fuseless Certified for Canada (AXUT7) as ''cord-connector bodies.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 160 (1985), ''Voltage and Polarity Testers.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Circuit Tester.''

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PACKAGED PUMPING SYSTEMS CERTIFIED FOR CANADA (QCZJ7)

GENERAL

This category covers fluid handling systems consisting of pumps, electric motors, frequency drives, control valves, gauges and piping mounted on a structural steel base. They are used for plumbing boosters, heat transfer, hot water heating, HVAC chilled and hot water packages, irrigation, boiler feed and condensate packages, and similar applications.

This category also covers fountain pumping systems intended for connection to permanently-installed architectural and floating fountains. They are intended for installation in accordance with Section 68 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). If provided with a control panel, its nameplate includes "Industrial Control Panel for Floating Fountain," "Industrial Control Panel for Permanently Installed Fountain" or "Fountain Control Panel."

RATINGS

Packaged pumping systems are rated 600 V or less. The supply input is rated in full load amperes, voltage, number of phases, frequency, and the rating of the largest motor load.

The system and components of the system are intended to be used within the rated working pressure and with the appropriate liquids in accordance with system markings.

SPECIAL CONSIDERATIONS

These pumping systems have not been investigated for the handling of hazardous materials or for use in hazardous (classified) locations as defined in the CEC.

RELATED PRODUCTS

Systems covered under this category may also be covered under Drinking Water System Components Certified for Canada (FDNP7). The investigation of drinking water system components is conducted with respect to contaminants that can be introduced into the drinking water supply from their base metal alloy, plastic resin, or other nonmetallic parts such as gaskets, seals, coatings, adhesives, filter media, cement linings or the like.

Systems investigated together with air conditioning and refrigeration equipment are covered under Heating and Cooling Equipment Certified for Canada (LZFE7) or Specialty Refrigeration Equipment Certified for Canada (SROT7).

Pumps intended for use with flammable liquids are covered under Pumps, Power Operated, Flammable Liquid Certified for Canada (RCRX7).

Prepackaged combinations of components, such as pumps, filters, heaters, blowers, lights and controls, intended for use with field-supplied hot tubs or spas are covered under Hot Tub and Spa Equipment Assemblies Certified for Canada (WBYQ7).

Pumps investigated for use with or in proximity to swimming pools or spas are covered under Pumps Certified for Canada (WCSX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, "Industrial Control Equipment," and CAN/CSA-C22.2 No. 108, "Liquid Pumps."

The basic standard used to investigate packaged pumping systems for heating and cooling equipment in this category is CSA-C22.2 No. 236, "Heating and Cooling Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Packaged Pumping System" or "Packaged Fountain Pumping System."

The Listing Mark covers only the equipment mounted to the common structural frame.

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PAINTING EQUIPMENT, AIR COMPRESSORS AND VACUUM PUMPS CERTIFIED FOR CANADA (QDFT7)

This category covers painting equipment, air compressors and vacuum pumps intended for use on nominal system voltages of 600 V and less, except that where the appliances are driven by universal type motors or electromagnetic mechanisms, the scope is limited to appliances rated for use on nominal system voltages of 240 V or less. These appliances are cord-connected or provided with means for field wiring connections.

This equipment is intended for household, commercial or industrial use as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). This includes sprayers intended for extensive open spraying of paints having a flash point higher than 60°C, but excludes electrostatic sprayers and types for use in spray booths or other areas when hazardous concentrations of flammable vapors are likely to occur.

Appliances specified as double insulated are constructed with a special insulating system in lieu of grounding to comply with the provisions of the CEC. Such appliances are distinctively marked "Double-Insulated" or with the symbol  .

The instructions and warnings supplied with and applicable to each piece of equipment should be carefully observed. In cases where the nature or construction of the equipment is such that precautions beyond the requirements in the CEC must be observed in installation or use, suitable warnings are marked on the equipment.

The burglary and theft protection features of coin-operated machines have not been investigated.

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COMPRESSORS, VACUUM PUMPS AND PNEUMATIC PAINT SPRAYERS CERTIFIED FOR CANADA (QDGS7)

USE AND INSTALLATION

This category covers air compressors and vacuum pumps, including pneumatic-type paint sprayers.

Pressure vessels, included with products under this category, are subject to the applicable requirements in CSA-B51, "Boiler, Pressure Vessel, and Pressure Piping Code."

Products can be cord-connected or provided with means for permanent connection in the field. Permanently connected products are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

REBUILT PRODUCTS

This category also covers compressors, vacuum pumps and pneumatic paint sprayers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt compressors, vacuum pumps and pneumatic paint sprayers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt compressors, vacuum pumps and pneumatic paint sprayers are subject to the same requirements as new compressors, vacuum pumps and pneumatic paint sprayers.

FACTORS NOT INVESTIGATED

This equipment has not been investigated for use as medical and dental equipment, or heating, air conditioning or refrigeration equipment.

RELATED PRODUCTS

High-pressure paint sprayers, paint mixers and paint pigment dispensers are covered under Painting Equipment Certified for Canada (QDIQ7).

ADDITIONAL INFORMATION

For additional information, see Painting Equipment, Air Compressors and Vacuum Pumps Certified for Canada (QDFT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory)

Compressors, Vacuum Pumps and Pneumatic Paint Sprayers Certified for Canada (QDGS7)−*Continued*

together with the word ″LISTED,″ a control number, and the product name ''Painting Equipment'' or other appropriate product name as shown in the individual Listings.

For rebuilt products the word ''Rebuilt'' or ''Reconditioned'' precedes the product name.

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ELECTROSTATIC PAINT-SPRAYING EQUIPMENT CERTIFIED FOR CANADA (QDHR7)

USE

This category covers electrostatic paint-spraying equipment, including control panels and power packs, intended to be installed and operated in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and ''National Fire Code of Canada'' requirements applicable to spray application using flammable and combustible materials.

With respect to the possibility of igniting solvent vapors and paint deposits in a spray booth by a spark from this equipment, Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Painting Equipment, Air Compressors and Vacuum Pumps Certified for Canada (QDFT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 187, ''Electrostatic Air Cleaners.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electrostatic Paint-spraying Equipment.''

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PAINTING EQUIPMENT CERTIFIED FOR CANADA (QDIQ7)

USE

This category covers motor-operated equipment used for the preparation or application of paint, such as paint mixers, paint pigment dispensers, paint rollers and high-pressure airless paint sprayers.

Products can be cord-connected or provided with means for permanent connection in the field. Permanently connected products are intended to be installed in accordance with CAN/CSA C22.1, ''Canadian Electrical Code, Part I.''

REBUILT PRODUCTS

This category also covers painting equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt painting equipment is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt painting equipment is subject to the same requirements as new painting equipment.

RELATED PRODUCTS

Paint heaters and paint dryers are covered under Heaters, Industrial and Laboratory Certified for Canada (KQLR7).

Pneumatic paint sprayers are covered under Compressors, Vacuum Pumps and Pneumatic Paint Sprayers Certified for Canada (QDGS7).

ADDITIONAL INFORMATION

For additional information, see Painting Equipment, Air Compressors and Vacuum Pumps Certified for Canada (QDFT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial).''

UL MARK

Painting Equipment Certified for Canada (QDIQ7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Painting Equipment'' or other appropriate product name as shown in the individual Listings.

For rebuilt products the word ''Rebuilt'' or ''Reconditioned'' precedes the product name.

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PANELBOARDS CERTIFIED FOR CANADA (QEUY7)

USE, INSTALLATION AND MARKINGS

This category covers panelboards and enclosed panelboards rated 600 V or less.

Panelboards are intended for mounting in cabinets, cutout boxes, or enclosures designed for the purpose. The enclosure may be provided with the panel or provided separately. Only panelboards marked to indicate that they are for use in a specific enclosures (identified by either catalog number or specific dimensional information) and panelboards labeled as ''Enclosed Panelboards'' have been investigated to determine that wiring space is adequate, or have been investigated for short-circuit-current ratings greater than 10,000 A rms symmetrical.

Enclosed panelboards identified with an Enclosure Type designation are intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Some enclosed panelboards have one or more openings for plug-in watt-hour or similar meters. Such panelboards, when marked for outdoor use have, except for the joint between the plug-in meter and opening, been investigated for rain tightness.

Some panelboards are suitable for use as service equipment and may be so marked. Such marking is part of the Listing Mark as noted below or is an integral part of other required markings. Panelboards marked to indicate that they are suitable for use as service equipment and which can be removed from the enclosure are marked to identify the specific box or boxes in which they are intended to be installed. If the acceptability of such a panelboard for use as service equipment depends upon the condition of installation or use, the panelboard is marked to indicate those conditions.

Some panelboards incorporate neutrals factory bonded to the frame or enclosure. Such units are marked ''Suitable Only for Use as Service Equipment.''

Panelboards marked for use at services may also be used to provide the main control and means of cutoff for a separately derived system.

Panelboards are marked with their short-circuit current rating in rms symmetrical amps. The marking states that short-circuit-current ratings are limited to the lowest interrupting rating of (1) any device installed or intended to be installed therein, and/or (2) any combination series-connected device. However, for combination series-connected devices, the short-circuit-current rating marked on the panelboard may be higher than the interrupting rating of a specific circuit breaker installed or intended to be installed in the panelboard. This higher rating is valid only if the specific overcurrent devices identified in the marking are used within or ahead of the panelboard in accordance with the marked instructions.

Panelboards to which units (circuit breakers, switches, etc.) may be added in the field are marked with the name or trademark of the manufacturer and the catalog number or equivalent of those units that are intended to be installed in the field.

Where in normal operation the load will continue for three hours or more, molded-case circuit breakers and fused switches, other than fused power circuit devices, should not be loaded to exceed 80% of their current rating unless the device is otherwise marked. Low-voltage ac power switching devices (see PAPU7) and fused power circuit devices (see IYSR7) used in panelboards are suitable for continuous use at 100% of their rating.

Some panelboards may be provided with ground-fault protection for services or major feeders. The circuit(s) so protected are identified by a marking, such as on a wiring diagram.

These panelboards are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location. If all

terminals are suitable for use with aluminum conductors as well as copper conductors, the panelboard is marked "Use Copper or Aluminum Wire." A panelboard employing terminals or main or branch circuits units, individually marked "CU-AL," will be marked as noted above or "Use Copper Wire Only." The latter statement indicates that wiring space or other factors make the panelboard unsuitable for aluminum conductors.

Unless the panelboard is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14–1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). However, 3-wire, single-phase service entrance or feeder conductors for dwelling units may be as covered in Notes to Table 2 and Table 4 of the CEC. Termination provisions are determined based on values provided in Tables 2 and 4, with no adjustment made for correction factors.

RELATED PRODUCTS

Large single panels, frames, or assemblies of panels on which are mounted on the face, back, or both, switches, overcurrent and other protective devices, buses, and usually instruments; accessible from the rear as well as from the front and not intended to be installed in cabinets are covered under Switchboards, Dead-front Certified for Canada (WEVZ7).

Distribution equipment, the sole function of which is the automatic or nonautomatic transferring of one or more load conductor connections from one power source to another, is covered under Transfer Switches Certified for Canada (WPTZ7).

Factory-wired assemblies of industrial control equipment intended to control industrial processes are covered under Industrial Control Panels Certified for Canada (NITW7).

Distribution equipment containing only one circuit subdivision, unless also provided with a meter socket, is covered under Circuit Breakers, Molded Case and Circuit-breaker Enclosures Certified for Canada (DIVQ7).

Distribution equipment intended to serve as a means for distributing power required to operate mobile or temporarily installed equipment is covered under Power Outlets and Power Outlet Fittings Certified for Canada (QPYV7).

Factory-wired assemblies of controllers, timers, temperature-regulating equipment and the like, intended for control of equipment for use with swimming pools, hot tubs and/or spas are covered under Controls Certified for Canada (WAWU7).

Factory-wired assemblies intended for the control of architectural and floating fountains are covered under Architectural and Floating Fountains Certified for Canada (AWEG7).

Portable power distribution equipment is covered under Power Distribution Equipment, Portable Certified for Canada (QPRW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 29, "Panelboards and Enclosed Panelboards."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Panelboard" or "Enclosed Panelboard." The product name may include the wording "Suitable for Use as Service Equipment," where appropriate. The product name "Enclosed Panelboard" covers both the panel and the enclosure with which it is provided.

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PANELBOARDS, LIGHT AND POWER FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QFKR7)

USE

This category covers manually operable, air-break-type enclosed panelboards employing circuit breakers having automatic overload protection.

These enclosed panelboards are intended for lighting and low-capacity power distribution.

These panelboards are for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors.

Each marking is independent of any marking on the terminal connectors and is on a wiring diagram or other readily visible location.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Enclosed Panelboard for Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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PARTS CLEANERS CERTIFIED FOR CANADA (QGDS7)

USE

This category covers parts cleaners, which are units intended for use with solvents and water-based cleaning solutions, as indicated in the individual certifications. Water-based cleaning solutions are considered to be noncombustible, alkaline (pH of more than 7) liquids in their unused state.

Parts cleaners with electric components are intended only for use with fluids having a flash point not less than 60°C (140°F) as indicated in the individual certifications. Parts cleaners for use with fluids having a flash point less than 60°C (140°F), which results in the generation of a hazardous (classified) location in and around the equipment, have been investigated accordingly.

REBUILT PRODUCTS

This category also covers parts cleaners that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt parts cleaners are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt parts cleaners are subject to the same requirements as new parts cleaners.

FACTORS NOT INVESTIGATED

The physiological effects of the cleaning solution in any form have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Parts Cleaner" or "Parts Washer." The product name may be preceded by "Section of" and is followed by the statement, as appropriate, "Consisting of sink (or as appropriate) assembly Part No. (Cat. No., etc.) and a control (or as appropriate) assembly Part No. (Cat. No., etc.)."

For rebuilt products, the word "Rebuilt," "Renovated" or "Reconditioned" precedes the product name.

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PASSENGER BOARDING BRIDGES CERTIFIED FOR CANADA (QGLA7)

USE AND INSTALLATION

This category covers passenger boarding bridges intended to be installed at airport terminals. This equipment is for loading and unloading of aircraft passengers.

Passenger boarding bridges are assemblies of two or more component sections. These sections may include, but are not limited to, a rotunda, rotunda support, tunnel, rotating cab and driver or prime mover. The rotunda provides for the connection of the bridge to the airport terminal building. The cab provides for the connection of the bridge to the aircraft. The tunnel may consist of one or more sections having a telescoping construction to facilitate outward movement of the bridge to meet the aircraft. The driver or prime mover consists of one or more motors and drive train, which provide for proper positioning of the bridge to accommodate different types of aircraft and aircraft parking configurations. Bridges are provided with one or more services for connection to utility power. Power is supplied throughout the bridge by S- or SJ-type cable suitable for outdoor use and wire protected by rigid conduit with appropriate fittings or appropriate raceway. Electrical equipment within the bridge may include industrial control panels, disconnect switches, limit switches, proximity switches, luminaires, light switches, GFCI receptacles, alarms and smoke detectors. Bridges may be provided with optional equipment such as an air conditioner and power supply for the aircraft when the aircraft is parked. This equipment is normally attached to the underside of the bridge.

Bridges are completely assembled at the factory for inspection and functionality testing prior to shipping. Bridges are disassembled, shipped in sections, reassembled at the installation site and retested for functionality. As part of disassembly the air handler, aircraft power unit, and rotunda support may be removed. Bridges are provided with various control, monitoring, signaling and alarm devices to prevent movement of the bridge that would result in damage to the bridge, aircraft or airport structures and alert personnel in the vicinity of the bridge that bridge movement is imminent.

This category also covers accessories for passenger boarding bridges intended to be installed at gate areas of airport terminals. These accessories may be installed on or remote from the passenger boarding bridge. In either case they are associated with the operation of the passenger boarding bridge. The accessories include, but are not limited to, management systems for air-handling hoses, air-handling units, aircraft power units, and control, monitoring, signaling and alarm devices to regulate movement of the bridge.

This equipment is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14 (2010), ''Industrial Control Equipment,'' and CAN/CSA-C22.2 No. 247 (1992), ''Operators and Systems of Doors, Gates, Draperies and Louvres.''

The basic standard used to investigate passenger boarding bridge accessories in this category is CSA-C22.2 No. 14 (2010).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Passenger Boarding Bridge'' or ''Passenger Boarding Bridge Accessory.''

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PERSONNEL ELECTROSTATIC CONTROL DEVICES CERTIFIED FOR CANADA (QGOE7)

USE

This category covers wrist straps, ground heel straps, etc., designed to be worn by personnel to bleed off electrostatic-charge buildup on the wearer's body. These devices are not intended to evaluate the electrostatic-discharge performance.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in UL Subject 2329, ''Outline of Investigation for Personnel Electrostatic Control Devices.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Electrostatic Control Device'' or ''Static Control Device.''

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PERSONAL GROOMING APPLIANCES CERTIFIED FOR CANADA (QGRQ7)

This category covers cosmetic and grooming appliances and related equipment for use in beauty salons, barber shops, and residences. Appliances include barber chairs, curling irons, hair conditioning machines, hair dryers, manicure sets, permanent wave machines, shampoo machines, styling dryers, and untanglers (detanglers). These units are identified as to household or commercial use in the individual Listings.

The physiological effects of the medicaments or cosmetic materials that may be employed in association with these appliances have not been investigated.

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PERSONAL GROOMING APPLIANCES, COMMERCIAL CERTIFIED FOR CANADA (QGRT7)

GENERAL

This category covers cosmetic and grooming appliances intended for commercial use in beauty salons, barber shops, nail care centers, and cosmetic studios. Appliances include hair dryers, barber chairs, wig and brush dryers, facial therapy units, hair spray systems, permanent wave machines, manicure sets, curling irons, cosmetology equipment, and hair conditioning machines.

FACTORS NOT INVESTIGATED

The physiological effects of the medicaments or cosmetic materials which may be employed in association with these appliances have not been investigated.

PRODUCT MARKINGS

Grooming appliances with air discharge, curling irons, hair crimping and hair straightening personal grooming products intended for commercial applications are permanently marked with the following marking (or equivalent) as detailed in the individual certification reports: ''WARNING: NOT FOR HOUSEHOLD USE – MAY CAUSE BURNS.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 36, ''Hairdressing Equipment.''

Additional standards that may be used to investigate products in this category in conjunction with CSA-C22.2 No. 36 are:

CSA-C22.2 No. 64, ''Household Cooking and Liquid-Heating Appliances''

CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial)''

Personal Grooming Appliances, Commercial Certified for Canada (QGRT7)−*Continued*

CAN/CSA-C22.2 No. 224, ''Radiant Heaters and Infrared and Ultraviolet Lamp Assemblies for Cosmetic or Hygienic Purposes in Nonmedical Applications''

Additional standards may be applicable based on the features employed.

Alternatively, these products may be investigated to CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Electrical Appliances – Part 1: General Requirements,'' and CAN/CSA-E60335-2-23 (2005), ''Household and Similar Electrical Appliances – Safety – Part 2-23: Particular Requirements for Appliances for Skin or Hair Care.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate product name as shown in the individual Listings.

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PERSONAL GROOMING APPLIANCES, HOUSEHOLD CERTIFIED FOR CANADA (QGRW7)

GENERAL

This category covers cosmetic and grooming appliances and related equipment for use household use. Appliances include curling irons, hair dryers, manicure sets, hair setters, tweezers, facial saunas, styling dryers, and untanglers (detanglers).

FACTORS NOT INVESTIGATED

The physiological effects of the medicaments or cosmetic materials which may be employed in association with these appliances have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 36, ''Hairdressing Equipment.''

Additional standards that may be used to investigate products in this category in conjunction with CSA-C22.2 No. 36 are:

CSA-C22.2 No. 64, ''Household Cooking and Liquid-Heating Appliances''

CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial)''

CAN/CSA-C22.2 No. 224, ''Radiant Heaters and Infrared and Ultraviolet Lamp Assemblies for Cosmetic or Hygienic Purposes in Nonmedical Applications''

Additional standards may be applicable based on the features employed.

Alternatively, these products may be investigated to CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Electrical Appliances – Part 1: General Requirements,'' and CAN/CSA-E60335-2-23 (2005), ''Household and Similar Electrical Appliances – Safety – Part 2-23: Particular Requirements for Appliances for Skin or Hair Care.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate product name as shown in the individual Listings.

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PERSONAL SUN AND HEAT EQUIPMENT CERTIFIED FOR CANADA (QGRX7)

GENERAL

This category covers personal sun and heat equipment of the household and commercial variety, including tanning beds and booths for use in commercial tanning salons, intended for the production of ultraviolet (sun) radiation, infrared (heat) radiation, or both.

Personal Sun and Heat Equipment Certified for Canada (QGRX7)−*Continued*

This category also covers sun equipment provided with UV-A and UV-B fluorescent and/or high-intensity discharge (HID) lamps.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, that may be produced by these lamps have not been investigated.

RELATED PRODUCTS

For sun and heat equipment intended to therapeutic use, see Medical Equipment Certified for Canada (PIDF7).

For sun and heat equipment of the household variety intended for portable use, see Sun and Heat Lamps Certified for Canada (QPDY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' and CAN/CSA-C22.2 No. 224, ''Radiant Heaters and Infrared and Ultraviolet Lamp Assemblies for Cosmetic or Hygienic Purposes in Nonmedical Applications.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Sun Bed,'' ''Tanning Booth'' or ''Heat Unit,'' or other appropriate product name as shown in the individual Listings.

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PERSONAL HYGIENE AND HEALTH CARE APPLIANCES CERTIFIED FOR CANADA (QGRZ7)

GENERAL

This category covers appliances, primarily cord connected, intended for use in households or similar locations, not necessarily under professional supervision, such as toothbrushes, oral irrigation appliances, denture cleaners, hydromassage units, etc.

This category also covers toilet seat assemblies (including bidet seats) containing electrical features, such as heating and water-dispensing components, which are intended to connect to the already-provided plumbing accessories (toilet bowl).

FACTORS NOT INVESTIGATED

The physiological effect of the use of these appliances, beneficial or otherwise, has not been investigated.

RELATED PRODUCTS

Medical and dental equipment intended for professional use is covered under Medical Equipment Certified for Canada (PIDF7).

Other household-related equipment is covered under Personal Grooming Appliances, Commercial Certified for Canada (QGRT7), Personal Grooming Appliances, Household Certified for Canada (QGRW7), Heating Pads, Electric Certified for Canada (MNUV7), Massage and Exercise Machines Certified for Canada (PGXX7) and Personal Sun and Heat Equipment Certified for Canada (QGRX7).

Toilets are covered under Plumbing Accessories Certified for Canada (QMTX7).

Facial saunas are covered under Personal Grooming Appliances, Household Certified for Canada (QGRW7) and Personal Grooming Appliances, Commercial Certified for Canada (QGRT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68 (2009), ''Motor-Operated Appliances (Household and Commercial),'' with relevant requirements from CAN/CSA-C22.2 No. 64 (2010), ''Household Cooking and Liquid-Heating Appliances,'' and/or CAN/CSA-C22.2 No. 224 (1989), ''Radiant Heaters and Infrared and Ultraviolet Lamp Assemblies for Cosmetic or Hygienic Purposes in Nonmedical Applications.''

Additional standards may be applicable based on the features employed. In addition, CSA Technical Information Letter No. C-37, ''Input Ratings for

Cord-Connected Heating and Cooking Appliances, Hairdressing Equipment and Electric Irons for Household Use" (issue date 2-28-05), may also be used as applicable.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Personal Hygiene Appliance" or "Health Care Appliance," or the name of the specific product as shown in the individual Listings.

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PERSONAL PROTECTIVE EQUIPMENT CERTIFIED FOR CANADA (QGSY7)

OCCUPATIONAL FALL RESTRAINTS AND SUSPENSION DEVICES CERTIFIED FOR CANADA (QGTW7)

USE

This category covers the following devices intended for individual worker protection against falls when working in elevated or suspended positions:

- Body belts
- Full-body harnesses
- Connecting components, which include
  - Carabiners
  - D-rings
  - O-rings
  - Self-locking connectors
  - Snap hooks

These products are not intended for recreational use or for fire-fighting operations.

This category does not cover anchorages or anchorage connectors.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is one of the following:

- CAN/CSA-Z259.1 (issue date), "Body Belts and Saddles for Work Positioning and Travel Restraint"
- CAN/CSA-Z259.10 (issue date), "Full Body Harnesses Occupational Products – General Instruction No. 1"
- CAN/CSA-Z259.12 (issue date), "Connecting Components for Personal Fall Arrest Systems"

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BODY BELT
IN ACCORDANCE WITH CAN/CSA-Z259.1-[issue date]
Control No.
or

FULL-BODY HARNESS
IN ACCORDANCE WITH CAN/CSA-Z259.10-[issue date]
Control No.
or

[PRODUCT IDENTITY*]
IN ACCORDANCE WITH CAN/CSA-Z259.12-[issue date]
Control No.

* **CARABINER**, **D-RING**, **O-RING**, **SELF-LOCKING CONNECTOR** or **SNAP HOOK**

*** ***

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Occupational Fall Restraints and Suspension Devices Certified for Canada (QGTW7)–*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

EYE AND FACE PROTECTION CERTIFIED FOR CANADA (QGUU7)

USE

This category covers products intended for eye and face protection for occupational and educational operations or processes involving hazards to the eyes or face. Typical hazards include flying objects and particles, splashing liquids, molten metal, and ultraviolet, visible and infrared radiation, but do not include X-rays, gamma rays, high-energy particulate radiation, radioactive materials, lasers or masers. Products include spectacles, goggles, face shields, and welding helmets, hand shields and hoods.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products (AAME).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA Z94.3 (2007), "Eye and Face Protectors."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Spectacles," "Goggles," "Face Shield," "Welding Helmet," "Welding Hand Shield," "Welding Hood."

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INDUSTRIAL WORKERS' PROTECTIVE APPAREL CERTIFIED FOR CANADA (QGVW7)

Workwear for Protection Against Hydrocarbon Flash Fire Certified for Canada (QGWB7)

USE

This category covers workwear for protection against hydrocarbon flash fire which is intended to provide a minimum degree of protection to the wearer and reduce the severity of injury against unplanned exposure to hydrocarbon flash fire.

This protective clothing is not intended to be used as specialized protective clothing, such as proximity suits, firefighters' protective clothing, and fire-entry clothing; nor is it intended to protect against chemical, radiological, electrical or biological hazards.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CGSB-155.20-(issue date), "Workwear for Protection Against Hydrocarbon Flash Fire."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

WORKWEAR FOR PROTECTION AGAINST
HYDROCARBON FLASH FIRE
IN ACCORDANCE WITH
CAN/CGSB-155.20-[issue date]
Control No.

*** ***

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Workwear for Protection Against Hydrocarbon Flash Fire Certified for Canada (QGWB7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

LEG PROTECTION FOR CHAIN SAW USERS CERTIFIED FOR CANADA (QGWF7)

USE

This category covers protective garments and devices, including aprons, leggings, pants, trousers and chaps. They are intended to be worn by chain-saw users to reduce leg injuries during work with running chain saws. These products incorporate materials and construction methods designed to provide cut-resistance protection to the legs during accidental contact with a running power-saw chain.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/BNQ 1923-45 (1991), ''Leg Protective Device for Chain Saw Users.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

LEG PROTECTIVE DEVICE FOR CHAIN SAW USERS
IN ACCORDANCE WITH THE STANDARD
FOR LEG PROTECTIVE DEVICE FOR CHAIN SAW USERS
CAN/BNQ 1923-450-M91
Control No.
*** ***

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OCCUPATIONAL HEAD PROTECTION CERTIFIED FOR CANADA (QGWR7)

USE

This category covers protective headwear for use by industrial, construction, mining, utility, and forestry workers. This headwear is intended to reduce the forces of impact and penetration and may provide protection from an applied voltage. The headwear is described by impact and penetration types and dielectric class as follows:

TYPE 1 — Headwear intended to provide impact and penetration protection for the crown area of the head only.

TYPE 2 — Headwear intended to provide impact and penetration protection for the crown and lateral areas of the head.

CLASS C — Headwear that does not provide dielectric protection.

CLASS E — Headwear intended to provide protection against an applied voltage up to a maximum of 20,000 V.

CLASS G — Headwear intended to provide protection against an applied voltage up to a maximum of 2,200 V.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-Z94.1, ''Industrial Protective Headwear – Performance, Selection, Care, and Use.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

OCCUPATIONAL HEAD PROTECTION
IN ACCORDANCE WITH CAN/CSA-Z94.1-[issue date]
TYPE +, CLASS ++
Control No.

\+ **1** or **2**
++ **C**, **E** or **G**
*** ***

Occupational Head Protection Certified for Canada (QGWR7)−*Continued*

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PROTECTIVE FOOTWEAR CERTIFIED FOR CANADA (QGWT7)

GENERAL

This category covers products intended for individual occupational protection of the feet.

These products offer the following protection:

- Toe protection (mandatory), Grade 1, 2 or 3, with Grade 1 offering the most protection and Grade 3 the least
- Sole penetration protection (optional)
- Electric shock resistance (optional)
- Static dissipation (optional)

PRODUCT MARKINGS

The grade of toe protection and type of any additional protection provided by these products is permanently marked in a conspicuous location on at least one boot of each pair of footwear.

Footwear with **toe protection only** is marked as follows:

- A UL PROTECTIVE FOOTWEAR label stating the grade of toe protection

Footwear with **sole penetration protection** is marked as follows:

- A UL PROTECTIVE FOOTWEAR label stating the grade of toe protection
- An equilateral triangle incorporating the ''UL CLASSIFIED'' Mark for Canada symbol
- Label size: Equilateral triangle, 1-in. sides
- Color:
  - Black UL Mark for Canada symbol on Green Triangle (Grade 1)
  - Black UL Mark for Canada symbol on Yellow Triangle (Grade 2)
  - Black UL Mark for Canada symbol on Red Triangle (Grade 3)

Footwear with **electric shock resistance (dielectric protection)** is marked as follows:

- A UL PROTECTIVE FOOTWEAR label stating the grade of toe protection
- A rectangular patch on the outside of the right boot with the Omega symbol (Ω) and the ''UL CLASSIFIED'' Mark for Canada symbol
- Label size: 1 in. x 5/8 in.
- Color: Orange UL Mark for Canada symbol and the Omega symbol (Ω) on White Rectangle

Footwear with **static dissipation protection** is marked as follows:

- A UL PROTECTIVE FOOTWEAR label stating the grade of toe protection
- A rectangular patch with the letters ''SD,'' the electrical grounding symbol, and the ''UL CLASSIFIED'' Mark for Canada symbol
- Label size: 1 in. x 5/8 in.
- Color: Green UL Mark for Canada symbol, ''SD'' and the electrical grounding symbol on Fluorescent Yellow Rectangle

In addition to the above markings, one boot from each pair is marked with:

- The name of the certified company
- The size
- The month and year of manufacture

The grade of toe protection and type of any additional protection provided by these products is noted in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-Z195-(issue date), ''Protective Footwear.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products

Protective Footwear Certified for Canada (QGWT7)−*Continued*

includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

PROTECTIVE FOOTWEAR
IN ACCORDANCE WITH THE
STANDARD FOR PROTECTIVE FOOTWEAR
CAN/CSA-Z195-[issue date]
Control No.
*** ***

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EMERGENCY SERVICES PROTECTIVE CLOTHING AND EQUIPMENT CERTIFIED FOR CANADA (QGUY7)

PROTECTIVE CLOTHING AND EQUIPMENT FOR WILDLAND FIRE FIGHTING CERTIFIED FOR CANADA (QGVD7)

USE

This category covers fireline workwear intended to provide a degree of protection against the adverse effects of fire to a fire fighter's body during forest fire fighting. Protective does not mean that a wearer will suffer no burns if exposed to fire while wearing workwear meeting this standard.

Fireline workwear is single-layer protective workwear that covers the body from the neck to the wrists and feet; it may or may not cover the neck. It is intended to be worn as the outermost garment. It does not refer to add-on accessories, such as, but not limited to, a belt, backpack and external harness.

Fireline workwear is not intended to be used as specialized protective clothing such as proximity suits, structural fire fighters' protective clothing, or workwear for protection against hydrocarbon flash fire and fire-entry clothing. It is not intended to provide for protection from chemical, radiological, electrical or biological hazards.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CGSB 155.22-(issue date), "Fireline Workwear for Forest Firefighters."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

PROTECTIVE CLOTHING AND EQUIPMENT
FOR WILDLAND FIREFIGHTING
IN ACCORDANCE WITH CANADIAN GENERAL STANDARDS BOARD
STANDARD CAN/CGSB-155.22-[issue date]
Control No.
*** ***

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FIRE FIGHTERS' PROTECTIVE CLOTHING CERTIFIED FOR CANADA (QGVG7)

USE

This category covers protective clothing intended to protect fire fighters against heat and flame encountered during fires and related life-saving activities.

Fire Fighters' Protective Clothing Certified for Canada (QGVG7)−*Continued*

This protective clothing is not intended for use in aircraft rescue and fire fighting, hazardous material emergencies, or wildland fire fighting, and is not intended for approach, proximity or entry fire exposures.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CGSB-155.1-(issue date), "Firefighters' Protective Clothing for Protection Against Heat and Flame."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FIREFIGHTERS' PROTECTIVE CLOTHING
IN ACCORDANCE WITH THE CANADIAN GENERAL STANDARDS BOARD
STANDARD ON FIREFIGHTERS' PROTECTIVE CLOTHING FOR PROTECTION AGAINST HEAT AND FLAME
CAN/CGSB-155.1-[issue date]
Control No.

The Classification Mark may be abbreviated as follows:

FIREFIGHTERS' PROTECTIVE CLOTHING
IN ACCORDANCE WITH CAN/CGSB-155.1-[issue date]
Control No.
*** ***

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PHONOGRAPHS AND CD PLAYERS, COIN OPERATED CERTIFIED FOR CANADA (QGXW7)

USE

This category covers coin-operated phonographs, compact disc (CD) players and accessories for use on supply circuits in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." This equipment is designed for use in commercial establishments.

Coin-operated phonographs and CD players are intended for the reproduction of music, speech, or other sound utilizing records or compact discs. Each unit has complete reproduction facilities including record selection and playing mechanisms, amplifiers and speakers. Remote record selection and coin-acceptance mechanisms may also be included. These units are intended for indoor use only unless specified otherwise in the individual certifications.

RELATED PRODUCTS

Commercial phonographs that are not coin operated are covered under Commercial Phonographs, Tape-playing and Recording Appliances and Accessories Certified for Canada (AZQW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, "Audio, Video and Similar Electronic Equipment," or CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, "Audio, Video and Similar Electronic Apparatus – Safety Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Coin-operated Phonograph," "Coin-operated CD Player" or "Wall Box," or the name of the specific type of product as shown in the individual Listings.

*** ***

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DISTRIBUTED GENERATION POWER SYSTEMS EQUIPMENT CERTIFIED FOR CANADA (QHWJ7)

BUILDING-INTEGRATED PHOTOVOLTAIC MODULES AND PANELS CERTIFIED FOR CANADA (QHZK7)

USE AND INSTALLATION

This category covers flat-plate building-integrated photovoltaic (BIPV) modules and panels intended for mounting integrally to the structural or protective surfaces of a building. BIPV modules and panels are investigated for one of three primary installation methods: (1) intended to serve as the roof, or as a majority component of the roofing system of a building, (2) intended to serve as part of a structural component of a building, such as a curtain wall, facade, atrium, skylight, etc., or (3) intended to serve as part of a nonstructural component of a building, such as a curtain wall, facade, atrium, skylight, etc., which is applied extant to the primary building structure.

When intended to serve as the roof, or as a majority component of the roofing system of a building, the BIPV module serves as a primary component of the building's fire resistance and waterproofing membrane. These functions have been investigated as appropriate to the extent of those functions served. Standards used in roofing system investigations have been employed as appropriate to the nature of construction and use of the system. Roofing-type BIPV products have been investigated to those roofing standards, as appropriate to their construction and use.

When intended to serve as part of a structural component of a building, such as a curtain wall, facade, atrium, skylight, etc., the BIPV module is assumed to serve as a primary component of the building's exterior surface and is accessible from the interior space of the building. Mechanical control and protection of the system wiring should be provided as required by CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), either applied to the interior of the system or integral to the support structure. BIPV modules intended to be mounted or retained within a metallic support structure have been investigated to CAN/ULC-S107, "Methods of Fire Tests of Roof Coverings," for fire-resistance classification appropriate to the installation requirements (typically Class A). The combination of BIPV modules and the intended support structure should act as structurally reliable building components in terms of both loading and fire resistance.

When intended to serve as part of a nonstructural component of a building, such as a curtain wall, facade, atrium, skylight, etc., the BIPV module is assumed not to serve as a primary component of the building's exterior surface and is not accessible from the interior space of the building. Mechanical control and protection of the system wiring should be provided as required for structural BIPV systems, and the intended support structure should act as structurally reliable control of the module system alone, as required in ULC/ORD-C1703, "Flat-Plate Photovoltaic Modules and Panels."

In either the structural or nonstructural curtain wall, facade, atrium, skylight, etc. installation mode, the BIPV panel may be identified to be suitable for use with specific UL-certified BIPV mounting systems covered under Building-integrated Photovoltaic Mounting Systems Certified for Canada (QHZQ7).

The modules and panels are marked with manufacturer and model identification. The wiring system indicates the proper terminal polarity. The installation instructions supplied provides all required electrical data, such as voltages, currents, power ratings, maximum series overcurrent device rating, and minimum acceptable diode bypassing (if needed) and appropriate means of connection between the modules and between the module array and the load, in accordance with the CEC.

Authorities Having Jurisdiction should be consulted as to conformance with applicable building codes including the fire-resistance classification required.

FLAME CLASSES

When applicable, BIPV modules and panels intended for installation as a roofing system are marked "Class A," "Class B" or "Class C" to denote their resistance to external fire exposure. Modules and panels that are not installed as roofing systems are identified with respect to their fundamental resistance to external fire exposure, or are marked "Not Fire Rated."

RELATED PRODUCTS

Framed PV modules or panels that include a mounting means as part of the product and are not intended to be installed into or as part of the building surface or structure are covered under Photovoltaic Modules and Panels Certified for Canada (QIGU7).

Building-integrated Photovoltaic Modules and Panels Certified for Canada (QHZK7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Building Materials Certified for Canada (AABM7) and Roofing Materials and Systems Certified for Canada (AARM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1703, "Flat-Plate Photovoltaic Modules and Panels."

In addition, CAN/ULC-S107, "Methods of Fire Tests of Roof Coverings," is used to determine the module's resistance to external fire exposure for modules marked Class A, B or C.

Some products covered under this category have also been investigated to one or more of the following design qualification standards:

IEC 61215, "Crystalline Silicon Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval"
EN 61215, "Crystalline Silicon Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval"
IEC 61646, "Thin-Film Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval"
EN 61646, "Thin-Film Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval"
IEC 61730-1, "Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction," and IEC 61730-2, "Photovoltaic (PV) Module Safety Qualification – Part 2: Requirements for Testing"
EN 61730-1, "Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction," and EN 61730-2, "Photovoltaic (PV) Module Safety Qualification – Part 2: Requirements for Testing"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "BIPV Module," "BIPV Photovoltaic Panel," "BIPV Roofing Product," "BIPV Module for Use with Classified Structural Support Systems," or other appropriate product name as shown in the individual Listings.

Combination Listing/Classification Mark — A Listing Mark combined with a Classification Mark is provided on products that have additionally been investigated to IEC and/or EN design qualification standards. The combined Listing/Classification Mark consists of the Listing Mark elements detailed above and the following marking: "ALSO CLASSIFIED IN ACCORDANCE WITH *," where "*" is one or more of the following:

IEC 61215-(issue date)
EN 61215-(issue date)
IEC 61646-(issue date)
EN 61646-(issue date)
IEC 61730-1-(issue date) and IEC 61730-2-(issue date)
EN 61730-1-(issue date) and EN 61730-2-(issue date)

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BUILDING-INTEGRATED PHOTOVOLTAIC MOUNTING SYSTEMS CERTIFIED FOR CANADA (QHZQ7)

USE AND INSTALLATION

This category covers building-integrated photovoltaic (BIPV) mounting systems intended for use with specific certified BIPV modules and panels (see Building-integrated Photovoltaic Modules and Panels Certified for Canada [QHZK7]) that have been investigated for mounting integral to the structure of a building. The systems have been investigated for electric shock and fire hazards only.

Installation of BIPV modules and mounting systems integral to or in addition to a building's roof system may adversely affect the roof-covering materials' resistance to external fire exposure if the module and mounting system combination has a lesser or no fire-resistance rating. Roof-covering materials will not be adversely affected when the modules and mounting system have an equal or greater fire-resistance rating than the roof-covering material.

The installation of these BIPV mounting systems and related modules or panels is intended to be in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," in addition to any applicable building codes.

Authorities Having Jurisdiction should be consulted as to conformance with applicable building codes.

Building-integrated Photovoltaic Mounting Systems Certified for Canada (QHZQ7)−*Continued*

FLAME CLASSES

When applicable, BIPV modules and mounting systems intended for installation as part of a roof are marked "Class A," "Class B" or "Class C" to denote their resistance to external fire exposure. Modules, panels and mounting systems that have not been identified with respect to their resistance to external fire exposure are marked "Not Fire Rated." For significance of external fire exposure classes, see Prepared Roof-covering Materials, Formed or Molded Metal, Fiber-Cement, Plastic or Fire-retardant-treated Wood Certified for Canada (TFXX7) and Roofing Systems Certified for Canada (TGFU7).

RELATED PRODUCTS

Rack-mounted PV modules and panels that include an integral mounting means not intended to be installed into or as part of the building structure or facade are covered under Photovoltaic Modules and Panels Certified for Canada (QIGU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Building Materials Certified for Canada (AABM7) and Roofing Materials Certified for Canada (AARM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1703, "Flat-Plate Photovoltaic Modules and Panels."

BIPV modules and mounting systems integral to or in addition to a building's roof system are additionally investigated to CAN/ULC-S107, "Methods of Fire Tests of Roof Coverings," and may be certified for degree of wind resistance to CSA-A123.5 (2005), "Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules," as appropriate to the nature of construction and installation.

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME*]
AS TO RISK OF ELECTRIC SHOCK AND FIRE HAZARDS ONLY
+
Control No.

* **BUILDING-INTEGRATED PHOTOVOLTAIC MOUNTING SYSTEM** (or **BIPV MOUNTING SYSTEM**)

\+ For products additionally investigated for resistance to external fire exposure, the Classification Mark includes the words **CLASS A**, **CLASS B** or **CLASS C**, as appropriate.

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PHOTOVOLTAIC CHARGE CONTROLLERS CERTIFIED FOR CANADA (QIBP7)

USE AND INSTALLATION

This category covers permanently connected photovoltaic charge controllers that control the state of charge of storage batteries used in photovoltaic power systems.

These photovoltaic charge controllers are rated 600 V dc or less and are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These products include photovoltaic charge controller subassemblies for field installation in the terminal compartment of a photovoltaic module, in accordance with the instructions supplied with the subassembly. The markings identify the modules in which the subassemblies may be installed. The modules and subassemblies are products of the same manufacturer.

Controllers identified with an enclosure type designation or as "Rain tight" or "Rainproof" are intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product

Photovoltaic Charge Controllers Certified for Canada (QIBP7)−*Continued*

name "Photovoltaic Charge Controller" or "Photovoltaic Charge Controller Subassembly," or other appropriate product name as shown in the individual Listings.

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PHOTOVOLTAIC MODULES AND PANELS CERTIFIED FOR CANADA (QIGU7)

USE AND INSTALLATION

This category covers flat-plate photovoltaic modules and panels.

These modules and panels are intended for mounting on buildings or on ground-supported frames. Roof-mounted modules or panels are investigated for one of three mounting methods: (1) integral to the roof of a building, (2) directly on a building's roof, or (3) on a rack with a space above the roof surface.

Photovoltaic modules and panels are intended to be connected to electrical loads, controllers, or to power conditioning units which convert the dc power, the modules or panels generate to other types of power compatible with the intended loads. In addition to their voltage, current, and power ratings, modules and panels are marked to indicate terminal polarity, maximum series overcurrent device rating, and minimum acceptable diode bypassing (if needed). Installation of the modules and panels, including connection between the modules and the panels and the load, power conditioning unit or controller is intended to be in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Authorities Having Jurisdiction should be consulted as to conformance with applicable building codes.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1703, "Flat-Plate Photovoltaic Modules and Panels." In addition, CAN/ULC-S107, "Methods of Fire Tests of Roof Coverings," is used to determine the module's resistance to external fire exposure for modules marked Class A, B or C.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Photovoltaic Module" or "Photovoltaic Panel."

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PHOTOVOLTAIC MODULES AND PANELS, REMANUFACTURED CERTIFIED FOR CANADA (QIGZ7)

USE AND INSTALLATION

This category covers remanufactured flat-plate photovoltaic modules and panels intended for mounting on buildings or on ground-supported frames. Remanufactured flat-plate photovoltaic modules and panels are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Remanufactured flat-plate photovoltaic modules and panels are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Remanufactured flat-plate photovoltaic modules and panels are subject to the same requirements as new remanufactured flat-plate photovoltaic modules and panels.

Roof-mounted modules or panels are investigated for one of three mounting methods: (1) integral to the roof of a building, (2) directly on a building's roof, or (3) on a rack with a space above the roof surface.

When mounted integral to a building's roof, the module serves as the waterproof membrane. Direct-mounted panels are placed upon the building's waterproof membrane (shingles or the like). Rack-mounted styles are spaced away from the building's roof member. Rack-mounted styles may also be installed separate from buildings.

Photovoltaic Modules and Panels, Remanufactured Certified for Canada (QIGZ7)−*Continued*

Installation of modules on or integral to a building's roof system may adversely affect the roof covering materials' resistance to external fire exposure if the module has a lesser or no fire-resistance rating. Roof-covering materials will not be adversely affected when the modules have an equal or greater fire-resistance rating than the roof-covering material.

Remanufactured photovoltaic modules and panels are intended to be connected to electrical loads, controllers, or to static inverters that convert the dc power the modules or panels generate to other types of power compatible with the intended loads. In addition to their voltage, current and power ratings, modules and panels are marked to indicate terminal polarity, maximum series overcurrent device rating, and minimum acceptable diode bypassing (if needed). Installation of the modules and panels, including connection between the modules and the panels and the load, static inverters or controller is intended to be in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Authorities Having Jurisdiction should be consulted as to conformance with applicable building codes including the class of roof covering.

FLAME CLASSES

When applicable, modules and panels are marked ''Class A,'' ''Class B'' or ''Class C'' to denote their resistance to external fire exposure. Modules and panels that have not been identified with respect to their resistance to external fire exposure are marked ''Not Fire Rated.'' For significance of external fire exposure classes, see Roofing Systems Certified for Canada (TGFU7).

RELATED PRODUCTS

Additional certifications of flat-plate photovoltaic modules and panels are covered under Photovoltaic Modules and Panels Certified for Canada (QIGU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1703, ''Flat-Plate Photovoltaic Modules and Panels.'' In addition, CAN/ULC-S107, ''Methods of Fire Tests of Roof Coverings,'' is used to determine the module's resistance to external fire exposure for modules marked Class A, B or C.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Remanufactured Photovoltaic Module'' or ''Remanufactured Photovoltaic Panel.''

* *

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PHOTOVOLTAIC MODULES AND PANELS WITH SYSTEM VOLTAGE RATINGS OVER 600 VOLTS CERTIFIED FOR CANADA (QIIA7)

USE AND INSTALLATION

This category covers flat-plate photovoltaic modules and panels with system voltage ratings above 600 V up to and including 1000 V.

These modules and panels are intended for mounting on ground-supported frames, and may be mounted on a building roof when the maximum system voltage of the photovoltaic installation is limited to 600 V. Roof-mounted modules and panels are investigated for one of three mounting methods: (1) integral to the roof of a building, (2) directly on a building's roof, or (3) on a rack with a space above the roof surface.

When mounted integral to a building's roof, the module serves as the waterproof membrane. Direct-mounted panels are placed upon the building's waterproof membrane (shingles or the like). Rack-mounted styles are spaced away from the building's roof member. Rack-mounted styles may also be installed separate from buildings.

Installation of modules on or integral to a building's roof system may or may not adversely affect the roof-covering materials' resistance to external fire exposure if the module has a lesser or no fire-resistance rating. Roof-covering materials will not be adversely affected when the modules have an equal or greater fire-resistance rating than the roof-covering material.

Photovoltaic modules and panels are intended to be connected to electrical loads, controllers, or to static inverters that convert the dc power the modules or panels generate to other types of power compatible with the

Photovoltaic Modules and Panels with System Voltage Ratings Over 600 Volts Certified for Canada (QIIA7)−*Continued*

intended loads. In addition to their voltage, current and power ratings, modules and panels are marked to indicate terminal polarity, maximum series overcurrent device rating, and minimum acceptable diode bypassing (if needed). Installation of the modules and panels, including connection between the modules and the panels and the load, static inverters or controller is intended to be in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Authorities Having Jurisdiction should be consulted as to conformance with applicable building codes including the class of roof covering.

FLAME CLASSES

When applicable, modules and panels are marked ''Class A,'' ''Class B'' or ''Class C'' to denote their classification for resistance to external fire exposure. Modules and panels that have not been identified with respect to their resistance to external fire exposure are marked ''Not Fire Rated.'' For significance of external fire exposure classes, see Roof-covering Materials Certified for Canada (TEVT7) and Roofing Systems Certified for Canada (TGFU7).

RELATED PRODUCTS

Modules and panels with maximum system voltage ratings of 600 V or less are covered under Photovoltaic Modules and Panels Certified for Canada (QIGU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1703, ''Flat-Plate Photovoltaic Modules and Panels.''

In addition, CAN/ULC-S107, ''Methods of Fire Tests of Roof Coverings,'' is used to determine the module's resistance to external fire exposure for modules marked Class A, B or C.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Photovoltaic Module Over 600 Volts'' or ''Photovoltaic Panel Over 600 Volts.''

For products additionally investigated for resistance to external fire exposure, the Listing Mark includes the words **Class A**, **Class B** or **Class C**, as appropriate.

* *

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DISTRIBUTED GENERATION POWER SYSTEMS ACCESSORY EQUIPMENT CERTIFIED FOR CANADA (QIIO7)

GENERAL

This category covers actuators, blocking diodes, conduit boxes, photovoltaic combiner boxes, controllers (control boxes), communication modules, disconnects, distribution panels and transition boxes.

This equipment is intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

RELATED PRODUCTS

See Static Inverters and Converters for Use in Independent Power Systems Certified for Canada (QIKH7) and Photovoltaic Modules and Panels Certified for Canada (QIGU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1 (2001), ''General Use Power Supplies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Distributed Generation Utility Interconnection Controller,'' ''Photovoltaic System Ground Fault Detector Interrupter,'' ''Photovoltaic System Transition Box,'' ''Photovoltaic Disconnect,'' ''Photovoltaic System Control Box,'' ''Distributed Generation Sys-

Distributed Generation Power Systems Accessory Equipment Certified for Canada (QIIO7)−*Continued*

tem Distribution Panel," "Distributed Generation Interface Module," "Distributed Generation Communications Module," "Photovoltaic Combiner Box," or other appropriate product name as shown in the individual Listings.

* *

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STATIC INVERTERS, CONVERTERS AND ACCESSORIES FOR USE IN INDEPENDENT POWER SYSTEMS CERTIFIED FOR CANADA (QIKH7)

USE AND INSTALLATION

This category covers permanently connected inverters and converters for use in electric power systems. Inverters are devices that change DC power to AC power. Converters are devices that accept AC or DC power input and convert it to another form of AC or DC power for direct utilization by a load or accumulation in an energy storage system (batteries, capacitors, etc.). Electric power systems are defined as facilities that deliver electric power to a load. Devices covered in this category are classed as Utility Interactive, Stand-alone or Multimode. Utility Interactive devices operate in parallel with the utility grid. Stand-alone devices are intended to operate independent of the utility grid. Multimode devices can operate as both or either Stand-alone (utility independent) or Utility Interactive devices. Optional accessories intended for use with these units are also covered under this category.

These products may contain energy storage devices and associated charge controllers.

These devices are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

The devices may be connected to different types and combinations of distributed generation (DG) sources: generator sets, photovoltaic cells, fuel cells, wind and microturbines or other sources as specified in the manufacturer's installation instructions.

Some devices in this category must be installed and operated with an external transformer. Such devices are provided with markings and instructions to indicate the type of transformer required.

These products may require external output overcurrent protection, which will be specified in product markings and installation instructions. The products require external overcurrent protection to be sized at 125% of the product output current rating unless otherwise specified.

These products may require that overcurrent protection be provided in the source circuits. These protection ratings will be specified in the product installation instructions.

Devices containing charge controllers are provided with instructions to indicate the type of battery for which they are intended.

Units suitable for use with certified field-installed accessories are marked to identify the specific accessories that may be used.

For units that are shipped in multiple sections where the end product requires that all of the sections be included and assembled to make a complete certified product, the sections include the same end-product Certification Mark and are differentiated by section number as specified under **UL MARK** below.

For units that are shipped in multiple sections consisting of a complete end product and associated optional accessories investigated for use with the complete certified end product, the complete end product has a single Certification Mark and the accessory(ies) are labeled as specified under **UL MARK** below with one of the applicable accessory markings.

SURGE TESTING

These products are investigated to surge categories for the Ring Wave and Combination Wave Surge Tests in IEEE C62.41.2 (2002), "Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and Less) AC Power Circuits." These particular surge waveforms that are applied to the DG equipment are based upon distance between the DG equipment and the service entrance equipment. These location categories have associated peak values of voltage and current for the standard surge-testing waveforms as noted below. A manufacturer may also choose to test at a custom value for the Ring Wave and Combination Wave. These values are stated in the individual certifications for the product tested.

STANDARD WAVEFORM PEAK VALUES

Surge Category	Ring Wave	Combination Wave
A	6 kV/0.20 kA	N/A

Static Inverters, Converters and Accessories for Use in Independent Power Systems Certified for Canada (QIKH7)−*Continued*

STANDARD WAVEFORM PEAK VALUES

Surge Category	Ring Wave	Combination Wave
B	6 kV/0.50 kA	6 kV/3 kA
C	N/A	20 kV/10 kA

The standard surge-testing waveforms are as follows:

- "Standard 1.2/50 us - 8/20 us Combination Wave"
- "Standard 0.5 us - 100 kHz Ring Wave"

Refer to IEEE C62.41.2 (2002) for additional details on standard wave parameters and tolerances.

CODES

The following summarizes and defines the codes shown in the individual certifications.

Source Type	ST
Fuel Cell	FC
Photovoltaic	PV
Microturbine	MT
Wind Turbine	WT
Hydro Turbine	HT
Battery	B
Gen Set	GS
Other	O

Output Type	OT
Utility Interactive	UI
Stand-alone	SA
Multimode Open Transition	MMOT
Multimode Closed Transition	MMCT
Charger	C

Utility Testing	UT
Has been investigated for anti-islanding	AI
Has been investigated for over/under voltage and frequency fluctuations with fixed trip limits	FTL
Has been investigated for over/under voltage and frequency fluctuations with adjustable trip limits	ATL
Has not been investigated for anti-islanding and may need external protection	NAI
Has not been investigated for over/under voltage and frequency fluctuations and may need external protection	NTL
Has been investigated for reverse current protection at the point of common coupling (PCC)	RCP

Isolation	Isol
Internal Transformer	IT
Transformerless	TL
External Transformer Specific (*)	ETS
External Transformer Generic (*)	ETG

(*) – See manufacturer's specifications for external transformer ratings, construction and configuration.

Input/Output Power Configuration	POC
Single Phase 2-Wire	S2
Single Phase 3-Wire	S3
Three Phase 3-Wire	T3
Three Phase 4-Wire	T4

Maximum Overcurrent Protection	MOCP
Current rating in amps (example: 20 A)	20
Not applicable for Stand-alone units	NA

Enclosure Environmental Rating	ER
12	12
3	3
4	4
etc.	

Static Inverters, Converters and Accessories for Use in Independent Power Systems Certified for Canada (QIKH7)−*Continued*

Maximum Ambient of Continuous Operation at Full Rated Power	**MA**
Ambient rating in degrees Celsius (example: 40C)	40

Maximum Ambient of Operation	**MA**
Ambient rating in degrees Celsius (example: 60C)	60

FIRMWARE VERSION AND CHECKSUM

Version Number – Identification number of the software elements that specifies the investigated software version and current release.

Checksum or Unique Identifier – A unique identifier stored in nonvolatile memory computed as a function of the critical and supervisory sections of the software.

RELATED PRODUCTS

Power converters and inverters intended for use in recreational or land vehicles and the like are covered under Power Converters/Inverters and Power Converter/Inverter Systems Certified for Canada (QPPY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1 (2001), "General Use Power Supplies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product designation. The product designation is the combination of the specific DG source and the type of inverter or converter product. Acceptable product designations include:

"Fuel Cell Multimode Inverter"
"Fuel Cell Stand-alone Inverter"
"Fuel Cell Utility Interactive Inverter"
"Microturbine Multimode Inverter"
"Microturbine Stand-alone Inverter"
"Microturbine Utility Interactive Inverter"
"Photovoltaic Multimode Inverter"
"Photovoltaic Stand-alone Inverter"
"Photovoltaic Utility Interactive Inverter"
"Wind Turbine Multimode Inverter"
"Wind Turbine Stand-alone Inverter"
"Wind Turbine Utility Interactive Inverter"
(or equivalent)

The product designation for accessories is one of the product designations noted above, preceded by the words "Accessory for."

For multi-piece units, the Listing Mark appears on each outside enclosure section constituting a complete inverter assembly eligible for Listing. The Listing Mark covers only the enclosure section to which it is affixed; it does not cover other enclosure sections included in the assembly. Each enclosure section of a Listed inverter assembly is provided with a "Section _____ of _____" marking, where the second blank indicates the total number of enclosure sections contained in the Listed inverter assembly and the first blank indicates the respective enclosure section number bearing the UL Mark.

If the source type does not appear in the product designation it must be indicated on the product as a separate marking.

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MOUNTING SYSTEMS, MOUNTING DEVICES, CLAMPING DEVICES AND GROUND LUGS FOR USE WITH PHOTOVOLTAIC MODULES AND PANELS CERTIFIED FOR CANADA (QIMS7)

USE AND INSTALLATION

This category covers photovoltaic (PV) mounting systems, mounting devices, clamping devices (which may be for bonding and/or mechanical loading) and ground lugs intended for use with specific PV modules and panels and specified module frames and mounting structures as identified in the individual Listings. These systems and devices are investigated for one of two installation types: (1) ground mounted, or (2) intended to serve as part of a nonstructural component of a building, such as a stand-alone system on a building, curtain wall, facade, atrium, skylight, etc., which is applied extant to the primary building structure. Both mounting systems and clamping devices may be investigated for mechanical mounting alone, or mechanical mounting and ground bonding as identified in the individual Listings. Ground lugs may be investigated for use with specific PV modules, specific PV module frames, or specific mounting-system rails.

Authorities Having Jurisdiction should be consulted as to conformance with applicable building codes, including the class of roof covering.

Mounting Systems, Mounting Devices, Clamping Devices and Ground Lugs for Use with Photovoltaic Modules and Panels Certified for Canada (QIMS7)−*Continued*

RELATED PRODUCTS

PV modules and panels are covered under Photovoltaic Modules and Panels Certified for Canada (QIGU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1703, "Flat-Plate Photovoltaic Modules and Panels."

Ground lugs are additionally investigated to CSA-C22.2 No. 41 (2007), "Grounding and Bonding Equipment."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Photovoltaic Mounting System," "Photovoltaic Module Clamping Device," "Photovoltaic Mounting Device," "Photovoltaic Bonding Device," "Photovoltaic Mounting and Bonding Device" or "Photovoltaic Ground Lug." The word "Photovoltaic" may be abbreviated "PV."

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PHOTOGRAPHIC EQUIPMENT CERTIFIED FOR CANADA (QINT7)

GENERAL

This category covers photographic equipment and accessories investigated in accordance with requirements applicable in Canada, and includes various equipment, such as photographic flash units, chargers for photographic flash units, motorized projection screens, photographic equipment controllers and interconnect devices, film editors, photographic enlargers, power supplies for photographic accessories, vacuum pumps for use with printing frames, and photographic print processors, all cord-and-plug connected.

This category also covers photographic developing and reproduction equipment, generally of a commercial nature, including photocopying equipment, enlargers, photo printing equipment, and printers; equipment may be cord connected or permanently connected.

This category also covers accessories for field installation on photographic equipment as identified on the products or the installation instructions.

REBUILT PRODUCTS

This category also covers photographic equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt photographic equipment is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt photographic equipment is subject to the same requirements as new photographic equipment.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 118, "Construction and Test of Picture Machines and Appliances," or CAN/CSA-C22.2 No. 60950 or 60950-1, "Safety of Information Technology Equipment," or CAN/CSA-E60335-2-56, "Safety of Household and Similar Electrical Appliances – Part 2: Particular Requirements for Projectors and Similar Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Photographic Equipment,'' or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word ''Rebuilt,'' ''Refurbished'' or ''Remanufactured'' precedes the product name.

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PIN-AND-SLEEVE-TYPE PLUGS, RECEPTACLES AND CABLE CONNECTORS CERTIFIED FOR CANADA (QLGD7)

RATINGS

Pin-and-sleeve-type plugs, receptacles and cable connectors are rated 600 V or less, ac or dc, and in amperes. Devices intended for use with motor loads are identified by a horsepower rating. Devices not intended for current interruption are marked ''NOT FOR INTERRUPTING CURRENT,'' or with an equivalent statement.

Devices rated 250 V are tested on circuits involving a nominal potential to ground of 125 V. Devices having other voltage ratings are tested on circuits involving full-rated potential to ground, except for multiphase-rated devices, which are tested on circuits consistent with their voltage ratings, e.g., a 120/208 V, 3-phase device is tested on a circuit involving a potential to ground of 120 V.

GROUNDING

Devices having a terminal identified by a green-colored finish or by the word ''green'' are grounding types. The pin or contact member connected to this terminal is for equipment grounding only.

* *

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ATTACHMENT PLUGS, PIN-AND-SLEEVE TYPE CERTIFIED FOR CANADA (QLHN7)

GENERAL

This category covers pin-and-sleeve-type attachment-plug bodies, attachment plugs with and without fuses, and cable connectors.

The terminations of these devices are intended for use with flexible cord or cable having copper conductors. The ampacity of the flexible cord or cable is based on Table 12 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Unless the product is marked with both the size and temperature rating of the flexible cord or cable to be used, the termination provisions are based on the use of 60°C flexible cord or cable.

This category does not cover devices to be molded on flexible cord or cable, unassembled devices to be factory assembled to flexible cord or cable, general use, special use, or locking type attachment plugs and/or cord connectors.

PRODUCT MARKINGS

These devices are marked as follows:

1. Listee's name or identification on device and carton
2. Catalog number or equivalent on device or carton
3. Complete electrical rating
4. Terminal identification by color or otherwise
5. Date code or equivalent
6. Additional markings as required

ADDITIONAL INFORMATION

For additional information, see Pin-and-Sleeve-type Plugs, Receptacles and Cable Connectors Certified or Canada (QLGD7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 182.1, ''Plugs, Receptacles, and Cable Connectors of the Pin and Sleeve Type.''

UL MARK

Attachment Plugs, Pin-and-Sleeve Type Certified for Canada (QLHN7)−*Continued*

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Pin-and-Sleeve Attachment Plug,'' ''Plug'' or ''Connector,'' or other appropriate product name as shown in the individual Listings.

* *

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RECEPTACLES, PIN-AND-SLEEVE TYPE CERTIFIED FOR CANADA (QLIW7)

GENERAL

This category covers pin-and-sleeve-type receptacles and other devices intended for direct connection to wiring systems recognized by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC). This category also covers other pin-and-sleeve-type receptacles, outlet devices and power inlets intended for use in appliances and other equipment.

The terminations of these devices are intended for use with the copper conductors and are marked to indicate the conductor size and temperature rating of all field-installed conductors. Such markings are located where readily visible on the device or in a wiring diagram provided with the device. If no marking is provided, conductor sizes are based on the use of 60°C insulated conductor column for circuits rated 100 A or less, and the use of 75°C insulated conductor column for circuits rated more than 100 A, as specified in Table 2 of the CEC.

Conductors having a temperature rating higher than specified may be used, though not required, if the size of the conductors is determined on the basis of the 60°C ampacity (devices rated 100 A or less) or 75°C ampacity (devices rated over 100 A).

This category does not cover general use, special use, or locking-type receptacles, switched receptacles or current taps.

PRODUCT MARKINGS

These devices are marked as follows:

1. Listee's name or identification on device and carton
2. Catalog number or equivalent on device or carton
3. Complete electrical rating
4. Terminal identification by color or otherwise
5. Date code or equivalent
6. Additional markings as required

ADDITIONAL INFORMATION

For additional information, see Pin-and-Sleeve-type Plugs, Receptacles and Cable Connectors Certified for Canada (QLGD7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 182.1, ''Plugs, Receptacles, and Cable Connectors of the Pin and Sleeve Type.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Pin-and-Sleeve Receptacle,'' ''Receptacle'' or ''Power Inlet,'' or other appropriate product name as shown in the individual Listings.

* *

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PIPE JOINT SEALING COMPOUNDS CERTIFIED FOR CANADA (QLSR7)

USE

This category covers compounds intended for use in joining threaded metal pipe connections in piping systems intended for the containment of alcohol, alcohol fuel blends, natural gas and methane, oxygen, petroleum

distillates (gasoline, kerosene, etc.), propane and butane, steam and water (potable and nonpotable), as indicated in the individual certifications. The maximum pressure for each application is indicated in the individual certifications. Unless indicated otherwise, these products are free from any tendency to heat spontaneously.

These products have also been certified as to their fire hazard. Using the method for classification of the fire hazard of liquids specified in UL 340, "Tests for Comparative Flammability of Liquids," they have been rated on a numerical scale of hazard from 0 to 100 as indicated in the table below.

General Classification	Numerical Classification
Diethyl ether	100
Gasoline	90 to 100
Ethyl alcohol	60 to 70
Kerosene	30 to 40[a]
Paraffin oil	10 to 20[b]
Water or nonflammable	0 or nonflammable

[a] A standard kerosene of 37.8°C (100°F) flash point (closed cup) is rated 30 to 40.
[b] A paraffin oil of 226.7°C (440°F) flash point (closed cup) is rated 10 to 20.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S642, "Compounds and Tapes for Threaded Pipe Joints."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

AS TO FIRE HAZARD. [PRODUCT NAME]
CLASSED @
FOR USE IN DEVICES HANDLING
GASOLINE AND PETROLEUM OILS (MAX PRESS * kPa),
NATURAL GAS (MAX PRESS * kPa),
PROPANE OR BUTANE (MAX PRESS * kPa). (as appropriate)
[HAS SOME TENDENCY TO HEAT SPONTANEOUSLY. (as appropriate)]
Control No.

@ Statement of flammability rating per UL 340
* The pressure specified for the product in the individual Classifications

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PLUMBING ACCESSORIES CERTIFIED FOR CANADA (QMTX7)

USE

This category covers plumbing accessories connected to or used with plumbing in commercial locations or residential occupancies, including lawn sprinklers, electric faucets, shower controls, urinal controls and toilet-flushing systems.

This category also covers toilets, bidets, and combination toilet/bidets.

Products suitable for outdoor use and those for use with heated liquids are so marked.

FACTORS NOT INVESTIGATED

These products have not been investigated with respect to the effect of their use with corrosive liquids or aqueous solutions containing corrosive materials.

RELATED PRODUCTS

Toilet seat assemblies (including bidet seats) containing electrical features, such as heating and water-dispensing components, that connect to separate plumbing features are covered under Personal Hygiene and Health Care Appliances Certified for Canada (QGRZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14 (1991), "Industrial Control Equipment," and CAN/CSA-C22.2 No. 68 (1992), "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Lawn Sprinkler Control" or "Electric Faucet," or other appropriate product name shown in the individual Listings.

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PLUMBING ACCESSORIES FOR RECREATIONAL VEHICLES CERTIFIED FOR CANADA (QNAW7)

USE

This category covers products connected to or used with plumbing in recreational vehicles, including water controls, mechanical valves, electric faucets, toilet-flushing systems, sewage pumps, grinder pumps, chemical-feed pumps, transfer pumps and liquid-circulating pumps.

Products suitable for outdoor use, exposure to road splashing, and for use with hot liquids are so marked.

FACTORS NOT INVESTIGATED

This equipment has not been investigated with respect to the effect of its use with corrosive liquids or aqueous solutions containing corrosive materials, nor for use with drinking water.

RELATED PRODUCTS

Products investigated for use with drinking water are covered under Drinking Water System Components Certified for Canada (FDNP7).

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-Z240 RV Series (1986), "Recreational Vehicles," CSA B125 (1993), "Plumbing Fittings," CSA B45 Series (1994), "Plumbing Fixtures," and CAN/CSA-C22.2 No. 68 (1992), "Motor-Operated Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "RV Sewage Pump" or "RV Electric Faucet," or other appropriate product name as shown in the individual Listings.

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PLUMBING ACCESSORIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QNHV7)

USE AND INSTALLATION

This category covers pump assemblies and controls for use in pumping sewage. Assemblies exposed to sewage have constructions intended to reduce corrosion of enclosure parts and explosion-proof joints. They have not been investigated for use where severe corrosive conditions are likely to be present.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 145 (1986), "Motors and Generators for Use in Hazardous Locations," in addition to the standards referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Control Unit for Use in Hazardous Locations'' or ''Submersible Sump Pump for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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PLUMBING PRODUCTS CERTIFIED FOR CANADA (QNJA7)

These products include plastic plumbing fixtures, plumbing fixture fittings and plumbing pipe and pipe fittings.

The individual product categories include reference to the applicable standards used as the basic standard for the investigation.

PLUMBING FIXTURES CERTIFIED FOR CANADA (QNNA7)

Ceramic Plumbing Fixtures Certified for Canada (QNNK7)

USE AND INSTALLATION

This category covers vitreous and nonvitreous ceramic plumbing fixtures, such as water closets, lavatories, urinals, bidets, bathtubs, shower bases, sinks and drinking fountains, intended for residential or commercial installation in accordance with the ''National Plumbing Code of Canada.''

Unless otherwise indicated in the individual certifications, these fixtures do not include supply fittings.

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA B45.1 (2008), ''Ceramic Plumbing Fixtures.''

Fixtures with integral supply fittings have additionally been investigated to CSA B125.1 (2005), ''Plumbing Supply Fittings.''

Fixtures with integral supply fittings intended for use with potable water have additionally been investigated to NSF/ANSI 61 (2008), ''Drinking Water System Components – Health Effects.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Ceramic Plumbing Fixture,'' ''Ceramic Water Closet,'' ''Ceramic Lavatory,'' ''Ceramic Urinal,'' ''Ceramic Bidet,'' ''Ceramic Bathtub,'' ''Ceramic Shower Base,'' ''Ceramic Sink'' or ''Ceramic Drinking Fountain.''

* *

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Plastic Plumbing Fixtures Certified for Canada (QNNP7)

GENERAL

This category covers plumbing fixtures such as, but not limited to, bathtubs, shower receptors and shower stalls, lavatories, water closets, sinks, bidets and urinals made primarily of plastic. These products are intended for commercial or residential installations in accordance with the applicable model plumbing codes.

PRODUCT MARKINGS

Products investigated to the standards noted below are marked with the certified company's name, trade name, trademark, or other mark known to identify the manufacturer, in a location readily visible after installation. These products are also marked with the date of manufacture. Water closets and each component of a water closet, if the fixture is made up of two

Plastic Plumbing Fixtures Certified for Canada (QNNP7)−*Continued*

or more components, are marked to identify whether they are a low-consumption (6 LPF) or watersaver (13.25 LPF) type. Urinals are marked to indicate whether they are a low-consumption (3.8 LPF) or watersaver (5.7 LPF) type. The marking on the packaging of water closets and urinals includes the manufacturer's recommended working pressure. Special-purpose fixtures that do not comply with the dimensional requirements in the standards are marked with an ''N'' to indicate that they are ''nonstandard'' type fixtures. Plumbing fixtures intended for use only in recreational vehicles are marked with ''RV.''

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-B45.0, ''Plumbing Fixtures,'' and CSA-B45.5, ''Plastic Plumbing Fixtures.''

Products with integral waste fittings have additionally been investigated to ANSI/ASME A112.18.2/CSA B125.2 (2011), ''Plumbing Waste Fittings.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Plastic Plumbing Fixture,'' or other appropriate product name as shown in the individual Listings.

* *

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Enameled Cast Iron and Enameled Steel Plumbing Fixtures Certified for Canada (QNNV7)

GENERAL

This category covers enameled cast iron and enameled steel plumbing fixtures, including bathtubs, drinking fountains and water coolers, sinks and lavatories, and shower receptors (also called shower pans or shower bases), intended for residential or commercial installation in accordance with the ''National Plumbing Code of Canada.''

PRODUCT MARKINGS

Special-purpose fixtures that do not comply with certain dimensional requirements specified in ASME A112.19.1/CSA B45.2, ''Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures,'' are marked with the letter ''N'' to indicate the nonstandard nature of the fixture.

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ASME A112.19.1/CSA B45.2 (2008), ''Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Enameled Cast Iron Fixture,'' ''Enameled Steel Fixture,'' ''Enameled Cast Iron Bathtub,'' ''Enameled Steel Bathtub,'' ''Enameled Cast Iron Shower Receptor,'' ''Enameled Steel Shower Receptor,'' ''Enameled Cast Iron Sink,'' ''Enameled Steel Sink,'' ''Enameled Cast Iron Lavatory'' or ''Enameled Steel Lavatory,'' and the statement ''LISTED IN ACCORDANCE WITH ASME A112.19.1/CSA B45.2.''

* *

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Stainless Steel Plumbing Fixtures Certified for Canada (QNOA7)

USE

This category covers stainless steel plumbing fixtures, such as sinks, bathtubs, shower bases, water closets, lavatories, bidets, urinals, water coolers and drinking fountains intended for installation in accordance with the ''National Plumbing Code of Canada.''

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ASME A112.19.3/CSA B45.4 (2008), ''Stainless Steel Plumbing Fixtures.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Stainless Steel Plumbing Fixture'' or ''Stainless Steel Sink.''

* *

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RELATED PLUMBING PRODUCTS CERTIFIED FOR CANADA (QNOK7)

Ballcocks, Flush Valves, Flushometer Valves and Flushometer Tanks Certified for Canada (QNOP7)

GENERAL

This category covers ballcocks (fill valves), flush valves, flushometer valves and flushometer tanks intended for installation in water closets (toilets) and urinals in accordance with the ''National Plumbing Code of Canada.''

PRODUCT TYPES

Ballcocks (Fill Valves) — Ballcocks (also called anti-siphon-type flush tank fill valves) are water-supply valves installed within water-closet tanks that refill the tank after flushing the water closet.

Flush Valves — Flush valves are valves located in a gravity-flush tank and used to flush a water closet, urinal or tank by discharging water into the fixture.

Flushometer Valves and Tanks — Flushometer valves are devices that are installed on a pressurized water-supply pipe for the purpose of discharging a predetermined quantity of water to a toilet or urinal for flushing purposes. These valves are designed to gradually close in order to minimize water hammer. Flushometer tanks are devices that accomplish the same purpose as flushometer valves; however, they consist of a valve integrated with an accumulator vessel. They are actuated by direct water pressure, which is generated by the accumulator.

PRODUCT MARKINGS

These products are marked with the certified company's name, trade name, trademark, or other mark known to identify the manufacturer. The packaging for all products covered under this category is also marked with the certified company's name, trade name, trademark, or other mark known to identify the manufacturer and the product's model number.

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA B125.3 (2011), ''Plumbing Fittings,'' and ANSI/ASME A112.19.5/CSA B45.15 (2011), ''Flush Valves and Spuds for Water Closets, Urinals, and Tanks.''

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Ballcock,'' ''Fill Valve,'' ''Flush Valve,'' ''Flushometer Tank'' or ''Flushometer Valve.''

* *

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Ballcocks, Flush Valves, Flushometer Valves and Flushometer Tanks Certified for Canada (QNOP7)−*Continued*

General Plumbing and Associated Products Certified for Canada (QNPJ7)

GENERAL

This category covers various plumbing products and fittings intended for commercial or residential installations.

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following:

CSA B45.0 (2002), ''General Requirements for Plumbing Fixtures''
CSA B45.5 (2002), ''Plastic Plumbing Fixtures''
CSA B64.0 (2001), ''Backflow Preventers and Vacuum Breakers''
CSA B64.1.1 (2001), ''Vacuum Breakers, Atmospheric Type (AVB)''
CSA B64.1.2 (2001), ''Vacuum Breakers, Pressure Type (PVB)''
CSA B64.8 (2001), ''Backflow Preventers, Dual Check Valve Type with Intermediate Vent (DuCV)''
CSA B651 (2004), ''Accessible Design for the Built Environment''

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY]
IN ACCORDANCE WITH *
Control No.

* Standard designation and date of standard

* *

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Plumbing-waste Fittings Certified for Canada (QNSW7)

GENERAL

This category covers plumbing-waste fittings of sizes NPS-2 and smaller such as, but not limited to, sink, shower and bath drains, traps, strainers, grey-water diverters, and subdrains for built-up shower pans. These devices are intended to be used and installed in accordance with the ''National Plumbing Code of Canada.''

This category does not cover pipe, tubes, or pipe and tube fittings, such as couplings, elbows, unions or reducers.

PRODUCT AND PACKAGE MARKINGS

These products are marked with the certified company's name, trademark, or other mark to identify the manufacturer in a location visible after installation. Additional markings for specific product types are described in the individual Reports.

The packaging of these products includes the certified company's name and model designation.

RELATED PRODUCTS

Plumbing supply fittings are covered under Plumbing Fixture Fittings Certified for Canada (QNSQ7).

Products certified to a plumbing standard for which no specific category has been established are covered under General Plumbing and Associated Products Certified for Canada (QNPJ7).

Plumbing products certified to an international standard are covered under Plumbing Products Certified in Accordance with International Publications (QNVJ).

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/ASME A112.18.2/CSA B125.2 (2011), ''Plumbing Waste Fittings.''

UL MARK

The Plumbing Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the

Plumbing-waste Fittings Certified for Canada (QNSW7)–*Continued*

product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Plumbing Listing Mark for these products includes the UL Mark for Canada symbol with the word "PLUMBING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Plumbing-waste Fitting."

* *

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PLUMBING FIXTURE FITTINGS CERTIFIED FOR CANADA (QNSQ7)

USE AND INSTALLATION

This category covers plumbing fixture fittings such as, but not limited to, anti-scald shower control valves, hose-connected kitchen spray nozzles, hand-held showers, showerheads, and faucets for sinks, lavatories, bathtubs and showers.

This category does not cover pipe fittings, such as couplings, elbows, unions or reducers.

These devices are intended for installation and use in accordance with the manufacturer's instructions and the "National Plumbing Code of Canada."

Fittings having a primary or secondary outlet that can terminate in non-potable water have been investigated for backflow prevention. This includes faucets with pull-out spouts or hose-connected spray nozzles and hand-held showers.

PRODUCT MARKINGS

These products are marked with the certified company's name, trade name, trademark, or other mark known to identify the manufacturer, in a location readily visible after installation. Fittings for use only in recreational vehicles are marked with "RV." Each showerhead, sink faucet and lavatory faucet and its packaging are marked with the flow rate in L/min. The packaging for all products covered under this category is also marked with the certified company's name and the product's model number.

PACKAGE MARKINGS

The packaging of these products includes the certified company's name and model designation.

RELATED PRODUCTS

Devices and fittings (e.g., lavatory faucets, bar faucets, kitchen sink faucets, supply stops, endpoint control valves) that come into contact with drinking (potable) water and drinking water treatment chemicals have been investigated to NSF/ANSI 61, "Drinking Water System Components – Health Effects."

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Plumbing Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA B125.1 (2005), "Plumbing Supply Fittings," and CSA B125.3 (2005), "Plumbing Fittings."

Other standards that may be used are noted in the individual Reports.

UL MARK

The Plumbing Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Plumbing Listing Mark for these products includes the UL Mark for Canada symbol with the word "PLUMBING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Plumbing Fixture Fitting," or other appropriate product name as shown in the individual Listings.

* *

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LEAD CONTENT VERIFICATION OF PRODUCTS IN CONTACT WITH POTABLE WATER CERTIFIED FOR CANADA (QNVB7)

GENERAL

This category covers drinking water system products, including, but not limited to, components, materials and process media (activated carbon, sand, etc.) that come in contact with, convey or dispense water intended for human consumption by drinking or cooking. The investigation includes determination of compliance with design requirements with respect to lead (Pb), including a weighted average Pb content of not more than 0.25%, and testing of the required materials to verify the Pb content. Products, components and materials covered under this category have been investigated for compliance with NSF/ANSI 372, "Drinking Water System Components – Lead Content."

NSF/ANSI 372 does not cover structural integrity, performance or other health risk aspects such as contaminants that may leach into the water from materials of which the product, component, or material is manufactured. The final acceptance of a product, component, or material is dependent upon its compliance with the requirements and standards that a local, state, federal, or other jurisdictional body has defined for the product or component.

INSTALLATION

These products and components are intended to be installed and used in accordance with applicable codes and regulations. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to connection to water-supply lines.

RELATED PRODUCTS

Products in contact with potable water are also covered under Drinking Water System Components Certified for Canada (FDNP7).

Water coolers, drinking water fountains and remote chillers are also covered under Drinking-water Coolers Certified for Canada (SRJX7).

Faucets and related plumbing fixture fittings are also covered under Plumbing Fixture Fittings Certified for Canada (QNSQ7).

Submersible well pumps are also covered under Pumps, Electrically Operated, Liquid Certified for Canada (REUZ7).

Household freezers are also covered under Household Freezers Certified for Canada (SHMR7).

Refrigerators intended for use in recreational vehicles are also covered under Recreational Vehicle Refrigerators and Freezers Certified for Canada (SKKQ7).

Refrigerators intended for commercial use are also covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

Refrigerators in combination with ranges, microwave ovens and/or sinks are also covered under Kitchen Units, Refrigerated Certified for Canada (SJPT7).

Commercial electric cooking and warming equipment is also covered under Commercial Cooking Appliances Certified for Canada (KNGT7) and Custom-built Food Service Equipment Certified for Canada (KNNS7).

Gas-fired food service equipment is also covered under Gas-fired Food Service Equipment Certified for Canada (LGQX7).

Refrigerators and freezers intended for commercial use are also covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

ADDITIONAL INFORMATION

For additional information, see Plumbing and Associated Products Certified for Canada (AAPP7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is NSF/ANSI 372 (2011), "Drinking Water System Components – Lead Content."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. For process media shipped in bulk quantities, the Classification Mark may appear on a Bill of Lading or a Bulk Shipment Certificate. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*]
IN ACCORDANCE WITH NSF/ANSI 372
Control No.

* **VALVE**, **FAUCET**, or other appropriate product identity as shown in the individual Classifications

The Classification Mark may be abbreviated as follows:

UND. LAB. CLASSIFIED
IN ACCORDANCE WITH NSF/ANSI 372
Control No.
or
UND. LAB. CLFD
IN ACCORDANCE WITH NSF/ANSI 372
Control No.

The words "AS TO ≤ 0.25% Pb ONLY" may be used in lieu of "IN ACCORDANCE WITH NSF/ANSI 372" described above until July 1, 2013. After July 1, 2013, the words "IN ACCORDANCE WITH NSF/ANSI 372" shall be used.

For products that are also Listed or Classified by UL under another category, as an alternative to the complete Classification Mark described above, the words "ALSO CLASSIFIED" (or "ALSO CLFD") and the text "IN ACCORDANCE WITH NSF/ANSI 372" may be used adjacent to the applicable UL Mark.

* *

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PORTABLE ELECTRIC HAND LAMPS CERTIFIED FOR CANADA (QORX7)

GENERAL

This category covers portable electric hand lamps of the incandescent and fluorescent lamp types, rated 125 V, 300 W or less.

Incandescent-type lamps have a length of flexible cord and an attachment plug for connection to a source of supply, an insulating handle, a lamp guard, and provisions for temporary support. Fluorescent-type lamps have a lamp reflector assembly, a length of flexible cord with either an in-line ballast and attachment plug or a direct plug-in type ballast. Both fluorescent and incandescent types are not intended for outdoor use or for use in hazardous locations or above hazardous locations as defined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, "Portable Luminaires," and CSA Technical Information Letter No. B-67, "Interim Certification Requirements for Extension Handlamps."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Hand Lamp" or "Portable Luminaire."

* *

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PORTABLE LIGHTING PRODUCTS CERTIFIED FOR CANADA (QOTU7)

GENERAL

This category covers lampshades, nightlights, light-emitting-diode (LED) nightlights, office furnishing lights, portable cabinet luminaires, portable cabinet LED luminaires, portable luminaire kits and subassemblies, portable luminaires, portable LED luminaires, portable work lights, and sun and heat lamps.

RELATED PRODUCTS

Portable lighting products and associated furnishings investigated for use together are covered under Furnishings, Household and Commercial Certified for Canada (IYQX7).

Portable lighting products used as hand lamps are covered under Portable Electric Hand Lamps Certified for Canada (QORX7).

Portable lighting products intended for seasonal use are covered under Seasonal and Holiday Decorative Product Accessories Certified for Canada (DGWU7), Outfits, Decorative Certified for Canada (DGXW7) or Strings, Decorative Lighting Certified for Canada (DGZZ7).

Portable lighting products intended for use in hazardous (classified) locations are covered under Portable Lighting Units for Use in Hazardous Locations Certified for Canada (QPKX7).

Portable lighting products intended for temporary use (such as at construction sites or car sales lots) are covered under Temporary-lighting Strings Certified for Canada (XBRT7).

Portable lighting products intended for theatrical use are covered under Stage and Studio Luminaires and Connector Strips Certified for Canada (IFDZ7).

PORTABLE CABINET LIGHT-EMITTING-DIODE LUMINAIRES CERTIFIED FOR CANADA (QOVA7)

USE AND INSTALLATION

This category covers surface- and recess-mounted portable cabinet light-emitting-diode (LED) luminaires intended for installation into open or enclosed portable cabinets, such as china hutches, bookcases, bars, consoles, bed headboards, and similar locations.

This category also covers low-voltage portable LED luminaires intended for installation in cabinets provided or marked for use with a power supply of the direct-plug-in or attachment-plug-equipped, cord-connected type.

This category also covers portable cabinet LED luminaire accessories, such as interconnecting cord sets and dimmer and switch assemblies, intended for use with portable cabinet LED luminaires.

These products are not intended for installation in recessed walls or ceilings where the wiring is concealed or passed through openings in the structure.

Portable cabinet LED luminaires have been investigated for mounting in accordance with the clearances marked on the product. Portable cabinet LED luminaires not marked with clearances may be mounted as close to any surface as permitted by the housing, an integral mounting flange, bracket or spacer.

Portable cabinet LED luminaires of all types should not be located less than 30.5 cm (12 in.) apart and should be provided a 13 mm (1/2 in.) minimum clearance between the top and any horizontal surface, unless the instructions indicate a lesser spacing.

Portable cabinet LED luminaires investigated only for surface mounting inside a cabinet and not intended for recessed mounting are marked "SUITABLE FOR SURFACE MOUNTING ONLY."

RELATED PRODUCTS

Portable luminaires intended for installation other than in cabinets are covered under Luminaires, Portable Certified for Canada (QOWZ7).

Portable cabinet luminaires that do not employ LEDs as their primary light source are covered under Portable Cabinet Luminaires Certified for Canada (QOVJ7).

LED luminaires intended for installation in permanently installed cabinets, where the wiring is concealed or passed through openings in the structure, are covered under Light-emitting-diode Surface-mounted Luminaires Certified for Canada (IFAM7) for surface mounting, or Light-emitting-diode Recessed Luminaires Certified for Canada (IFAO7) for recessed mounting.

Low-voltage LED lighting systems intended for installation in permanently installed cabinets, having a remote power source connected to a fixed wiring means, are covered under Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada (IFDR7).

Portable cabinet LED luminaires investigated for use with specific cabinet or display designs are certified together with the cabinet or display as Furnishings, Household and Commercial Certified for Canada (IYQX7).

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 9.0, "General Requirements for Luminaires," in addition to the requirements contained in CSA Technical Information Letter No. B-60, "Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires" (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Cabinet Light-emitting-diode Luminaire" (or "Portable Cabinet LED Luminaire") or "Portable Cabinet Light-emitting-diode Luminaire Accessory" (or "Portable Cabinet LED Luminaire Accessory").

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for

Portable Cabinet Light-emitting-diode Luminaires Certified for Canada (QOVA7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

PORTABLE CABINET LUMINAIRES CERTIFIED FOR CANADA (QOVJ7)

USE AND INSTALLATION

This category covers surface- and recess-mounted portable cabinet luminaires intended for installation into open or enclosed cabinets such as china hutches, bookcases, bars, consoles, bed headboards, and similar locations.

This category also covers low-voltage portable luminaires intended for installation in cabinets provided or marked for use with a power supply of the direct-plug-in or attachment-plug equipped, cord-connected type.

These products are not intended for installation in recessed walls or ceilings where the wiring is concealed or passes through openings in the structure.

Portable cabinet luminaires have been investigated for mounting in accordance with the clearances marked on the product. Portable cabinet luminaires not marked with clearances may be mounted as close to any surface as permitted by the housing, an integral mounting flange, bracket, or spacer.

Portable cabinet luminaires of all types should not be located less than 30.5 cm (12 in.) apart and should be provided a 13 mm (1/2 in.) minimum clearance between the top and any horizontal surface, unless the instructions indicate a lesser spacing.

Portable cabinet luminaires investigated only for surface mounting inside a cabinet and not intended for recessed mounting are marked "SUITABLE FOR SURFACE MOUNTING ONLY."

The individual certifications may include one or more Roman numerals (from II through XIV) that had previously been used to identify certain types of portable luminaires covered under that certification. This identification system is no longer in use, and these Roman numerals can be disregarded.

RELATED PRODUCTS

Portable LED cabinet luminaires are covered under Portable Cabinet Light-emitting-diode Luminaires Certified for Canada (QOVA7).

Portable luminaires intended for installation other than in cabinets are covered under Luminaires, Portable Certified for Canada (QOWZ7) and Light-emitting-diode Luminaires, Portable Certified for Canada (QOVZ7).

Incandescent and fluorescent luminaires intended for installation in permanently installed cabinets, where the wiring is concealed or passes through openings in the structure, are covered under Incandescent Surface-mounted Luminaires Certified for Canada (IEZR7) and Fluorescent Surface-mounted Luminaires Certified for Canada (IEUZ7), respectively.

Low-voltage lighting systems intended for installation in permanently-installed cabinets, having a remote power source connected to a fixed wiring means, are covered under Low-voltage Incandescent Luminaires and Fittings Certified for Canada (IFDR7).

Portable cabinet luminaires investigated for use with specific cabinet or display designs, along with the cabinet or display, are covered under Furnishings, Household and Commercial Certified for Canada (IYQX7).

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 9.0, "General Requirements for Luminaires," in addition to the requirements contained in CSA Technical Information Letter No. B-60, "Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires" (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Cabinet Luminaire" or "Portable Cabinet Light."

* *

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LIGHT-EMITTING-DIODE LUMINAIRES, PORTABLE CERTIFIED FOR CANADA (QOVZ7)

GENERAL

This category covers portable light-emitting-diode (LED) luminaires whose primary function is task or ambient illumination. These products are provided with a flexible cord and an attachment plug for connection to a nominal 120 V, 15 or 20 A branch circuit and intended for use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

This category also covers low-voltage portable LED luminaires provided or marked for use with a power supply of the direct-plug-in or attachment-plug-equipped, cord-connected type.

The individual certifications may include one or more Roman numerals (from II through XIV) that had previously been used to identify certain types of portable luminaires covered under that certification. This identification system is no longer in use, and these Roman numerals can be disregarded.

PRODUCT MARKINGS

Products investigated as Convertible Units are marked to indicate acceptability as a LED luminaire when used with the appropriate conversion kit.

Products investigated for use in wet locations are marked, in combination with the UL Certification Mark, "SUITABLE FOR WET LOCATIONS."

Undercabinet portable LED luminaires are marked "SUITABLE FOR UNDERCABINET MOUNTING."

RELATED PRODUCTS

Portable luminaires that do not employ LEDs as their primary light source are covered under Luminaires, Portable Certified for Canada (QOWZ7).

Portable cabinet LED luminaires are covered under Portable Cabinet Light-emitting-diode Luminaires Certified for Canada (QOVA7).

Portable electric hand lamps are covered under Portable Electric Hand Lamps Certified for Canada (QORX7).

Nightlights are covered under Nightlights Certified for Canada (QOYX7).

Portable luminaires that comply with CAN/CSA-C22.2 No. 207, "Portable and Stationary Electric Signs and Displays," may also be certified as Signs Certified for Canada (UXYT7).

Unassembled portable luminaires are covered under Portable Luminaire Accessories, Kits and Subassemblies Certified for Canada (QPAU7).

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate undercabinet-type luminaires in this category is CSA-C22.2 No. 9.0, "General Requirements for Luminaires."

The basic standard used to investigate luminaires other than undercabinet type in this category is CSA-C22.2 No. 12, "Portable Luminaires."

CSA Technical Information Letter No. B-60, "Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires" (issued 5-17-1993), is also used in addition to the above standards.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Light-emitting-diode Luminaire" (or "Portable LED Luminaire").

The Listing Mark for this category requires the use of a holographic label.

* *

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LIGHT-EMITTING-DIODE NIGHTLIGHTS CERTIFIED FOR CANADA (QOWC7)

USE

This category covers light-emitting-diode (LED) nightlights for direct-plug-in use in parallel-slot, general-purpose receptacles rated 15 or 20 A, 125 V.

RELATED PRODUCTS

Nightlights employing light sources other than LED are covered under Nightlights Certified for Canada (QOYX7).

LED lighting products intended for use as nightlights, but provided with a power-supply cord, are covered under Light-emitting-diode Luminaires, Portable Certified for Canada (QOVZ7).

Light-emitting-diode Nightlights Certified for Canada (QOWC7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 256, ''Direct Plug-In Nightlights.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Light-emitting-diode Nightlight'' (or ''LED Nightlight'').

The Listing Mark for this category requires the use of a holographic label.

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LUMINAIRES, PORTABLE CERTIFIED FOR CANADA (QOWZ7)

GENERAL

This category covers portable luminaires whose primary function is task or ambient illumination. These products are provided with a flexible cord and an attachment plug for connection to a nominal 120 V, 15 or 20 A branch circuit and intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This category also covers low-voltage portable luminaires provided or marked for use with a power supply of the direct-plug-in or attachment-plug-equipped, cord-connected type.

The individual certifications may include one or more Roman numerals (from II through XIV) that had previously been used to identify certain types of portable luminaires covered under that certification. This identification system is no longer in use, and these Roman numerals can be disregarded.

PRODUCT MARKINGS

Products investigated as Convertible Units are marked to indicate acceptability as a luminaire when used with the appropriate conversion kit.

Products investigated for use in wet locations are marked, in combination with the UL Certification Mark, ''Suitable for Wet Locations.''

Undercabinet portable luminaires are marked ''SUITABLE FOR UNDERCABINET MOUNTING.''

REBUILT PRODUCTS

This category also covers portable luminaires that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt portable luminaires are factory rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt portable luminaires are subject to the same requirements as new portable luminaires.

RELATED PRODUCTS

Portable LED luminaires are covered under Light-emitting-diode Luminaires, Portable Certified for Canada (QOVZ7).

Portable cabinet luminaires are covered under Portable Cabinet Luminaires Certified for Canada (QOVJ7).

Portable cabinet LED luminaires are covered under Portable Cabinet Light-emitting-diode Luminaires Certified for Canada (QOVA7).

Portable electric hand lamps are covered under Portable Electric Hand Lamps Certified for Canada (QORX7).

Nightlights are covered under Nightlights Certified for Canada (QOYX7).

Portable luminaires that comply with CAN/CSA-C22.2 No. 207, ''Portable and Stationary Electric Signs and Displays,'' may also be certified as Signs Certified for Canada (UXYT7).

Unassembled portable luminaires are covered under Portable Luminaire Accessories, Kits and Subassemblies Certified for Canada (QPAU7).

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate undercabinet-type luminaires in this category is CSA-C22.2 No. 9.0, ''General Requirements for Luminaires.''

The basic standard used to investigate luminaires other than undercabinet type in this category is CSA-C22.2 No. 12, ''Portable Luminaires.''

Luminaires, Portable Certified for Canada (QOWZ7)−*Continued*

CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993), is also used in addition to the above standards.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Portable Luminaire'' or ''Rebuilt Portable Luminaire.''

The Listing Mark for this category requires the use of a holographic label.

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NIGHTLIGHTS CERTIFIED FOR CANADA (QOYX7)

GENERAL

This category covers nightlights for direct-plug-in use in parallel-slot, general-purpose receptacles rated 15 or 20 A, 125 V.

RELATED PRODUCTS

Nightlights employing light-emitting-diode (LED) light sources may additionally be covered under Light-emitting-diode Nightlights Certified for Canada (QOWC7).

Lighting products intended for use as nightlights but provided with a power-supply cord are covered under Luminaires, Portable Certified for Canada (QOWZ7).

Parallel-blade-to-incandescent-lamp adapters are covered under Lampholders, Adapters Certified for Canada (OLRX7).

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 256, ''Direct Plug-In Nightlights.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Nightlight.''

The Listing Mark for this category requires the use of a holographic label.

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PORTABLE LUMINAIRE ACCESSORIES, KITS AND SUBASSEMBLIES CERTIFIED FOR CANADA (QPAU7)

USE AND INSTALLATION

This category covers portable luminaire accessories, kits and subassemblies of the following types.

Portable Luminaire Accessory — Portable luminaire accessories are intended to be used with portable luminaires and consist of components such as interconnecting cord sets, dimmer and switch assemblies, and conversion kits to enable the portable luminaire to be converted to a fixed unit (luminaire) in accordance with CSA-C22.2 No. 250.0, ''Luminaires.''

Portable Luminaire Kit — Portable luminaire kits are intended to be used for making complete portable luminaires using ordinary tools to assemble and/or attach the parts to a support base in accordance with the instructions provided with the kit. All parts needed to assemble the product in accordance with the instructions are provided.

Portable Luminaire Subassembly — Portable luminaire subassemblies are intended to be used for modernizing, or replacing parts on existing luminaires in accordance with the instructions provided with the subassembly. They may also be used for constructing new portable luminaires

Portable Luminaire Accessories, Kits and Subassemblies Certified for Canada (QPAU7)−*Continued*

in accordance with the instructions provided with the subassembly. All electrical components needed to assemble the product in accordance with the instructions are provided.

MARKINGS AND INSTRUCTIONS

Portable luminaire accessory conversion kits are provided with mounting and installation instructions and markings to indicate that they are capable of being used as fixed units (luminaires) when used with the appropriate portable luminaires. The portable luminaires are identified by catalog or model number.

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 12 (1982), ''Portable Luminaires,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

Portable luminaire accessory conversion kits and their associated portable luminaires are additionally investigated to CSA-C22.2 No. 250.0, ''Luminaires.''

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Portable Luminaire Accessory,'' ''Portable Luminaire Kit,'' ''Portable Lamp Subassembly'' or ''Portable Luminaire Subassembly.''

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PORTABLE WORK LIGHTS CERTIFIED FOR CANADA (QPCJ7)

USE AND INSTALLATION

This category covers cord-and-plug-connected lights for illumination of work areas such as construction sites, loading docks, and machinery work stations. Work lights are not intended to be hand held during use. Work lights are not intended for use in hazardous (classified) locations as defined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This category also covers work light accessories intended for use with specific work lights.

Work lights may be freestanding, clamp-on, or similar portable mounting means, or be provided with a means for mounting to a tool, machine or a similar movable object.

Work lights may be placed on combustible floors. Special care must be employed to avoid overturning and to keep away from draperies, furniture, etc.

PRODUCT MARKINGS

A work light marked ''Dry Location Use'' is intended to be used only in a dry location.

A work light marked ''Suitable for Wet Location Use'' is intended for use in a wet or dry location.

A work light marked ''Suitable for Outdoor Use Only'' is suitable for use in a wet location and is intended to be used only in an outdoor location.

RELATED PRODUCTS

Portable outdoor flood lights for illumination or landscape, outdoor decorations, patios and play areas are covered under Luminaires, Portable Certified for Canada (QOWZ7), suitable for wet locations.

For other portable lighting products, see Luminaires, Portable Certified for Canada (QOWZ7) and Portable Electric Hand Lamps Certified for Canada (QORX7).

ADDITIONAL INFORMATION

For additional information, see Portable Lighting Products Certified for Canada (QOTU7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 12 (1982), ''Portable Luminaires,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

Portable Work Lights Certified for Canada (QPCJ7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Work Light,'' ''Portable Work Light'' or ''Work Light Accessory.''

The Listing Mark for this category requires the use of a holographic label.

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SUN AND HEAT LAMPS CERTIFIED FOR CANADA (QPDY7)

USE

This category covers portable sun and heat lamps of the household variety intended for the production of ultraviolet (sun) radiation, infrared (heat), radiation, or both.

FACTORS NOT INVESTIGATED

The physiological effects, beneficial or otherwise, which may be produced by these lamps have not been investigated.

RELATED PRODUCTS

Sun and heat lamps intended for professional use are covered under Medical Equipment Certified for Canada (PIDF7).

Sun and heat equipment for household and commercial use is covered under Personal Sun and Heat Equipment Certified for Canada (QGRX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' and CAN/CSA-C22.2 No. 224, ''Radiant Heaters and Infrared and Ultraviolet Lamp Assemblies for Cosmetic or Hygienic Purposes in Nonmedical Applications.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Infrared Lamp,'' ''Ultra-Violet Lamp,'' ''Heat Lamp'' or ''Sun Lamp.''

* *

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PORTABLE LUMINAIRES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QPKX7)

GENERAL

This category covers portable luminaires (lighting units). Portable luminaires have provision for connection of a three-conductor, flexible, extra-hard-usage cord having grounding conductor, and are provided with a seal between the lamp compartment and the terminal enclosure.

Connections to the fixed portion of the supply require the use of receptacles with plugs or receptacles with plugs interlocked with snap switches, or their equivalent, certified for the specified hazardous locations. The flexible cord connected to the units should be frequently examined and replaced when necessary. Terminal connections should be properly made and maintained.

Authorities Having Jurisdiction should be consulted with regard to conditions under which these portable devices will be permitted for use. It is recognized that portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12 (1982), ''Portable Luminaires,'' and CSA-C22.2 No. 137 (1981), ''Electric Luminaires for Use in Hazardous Locations,'' in addition to the requirements contained in CSA Technical Information Letter No. B-60, ''Interim Certification Requirements for Polymeric Enclosure Materials for Portable Luminaires'' (issued 5-17-1993).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Portable Lighting Unit for Hazardous Locations'' or ''Portable Luminaire for Use in Hazardous Locations.''

* *

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PORTABLE POWER CABLE CERTIFIED FOR CANADA (QPMU7)

USE

This category covers portable power cable constructed as described in and certified for use in accordance with Section 4 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Portable power cable consists of either a single insulated conductor with no jacket, or two or more insulated conductors, with or without grounding conductors, with an overall jacket. The insulation and jacket are both thermoset, except for Type PPC/TPE, which employs thermoplastic elastomer insulation, and Types MP and MP-GC, which employ a thermoset insulation and a thermoplastic or thermoset jacket. Insulation may be applied in one or two layers.

Types G, G-GC, G-BGC, W and SHD-GC are intended for supplying power to mobile equipment and machinery and are rated 90°C (194°F) dry, 75°C (167°F) wet, and 60°C (140°F) where exposed to oil. This cable employs flexible stranded conductors in the AWG sizes indicated below. The voltage ratings are as indicated below.

Types PPC and PPC/TPE are intended for temporary installations, such as portable stage lighting and temporary outdoor functions, and are rated 600 V, 60, 75, 90 or 105°C dry. This cable employs flexible stranded copper conductors in a size range of 8 AWG to 300 kcmil using strands of 34 or 30 AWG, and is flame rated minimum FT5.

Types MP and MP-GC are intended for use in underground mines where subject to occasional removal and change of location, and in rugged environments. This cable is rated 90°C (194°F) dry, 75°C (167°F) wet, and 60°C (140°F) where exposed to oil, and is flame rated minimum FT5. The voltage ratings are as indicated below.

CABLE TYPES

Type G Cable — A round, portable power cable with three or four insulated conductors, uninsulated ground wires, an overall jacket in conductors sized 12 AWG to 500 kcmil, or a two- or three-conductor cable in flat configuration in conductors sized 6 AWG to 4/0, both rated 2 kV.

Type G-GC Cable — A round, portable cable with three insulated conductors, uninsulated ground wires, ground-check conductor(s), an overall jacket using conductors sized 12 AWG to 500 kcmil, or a three- or four-conductor cable in flat configuration in conductors sized 6 AWG to 4/0, both rated 2 kV.

Type G-BGC Cable — A round, portable cable with three insulated conductors, uninsulated ground wires, ground-check conductor(s), and an overall jacket. The ground-check conductor is located in the center interstice of the three-phase conductor. The conductors are sized 12 AWG to 500 kcmil, rated 2 kV.

Type W Cable — A single conductor cable, in conductors sized 8 AWG to 1000 kcmil, a round, portable power cable with two, three or four insulated conductors, an overall jacket in conductors sized 12 AWG to 500 kcmil, or a two-conductor cable in flat configuration in conductors sized 8 AWG to 4/0, rated 2 kV.

Type SHD-GC Cable — A round, portable power cable with three insulated conductors, two uninsulated grounding conductors, a ground-check conductor, and an overall jacket. The conductors are sized 14 AWG to 500 kcmil, and the cable is rated 2 to 25 kV.

Type PPC/TPE Cable — A single-conductor, nonjacketed power cable.

Type PPC — A single conductor, nonjacketed power cable.

Type MP — A round power cable with three insulated, shielded conductors and three bare bonding conductors with conductors sized 6 AWG to 500 kcmil, rated 5 to 25 kV.

Type MP-GC — A round power cable with three insulated, shielded conductors, two bare bonding conductors, one ground check conductor with conductors sized 6 AWG to 500 kcmil, rated 5 to 25 kV.

PRODUCT MARKINGS

The type and flame ratings are identified by tag markings and by printing on the surface of the insulation. This cable may be marked ''-40C.'' If so marked, the cable complies with a cold bend test (not a suppleness test) at -40°C. Cable marked ''-50C,'' ''-60C'' or ''-70C'' complies with a bend test (not a suppleness test) at the applicable low temperature.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 96, ''Portable Power Cables,'' and CSA-C22.2 No. 96.1, ''Mine Power Feeder Cables.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, coil, reel or smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Portable Power Cable.''

* *

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POWER AND CONTROL TRAY CABLE CERTIFIED FOR CANADA (QPOR7)

GENERAL

This category covers instrumentation and control cable consisting of two or more insulated conductors, with or without one or more grounding (bonding) conductors, with or without one or more optical fiber members, and covered with a nonmetallic jacket. One or more grounding (bonding) conductors may be insulated or bare. Any fully insulated grounding (bonding) conductor is colored green or green with a yellow stripe. The cable is rated 150, 300 or 600 V.

The cable is certified in conductor sizes 18 to 4/0 AWG copper and 12 to 4/0 AWG aluminum rated 600 V, and 26 to 14 AWG for cable rated 300 V and 150 V. The type of insulation is surface marked (PVC, XLPE, EP, PE or TPE) on the cable. Conductor sizes within a cable may be mixed. A mixture of copper and aluminum circuit conductors is not provided within the same cable.

PRODUCT MARKINGS

Cable employing aluminum conductors is marked ''ALUMINUM'' (or ''ALUM'' or ''AL''). When any wire or cable contains ACM (aluminum conductor material) conductor(s), it is marked ''ALUMINUM ACM'' (or ''ALUM ACM'' or ''AL ACM'').

The cable is marked -25°C or -40°C. Cable employing thermocouple conductors is marked with the type designation of the thermocouple alloy.

Cable employing a shield is surface-marked ''Shielded.''

The cable is surface-marked with the temperature rating, ''Wet'' or ''Dry'' where applicable, ''Control'' and/or ''Instrumentation Cable'' or ''Thermocouple Cable'' where applicable, ''CIC'' for control and instrumentation cable nonarmored, or ''ACIC'' for armored control and instrumentation cable, and the flame rating. Cable that has been investigated to the CSA FT4 Flame Test is surface-marked ''FT4.'' Otherwise, cable is marked ''FT1.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 239, ''Control and Instrumentation Cables.''

UL MARK

The Listing Mark of UL on the attached tag, the reel, or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name as appropriate: Control and instrumentation cable that contains copper conductors has the product name ''Control and Instrumentation Cable''; control and instrumentation cable that contains aluminum conductors has the product name ''Aluminum Control and Instrumentation Cable.''

* *

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POWER CONVERTERS/INVERTERS AND POWER CONVERTER/INVERTER SYSTEMS CERTIFIED FOR CANADA (QPPY7)

USE AND INSTALLATION

This category covers (1) fixed and stationary power converters, power inverters, power converter systems and power inverter systems for use in recreational vehicles in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," (2) portable stationary and fixed power converters, power inverters, power converter systems and power inverter systems for use in land vehicles, and (3) accessories for power converters and power inverters.

Power converters are primarily rectifying units intended for connection to a 120 V or 120/240 V, 15 or 20 A branch circuit supplied from the recreational vehicle panelboard and designed to provide low direct voltage for equipment in the recreational vehicle. A power converter may also include a battery charging feature.

Power inverters are intended for connection to a battery source within a vehicle. They are designed to supply ac voltage for equipment in a land vehicle. A power inverter may be provided with an ac transfer option to supply the output from an ac distribution system when the inverter is connected to such a system. A power inverter may also include a battery charger feature.

Power converter systems consist of a power converter and not more than three integral line voltage branch circuit protective devices. Power inverter systems consist of a power inverter and not more than three integral line voltage branch circuit protective devices. A main disconnecting means is provided if more than two branch circuit protective devices are incorporated.

A power converter system or power inverter system may serve the function of a distribution panelboard in a land vehicle. They are intended to be connected directly to an ac distribution system by means of a power supply cord.

REBUILT PRODUCTS

This category also covers units that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt units are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt units are subject to the same requirements as new products.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 107.1 (1991), "Commercial and Industrial Power Supplies."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Power Converter," "Power Converter System," "Power Inverter," "Power Inverter System," or other appropriate product name as shown in the individual Listings.

For rebuilt products the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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POWER DISTRIBUTION CENTERS FOR COMMUNICATIONS EQUIPMENT CERTIFIED FOR CANADA (QPQY7)

GENERAL

This category covers power distribution centers for communications equipment rated 600 V or less.

Power distribution centers contain equipment such as circuit breakers, supplementary protectors, contactors, fuses, switches, including pullout types and related accessory equipment.

Some centers incorporate constructions designed to provide safety for the operator. These centers are dead-front but may be open at the back, bottom, top or sides. Other centers may employ special alarm indicating fuses that have exposed live parts extending through the front. The distribution centers that incorporate special alarm fuses or that are not provided with a complete enclosure are intended for installation in places accessible only to qualified persons and are so marked.

INSTALLATION

Some equipment has been investigated for installation in a restricted-access location, such as a dedicated equipment room or telecommunications equipment closet, where access is limited to trained service personnel. Such equipment is provided with a marking or installation instructions, stating "To be installed only in a Restricted Access Location," or similar wording.

A certified subassembly such as a fuse panel, circuit breaker panel or the like has been investigated for use in a power distribution center or cabinet and is suitable for field installation. The subassembly is installed in accordance with the manufacturer's installation instructions, and the catalog number or equivalent of the subassembly and power distribution center or cabinet is referenced in the instructions.

PRODUCT MARKINGS

Power distribution centers are marked with their short circuit current rating. This marking may be presented as a dc rating in amps, a description of the battery power supply, such as "Suitable For Use In Circuits Powered By Up To Five Banks Of 48 V, 200 A-Hr. Batteries," or a combination of both. A battery "bank" consists of a sufficient number of series-connected batteries to obtain the required system voltage. A number of "banks" are then wired in parallel to obtain the desired system A-Hr. capacity.

A distribution center having provision for the field installation of additional equipment such as circuit breakers, contactors, switches or the like is marked with the name or trademark of the manufacturer and the catalog number or equivalent of those devices that are intended to be installed in the field.

Power distribution centers are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Unless the equipment is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14 – 1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

RELATED EQUIPMENT

Power supplies for information technology and telecommunications equipment are covered under Power Supplies, Information Technology Equipment Including Electrical Business Equipment Certified for Canada (QQGQ7) and Power Supplies, Telephone Certified for Canada (QQJE7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60950, "Safety of Information Technology Equipment," or CAN/CSA-C22.2 No. 60950-1, "Information Technology Equipment – Safety – Part 1: General Requirements."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Power Distribution Center for Communications Equipment" or "Power Distribution Center for Communications Equipment Subassembly."

* *

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POWER-DISTRIBUTION EQUIPMENT, PORTABLE CERTIFIED FOR CANADA (QPRW7)

USE

This category covers portable power-distribution units and devices for use in the following locations:

- Theatre installations in accordance with Section 44 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC)
- Amusement parks, midways, carnivals, film and TV sets, TV remote broadcasting locations, and traveling shows in accordance with Section 66 of the CEC
- Temporary wiring at construction sites in accordance with Section 76 of the CEC

RATINGS

This category covers units rated at 600 V or less, single- or multi-phase. Units are rated maximum 1600 A.

Short-circuit Rating — Units are intended for connection to supplies with a maximum available fault current of 10,000 A.

PRODUCT MARKINGS

Accessibility — Units intended for use in areas not accessible by the general public are marked "For Use in Areas Not Readily Accessible by the General Public."

Conductors in Parallel — Units intended for paralleled conductors on a single circuit are marked "WARNING – Risk of Fire – Not for Multiple Circuits. Single Circuit with Parallel Conductors Only."

Duty Rating — Outputs are not suitable for continuous use unless marked otherwise.

Ground-fault Protection — Only those receptacles so marked are provided with ground-fault circuit protection for personnel.

Neutral Connection — Equipment rated for use on 3-phase, 4-wire with ground supplies and intended for use with electronic dimmers are marked "130 Percent Neutral – Suitable for Use with Electronic Dimmers." Equipment for use on both 208Y-/120-volt, 3-phase, 4-wire and 120-/240-volt, single-phase supplies at the full current rating on both systems are marked "200 Percent Neutral."

Qualified Personnel — Units intended for use by qualified personnel are marked "FOR USE BY QUALIFIED PERSONNEL ONLY" and "The routing of portable supply conductors, the making and breaking of supply connectors, and the energization and de-energization of supply services shall be performed by qualified personnel only."

Enclosure Type — Enclosures are marked with a Type designation indicating the external conditions for which they are intended. Intended uses for the various Type designations are indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7). Enclosures may additionally be marked with descriptive terms such as "Raintight," "Watertight," "Corrosion Resistant" and the like.

Receptacle Ratings — Equipment with receptacles that are not suitable to be disconnected under load are marked "Do Not Disconnect Under Load," or other similar marking to indicate the limitation of the receptacle.

Single-pole Inlets and Outlets — Equipment with separate, single-pole devices for input or output and without sequential interlocking provisions are marked "WARNING — Risk of Electric Shock. Plug connection should be in the following order:

a) Equipment grounding conductor connectors,
b) Grounded circuit conductor connectors, and
c) Ungrounded conductor connectors.

Disconnection should be in reverse order."

RELATED PRODUCTS

Units intended for use in theater or studio rigging immediately adjacent to stage luminaires are covered under Stage and Studio Luminaires and Connector Strips Certified for Canada (IFDZ7).

Portable cord-connected units rated 250 V ac or less, 20 A or less, intended for indoor use as multiple-outlet extensions of a branch circuit to a central location to supply laboratory equipment, a home workshop, home movie lighting control, etc., are covered under Relocatable Power Taps Certified for Canada (XBYS7).

Connector assemblies consisting of only factory-assembled plugs and cord connectors attached to extra-hard service cords or cables are covered under Cord Sets and Power-supply Cords Certified for Canada (ELBZ7).

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PORTABLE POWER-DISTRIBUTION UNITS AND DEVICES CERTIFIED FOR CANADA (QPSH7)

GENERAL

This category covers portable power-distribution equipment of standardized type or configuration. Each unit has a marked model, type or catalog number.

Portable power-distribution units are assemblies of certified products or components, or both, contained in complete electrical enclosures. They may incorporate disconnecting means, overcurrent devices, control components, receptacles for attachment plugs, stage and studio type inlets and connectors, and the like.

This category also covers cable-mounted busbar clamps for use with portable power-distribution units as well as partially enclosed, plastic-framed cable-splicing blocks.

Busbar Clamps (Sister Lugs)

Busbar clamps are intended for use by qualified personnel only. Cable terminating to busbar clamps should be tied or otherwise supported so that flexing or strain on the conductors is not transmitted to the conductor termination at the busbar clamp. Solder lug-type units are not suitable to terminate an equipment grounding conductor. Busbar clamps are marked with their range of intended wire sizes and their maximum current rating.

Cable-splicing Blocks (Spiders)

Partially enclosed, plastic-framed cable-splicing blocks are suitable for outdoor use. They are suitable for exposure to rain or water spray when not energized. Following such an exposure they are intended to be dried and inspected prior to energization. They are intended for use by qualified personnel in areas not readily accessible by the general public. They are intended for installations covered by Section 44 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Construction Site Units

Units identified as "Construction-site Portable Power-distribution Units" or with similar identifiers that are marked as providing ground-fault protection for personnel protect the output circuits in the presence of one or more of the following conditions:

1. Any two power supply conductors are reversed.
2. There is an open circuit in either the grounded supply conductor or any of the ungrounded supply conductors.

Protection is provided by exhibiting the performance characteristics of a Class A ground-fault circuit-interrupter or by de-energizing the protected output circuits.

ADDITIONAL INFORMATION

For additional information, see Power-distribution Equipment, Portable Certified for Canada (QPRW7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 14, "Industrial Control Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify portable power-distribution units manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Portable Power Distribution Unit" (or "Port Pwr Dist Unit") or "Construction Site Portable Power Distribution Unit" (or "Construction Site Port Pwr Dist Unit"). The word "Equipment" may be substituted for "Unit."

The Listing Mark of partially enclosed, plastic-framed cable-splicing blocks is the same as that specified above except the product name is "Open Frame Cable Splicing Block."

The Listing Mark on the smallest unit container in which busbar clamps are packaged and additionally provided with the UL Mark for Canada symbol on the busbar clamp is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for busbar clamps includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Busbar Clamp."

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POWER OUTLETS AND POWER-OUTLET FITTINGS CERTIFIED FOR CANADA (QPYV7)

GENERAL

This category covers power outlets and power-outlet fittings.

Power outlets are enclosed assemblies that may include components such as receptacles, circuit breakers, fuseholders, fused switches, buses, and watt-hour meter-mounting means. Power outlets are permanently installed and, although not restricted to such use, are intended for use:

- At outdoor locations, such as on farms, at building sites, and the like, where power is required to operate portable, mobile, or temporarily installed equipment
- To supply power to a mobile home or a recreational vehicle
- To supply shore power to boats

Power-outlet fittings may be panels or combination units incorporating receptacles, disconnecting means, overcurrent protection or other such devices. A separable mounting post or pedestal to which power outlets are to be mounted is also considered a fitting. Power-outlet fittings are intended for factory or field assembly into or in conjunction with specific power outlets. Power outlets are marked to indicate those fittings with which they are intended to be used.

USE AND INSTALLATION

Power outlets are mounted using a post or pedestal, each detailed as follows:

Post type power outlets are intended to be mounted in concrete at or below grade level, or intended to be secured to some other mounting support. The mounting post contains markings indicating the proper grade level.

Pedestal type power outlets are intended for mounting on a concrete slab.

Unless marked otherwise, a mounting post, pedestal or fitting is not intended to serve as the sole support of a mast for overhead wiring.

Power outlets are not intended for use in recreational vehicle parks or in marinas unless so marked.

Power outlets are suitable as service equipment if marked ''Suitable For Use As Service Equipment'' or, where the neutral is factory bonded to the enclosure, ''Suitable For Use Only As Service Equipment.''

Power outlets containing overcurrent protection are marked with their short-circuit current ratings in rms symmetrical amps.

Where in normal operation the load will continue for three hours or more, circuit breakers and fuses should not be loaded to exceed 80% of their current rating.

Investigation of a power outlet includes a test designed to simulate exposure to beating rain to determine that such exposure will not interfere with successful operation of the apparatus within the enclosure nor result in wetting of the exposed faces of receptacles and associated attachment plugs.

Power outlets are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such markings are independent of any marking on terminal connectors and on a wiring diagram or other readily visible location.

Unless the equipment is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14–1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in Tables 2 and 4 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Termination provisions are determined based on values provided in Tables 2 and 4, with no adjustment made for correction factors.

RELATED PRODUCTS

Portable power distribution equipment is covered under Portable Power Distribution Units and Devices Certified for Canada (QPSH7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 29 (1989), ''Panelboards and Enclosed Panelboards.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Outlet'' or ''Power Outlet Fitting.''

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POWER SUPPLIES CERTIFIED FOR CANADA (QQAQ7)

These categories cover the following types of power supplies intended for use in ordinary locations in accordance with the Canadian Electrical Code.

- General Purpose Power Supplies
- Specialty Power Supplies
- Information Technology Equipment Power Supplies
- Telephone Power Supplies

The investigation of a device covered in these categories does not include the effects it may have on the system or equipment connected thereto.

A power supply not covered under one of the above mentioned categories and for use with only a specific product may be covered under the category of the specific product.

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POWER SUPPLIES, GENERAL PURPOSE CERTIFIED FOR CANADA (QQFU7)

GENERAL

This category covers indoor- and outdoor-use power supplies having input ratings of not more than 750 V, direct and alternating current.

Power supplies marked ''Intended for Installation in a Protected Environment'' or the equivalent are intended to be used in a temperature- and humidity-controlled indoor area that is relatively free of conductive contaminate.

REBUILT PRODUCTS

This category also covers power supplies that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt power supplies are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt power supplies are subject to the same requirements as new power supplies.

ADDITIONAL INFORMATION

For additional information, see Power Supplies Certified for Canada (QQAQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1, ''Power Supplies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Supply.''

For rebuilt products the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

The Listing Mark for this category requires the use of a holographic label.

* *

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POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT CERTIFIED FOR CANADA (QQGQ7)

GENERAL

This category covers power supplies rated 600 V or less, intended for use with information technology equipment (ITE) including electrical busi-

Power Supplies, Information Technology Equipment Including Electrical Business Equipment Certified for Canada (QQGQ7)−*Continued*

ness equipment. End-use products that employ these types of power supplies are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

All power-supply types covered under this category are marked with input and output electrical ratings that include the voltage and intended maximum load ratings in amperes.

When power supplies intended for use with a detachable power-supply cord are not provided with such a cord, a cord suitable for connection of the equipment to the branch circuit is to be separately provided.

The investigation of a product covered under this category does not include the effects it may have on the system or equipment to which it is connected.

REBUILT PRODUCTS

This category also covers power supplies that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt power supplies are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt power supplies are subject to the same requirements as new power supplies.

ADDITIONAL INFORMATION

For additional information, see Power Supplies Certified for Canada (QQAQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 60950-1 (2007), ''Information Technology Equipment – Safety – Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60950-22 (2007), ''Information Technology Equipment – Safety – Part 22: Equipment to be Installed Outdoors.''

All low-voltage outputs (maximum 42.4 V peak or 60 V dc) are safety extra-low-voltage (SELV) as defined in CAN/CSA-C22.2 No. 60950-1, and, where noted in the test report, SELV for wet locations as defined in CAN/CSA-C22.2 No. 60950-22. An output marked ''LPS'' has been determined to have an output level at or below the limited power-source level specified in CAN/CSA-C22.2 No. 60950-1, as it relates to the requirements for equipment supplied by the output.

An output marked ''Class 2'' has additionally been investigated to CAN/CSA-C22.2 No. 223 (1991), ''Power Supplies with Extra Low Voltage Class 2 Outputs.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number or file number, and the category identifier ''Information Technology Equipment Power Supply'' (or ''I.T.E. Power Supply'' or ''ITE Power Supply''), ''QQGQ7 Power Supply,'' or the standard number with or without the ''CAN/CSA-C22.2 No.'' prefix (e.g., ''CAN/CSA-C22.2 No. 60950-1,'' ''60950-1'').

For accessories, the Listing Mark is applied to modular accessory power supplies on an external surface that will be enclosed within the end-use product. The category identifier for accessories includes the word ''Accessory.''

For rebuilt products the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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POWER SUPPLIES, SPECIALTY CERTIFIED FOR CANADA (QQIJ7)

USE

This category covers indoor- and outdoor-use power supplies having input ratings of not more than 750 V, direct and alternating current.

These power supplies are intended for, but not necessarily limited to, specific uses such as to supply electroplating equipment, cathodic protection equipment, power supply/battery charger combinations, and industrial equipment, including inverters and converters.

This category also covers Class 2 power units that are permanently connected, or that are cord-connected with input rated greater than 250 V. Other types of Class 2 power units are covered under Transformers, Class 2 Certified for Canada (XOKV7) and Direct-plug-in and Cord-connected Class 2 Power Units Certified for Canada (EPBU7).

PRODUCT MARKINGS

Power Supplies, Specialty Certified for Canada (QQIJ7)−*Continued*

Power supplies marked ''Intended for installation in a protected environment'' or the equivalent are intended to be used in a temperature- and humidity-controlled indoor area that is relatively free of conductive contaminate.

RELATED PRODUCTS

See Power Supplies, General Purpose Certified for Canada (QQFU7).

ADDITIONAL INFORMATION

For additional information, see Power Supplies Certified for Canada (QQAQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1 (2001), ''General Use Power Supplies.''

Products with a marked Class 2 output are additionally investigated to CAN/CSA-C22.2 No. 223 (1991), ''Power Supplies with Extra-Low-Voltage Class 2 Outputs.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the appropriate product name as shown in the individual Listings.

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POWER SUPPLIES, TELEPHONE CERTIFIED FOR CANADA (QQJE7)

GENERAL

This category covers indoor- and outdoor-use telecommunication power supplies having input ratings of not more than 750 V, direct and alternating current, intended for use with telephone exchange equipment, telephone appliances, and telephone accessories.

REBUILT PRODUCTS

This category also covers telephone power supplies that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt telephone power supplies are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt telephone power supplies are subject to the same requirements as new telephone power supplies.

RELATED PRODUCTS

See Power Supplies, General Purpose Certified for Canada (QQFU7).

ADDITIONAL INFORMATION

For additional information, see Power Supplies Certified for Canada (QQAQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 225, ''Telecommunication Equipment,'' and CSA-C22.2 No. 107.1, ''General Use Power Supplies.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Telecommunication Power Supply'' or ''Telephone Power Supply.''

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT CERTIFIED FOR CANADA (QQJQ7)

GENERAL

This category covers power supplies rated 600 V or less, intended for use with products covered under Audio/Video Equipment Certified for Canada (AZOE7), Communication Technology Equipment Certified for Canada (AZOJ7) and Information Technology Equipment Certified for Canada (AZOT7).

These power supplies are stand-alone units that deliver power to the above end-use products via external interconnecting means.

This category also covers modular accessory power supplies. Such power supplies are types that are intended for field installation within computing, telecommunication, or similar equipment. These modular power supplies are also provided with installation instructions relative to safe installation.

All power-supply types covered under this category are marked with input and output ratings that include the voltage and intended maximum load rating in amperes.

When power supplies intended for use with a detachable power-supply cord are not provided with such a cord, a cord suitable for connection of the equipment to the branch circuit will be separately provided.

The investigation of a product covered under this category does not include the effects it may have on the specific system or equipment to which it is connected.

ADDITIONAL INFORMATION

For additional information, see Power Supplies Certified for Canada (QQAQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 62368-1 (2012), ''Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements.''

All low-voltage outputs are Class 1 electrical energy sources (ES1) as defined in CAN/CSA-C22.2 No. 62368-1. An output marked ''LPS,'' ''PS1'' or ''PS2'' has been determined to have an output level at or below the limited power-source level, Class 1 electrical power source (PS1) or Class 2 electrical power source (PS2), respectively, specified in CAN/CSA-C22.2 No. 62368-1, as it relates to the requirements for equipment supplied by the output.

An output marked ''Class 2'' has additionally been investigated to CAN/CSA-C22.2 No. 223 (1991), ''Power Supplies with Extra-Low-Voltage Class 2 Outputs.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Power Supply,'' or other appropriate product name as shown in the individual Listings.

For accessories, the Listing Mark is applied to modular accessory power supplies on an external surface that will be enclosed within the end-use product. The category identifier for accessories includes the word ''Accessory.''

* *

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PREFABRICATED ASSEMBLIES CERTIFIED FOR CANADA (QQRX7)

This category covers prefabricated assemblies, which are factory-built assemblies incorporating pre-installed materials and equipment which, after installation, are usually concealed and may not be accessible for inspection at the installation site. Materials, including the methods used for the installation of electrical, mechanical, heating and plumbing equipment incorporated in these assemblies by their manufacturer are based on the ''National Electric Code of Canada,'' ''National Building Code of Canada,'' ''National Fire Code of Canada,'' ''National Plumbing Code of Canada,'' and/or the ''National Farm Building Code of Canada.''

Authorities Having Jurisdiction should be consulted before installation.

* *

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MANUFACTURED WIRING SYSTEMS CERTIFIED FOR CANADA (QQVX7)

USE AND INSTALLATION

This category covers prefabricated wiring systems that may incorporate modular multipole connectors, AC90 cable, ACWU90 cable, flexible metal conduit, hard usage cord, outlet boxes, splitter assemblies, remote control switching assemblies and devices. The wiring systems cannot be field inspected by the Authority Having Jurisdiction (AHJ) without damage to the assembly.

These prefabricated modules and assemblies are intended for installation rearrangement and inspection in accessible locations in accordance with the CEC. AHJs should be consulted before installation.

This equipment is intended to be connected to supply circuits of up to 600 V ac and maximum rating of 30 A per circuit.

Materials, including the methods used for the installation of electrical, mechanical and heating equipment incorporated in these assemblies by their manufacturer, are based on the CEC, the ''National Building Code of Canada,'' ''National Fire Code of Canada,'' and/or the ''National Farm Building Code of Canada.''

PRODUCT MARKINGS

Devices of manufactured wiring systems that are not intended for interrupting current are marked ''NOT FOR INTERRUPTING CURRENT.''

Each bi-directional wiring assembly is marked ''WARNING: Risk of Fire or Electric Shock,'' and the following or equivalent: ''Do not electrically connect to more than one source of supply. Always determine that the wiring assembly is electrically connected to one and only one source of supply.''

Manufactured wiring systems suitable for installation in patient care areas are marked ''Suitable For Patient Care Areas of Health Care Facilities Other Than Anesthetizing Locations.''

Manufactured wiring systems suitable for installation in ducts or plenums are marked ''Acceptable for Use in Ducts or Plenums Used for Environmental Air.''

Manufactured wiring systems suitable for installation in air-handling spaces other than ducts or plenums are marked ''Acceptable for Use in Air-handling Spaces Other Than Ducts or Plenums.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 203.1 (1994), ''Manufactured Wiring Products.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Distribution Box'' or ''Tap Box,'' or other appropriate product name as shown in the individual Listings.

* *

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SECTIONS AND UNITS CERTIFIED FOR CANADA (QQXX7)

USE AND INSTALLATION

This category covers factory-built assemblies for use within, or as part of the building structure of buildings for commercial, industrial and residential use. These assemblies may incorporate pre-installed electrical power distribution systems comprised of certified electrical components, which are usually concealed and may not be accessible for inspection at the installation site. Some assemblies may incorporate additional certified equipment.

The structural requirements vary with the type of building construction, occupancy and location of installation and are not investigated under this category.

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Some assemblies covered under this category have additionally been investigated to CAN/ULC-S102, ''Standard Method of Test for Surface

Sections and Units Certified for Canada (QQXX7)−*Continued*

Burning Characteristics of Building Materials and Assemblies," and may be marked with a designation "FHC X/Y" on the assembly that denotes these products have a flame-spread value of "X" or less and a smoke-developed value of "Y" or less.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II," and CAN/CSA-C22.2 No. 0.4, "Bonding of Electrical Equipment."

The basic standard used to investigate products in this category for flame-spread and smoke-developed values is CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies." Such products are noted in the individual certifications.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Prefabricated *."

* The appropriate product name as shown in the individual Listings

One Listing Mark is applied to each section or unit.

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WIRING ASSEMBLIES CERTIFIED FOR CANADA (QQYZ7)

GENERAL

This category covers prefabricated wiring systems comprised of Listed electrical components that could be field assembled and inspected by an Authority Having Jurisdiction (AHJ), but are assembled in the factory prior to field installation.

Prefabricated wiring assemblies incorporate Listed conduit, tubing, or cable, conductors and fittings intended for field installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). They may be factory assembled to outlet or junction boxes, box mounting brackets, and wiring devices.

Prefabricated wiring assemblies are marked with the conduit, tubing or cable type, and the conductor size and type to permit determination of their suitability for a specific application and ampacity in accordance with the CEC. A parts list is provided with each assembly to identify the extent of the product.

Materials, including the methods used for the installation of electrical, mechanical and heating equipment incorporated in these assemblies by their manufacturer, are based on the CEC, the "National Building Code of Canada," "National Fire Code of Canada," and/or the "National Farm Building Code of Canada."

Wiring Assembly Kits

Wiring assembly kits for final assembly in the field consist of a package that contains some or all: length(s) of Listed conduit, tubing or cable, Listed fittings appropriate for the type of conduit, tubing, or cable, outlet or junction boxes, conductors, or other devices.

The packaging for wiring assembly kits is marked with the conduit, tubing, or cable size and type, and the conductor size and type, if provided, to permit determination of their suitability for a specific application and ampacity in accordance with the CEC. Installation instructions and a parts list are provided on or in each package. Acceptability of the field assembly is to be determined by the AHJ.

Conduit Kits

Conduit kits for final assembly in the field consist of a package that contains some or all: length(s) of Listed conduit or tubing, Listed fittings appropriate for the type of conduit or tubing, outlet or junction boxes, or other devices.

The packaging for conduit kits is marked with the conduit or tubing size and type to permit determination of their suitability for a specific application with the CEC. Installation instructions and a parts list are provided on or in each package. Acceptability of the field assembly is to be determined by the AHJ.

Surface Raceway Kits

Surface raceway kits for final assembly in the field consist of a package that contains some or all: lengths of Listed surface metal or nonmetallic surface raceways, Listed fittings appropriate for the surface raceway, or other devices.

Wiring Assemblies Certified for Canada (QQYZ7)−*Continued*

The packaging for surface raceway kits is marked with the raceway size and the number, type and size of conductors that may be installed in the Listed raceway, to permit determination of its suitability for a specific application in accordance with the CEC. Installation instructions and a parts list are provided on or in each package. Acceptability of the field assembly is to be determined by the AHJ.

RELATED PRODUCTS

For factory-built modules and cable sets incorporating fixtures, switches, connectors and receptacles, see Manufactured Wiring Systems Certified for Canada (QQVX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

UL MARK

The Listing Mark of UL on the factory-assembled wiring assembly or the packaging of a wiring assembly kit is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Wiring Assembly," "Wiring Assembly Kit," "Conduit Kit" or "Surface Raceway Kit."

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PREFABRICATED BUILDINGS CERTIFIED FOR CANADA (QRAR7)

These are factory-built buildings and building assemblies incorporating pre-installed materials and equipment which after installation, are usually concealed and may not be accessible for inspection at the installation site.

They are intended for installation subject to approval by the authority having jurisdiction.

The buildings and building assemblies have been investigated in accordance with one or more Canadian Building, Plumbing, Electrical Codes, etc. applicable to the requirements of the local regulatory authority.

As an alternate, the building and building assemblies have been investigated in accordance with one or more specific areas of a code such as electrical, plumbing, mechanical, structural, etc.

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PREFABRICATED UNITS CERTIFIED FOR CANADA (QRHQ7)

USE AND INSTALLATION

Prefabricated units are factory built assemblies for varying uses such as rooms within buildings or rooms within rooms of buildings for commercial, industrial or residential use, outdoor or exterior roofed structures, and canopies.

Information covering the electrical equipment and appliances factory furnished as part of the prefabricated unit, and items such as site-completed work subject to review by the Authority Having Jurisdiction, are contained on the manufacturer's data plate attached to each unit.

These prefabricated units are intended for installation subject to approval by the Authority Having Jurisdiction.

REQUIREMENTS

These units have been investigated in accordance with the applicable sections of one or more Canadian Codes (such as Building, Fire, Plumbing) to meet the needs of the local jurisdiction. As an alternate, the units may have been investigated in accordance with only one or more specific areas such as electrical, plumbing, mechanical, etc.

ADDITIONAL INFORMATION

For additional information, see Prefabricated Buildings Certified for Canada (QRAR7).

LOOK FOR CLASSIFICATION MARK ON PRODUCT

The Classification Mark of UL on the product is the only method provided by UL to identify prefabricated units manufactured under its Classi-

Prefabricated Units Certified for Canada (QRHQ7)−*Continued*

fication and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), "PREFABRICATED UNIT IN ACCORDANCE WITH (Canadian Building Code, Canadian Electrical Code, etc.)."

The Classification Mark includes reference to the specific codes (including editions) to which the product was investigated. One Classification Mark is applied to each prefabricated unit at a location visible after the unit is erected. In addition, a manufacturer's data plate is applied adjacent to the UL Mark, where necessary, to convey applicable information such as the equipment and appliances factory furnished as part of the classified unit, the structural design loads, and any site-completed items subject to review by the Authority Having Jurisdiction. If the unit is shipped knocked down, the number and description of the sections required to complete the unit is included on the data plate.

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COMMERCIAL AND INDUSTRIAL BUILDINGS CERTIFIED FOR CANADA (QRNZ7)

This category includes automotive service station buildings, toll booths, electrical distribution buildings, and similar prefabricated buildings.

These factory built buildings have been classified in accordance with one or more Canadian codes (building, plumbing, electrical, etc.) to meet the needs of the local jurisdiction.

As an alternate, the building has been classified in accordance with one or more specified areas of a Building Code such as electrical, plumbing, mechanical, structural, etc. Information covering the electrical equipment and appliances factory furnished as part of the building, and the items such as site-completed work subject to review by the local regulatory authority, are contained on the manufacturer's data plate attached to each building.

Prefabricated commercial and industrial buildings are intended for installation subject to approval by the authority having jurisdiction.

The Classification Marking of UL on the product is the only method provided by UL to identify Commercial and Industrial Buildings produced under its Classification and Follow-Up Service.

The Classification Marking includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), the product identity "Industrial Buildings", "In accordance with Canadian Electrical Code, Canadian Building Code, etc." including the manufacturer's name and address, serial number of the building units/sections and a reference to a manufacturer's data plate posted at or near the electrical distribution panel.

One Classification Marking is applied to each building at a location visible after the building is erected. In addition, information covering the equipment and appliances factory furnished as part of the Classified, site-completed building and, if the building is shipped knock down, the number and description of the sections required to complete the building is included on a data plate.

* *

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COMPOSITE PANELS CERTIFIED FOR CANADA (QRSY7)

USE AND INSTALLATION

This category covers composite panels, which are factory-built panel assemblies intended for use within or as part of the structure of buildings for commercial, industrial and residential use. These assemblies incorporate pre-installed branch-circuit electrical power distribution systems that are usually concealed and may not be accessible for inspection at the installation site. Some panels incorporate audio, lighting, ventilation fans, and other certified utilization equipment.

The structural strength requirements vary with live loads, dead loads, and seismic conditions of each locality. Authorities Having Jurisdiction should be consulted with respect to their requirements for panel systems.

INSTALLATION INSTRUCTIONS

Composite Panels Certified for Canada (QRSY7)−*Continued*

A copy of the installation and operation instructions are provided with each panel if shipped separately or with each set of panels intended to be installed as a system.

The composite panel system is provided with an assembly diagram and with an electrical diagram specifying the specific locations of the field-installed wiring connections, the connections between composite panel sections, factory-installed utilization equipment, and the intended field-wiring branch-circuit-conductor connection points of the panel system.

The installation instructions indicate which circuits are factory installed.

PRODUCT MARKINGS

Each input power feed conduit whip, cord or building field-wiring-connection point to the panel system is marked with a schematic wiring diagram or the equivalent, indicating the circuits and conductors provided and the required rating of the branch circuit to which it is to be connected.

A panel system with other than a single-phase circuit has the convenience receptacles and utilization equipment marked by a letter, number, color, or a similar designation to indicate the circuit in the system to which the receptacle or utilization equipment is connected.

Each panel system electrical accessory that is shipped separately from the major panel system to which it is to be connected is marked with respect to its intended use and interrelationship with the panel system; for example, "For Use with Composite Panel Series ____," in which the appropriate series or catalog number is designated. When separable components are factory assembled and shipped together, only the complete assembly and not the component is marked.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

COMPOSITE PANEL
AS TO ELECTRICAL FIRE AND SHOCK HAZARDS ONLY
Control No.
or
COMPOSITE PANEL ACCESSORY
FOR USE WITH PANEL SERIES [panel designation]
AS TO ELECTRICAL FIRE AND SHOCK HAZARDS ONLY
Control No.

* *

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PRESS AND OTHER POWER-OPERATED MACHINE CONTROLS AND SYSTEMS CERTIFIED FOR CANADA (QUEQ7)

This category covers controls and systems intended for industrial or commercial application on power-operated machines intended for such uses as pressing, punching, shearing or breaking operations. They may be designed for use on particular types of equipment such as pneumatic- or hydraulic-powered devices or mechanically operated part or full revolution types of machines. The control or system is intended to reduce the risk of bodily injury resulting from machine operation. The intended use of the control is noted in the individual Listings.

* *

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PRESENCE-SENSING DEVICES CERTIFIED FOR CANADA (QUHP7)

USE

This category covers presence-sensing devices intended for use in machine control systems where they can be interconnected to the control system. Presence-sensing devices detect the presence of an object or body part and are used as a part of the machine safeguarding system to reduce the risk of bodily injury from moving machine parts. These products are limited to use on part revolution types of machines or machines where operation can be interrupted and motion stopped at any point in the machine operation cycle.

Presence-sensing devices investigated for press initiation are noted in the individual certifications.

RELATED PRODUCTS

Presence-sensing devices employing active opto-electronic protective devices (AOPD) consisting of one or more light beams for the sensing function are covered under Active Opto-electronic Protective Devices Certified for Canada (NIPF7).

Presence-sensing devices employing active opto-electronic protective devices responsive to diffuse reflection (AOPDDR) consisting of one or more laser scanners for the sensing function are covered under Active Opto-electronic Protective Devices Responsive to Diffuse Reflection Certified for Canada (NIPM7).

ADDITIONAL INFORMATION

For additional information, see Press and Other Power-operated Machine Controls and Systems Certified for Canada (QUEQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 0.8, ''Safety Functions Incorporating Electronic Technology,'' and CSA-C22.2 No. 14, ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Presence Sensing Device.''

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PRESS CONTROLS CERTIFIED FOR CANADA (QUKQ7)

USE

This category covers press controls intended for use in press control systems where they are interconnected with other components, such as push-button hand controls, valves, air cylinders, etc.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 0.8, ''Safety Functions Incorporating Electronic Technology,'' and CSA-C22.2 No. 14, ''Industrial Control Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Press Control.''

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PROCESS CONTROL EQUIPMENT, ELECTRICAL CERTIFIED FOR CANADA (QUYX7)

GENERAL

This category covers process control equipment rated 600 V maximum and intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' These products include instruments for measurement, recording and/or control of process variables (e.g., temperature, pressure, flow) and auxiliary devices used with these instruments (e.g., sensors, transducers, valve operators).

Equipment intended to be installed only in process control panels is so identified.

Process control equipment may be shipped completely assembled or in modular form. Modular assemblies are intended to be field assembled to form a complete system in accordance with provided installation instructions.

Open-type process control equipment is not provided with a complete enclosure and is intended to be placed in an industrial control panel or similar type of enclosure.

The investigation of process control equipment does not include investigation of the function of the controlled equipment.

RELATED PRODUCTS

Process control equipment intended for mounting in hazardous (classified) locations or with circuits that extend into hazardous (classified) locations is covered under Process Control Equipment for Use in Hazardous Locations Certified for Canada (QUZW7) and Process Control Equipment for Use in Zone Classified Hazardous Locations Certified for Canada (QVAJ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 61010-1 (2004), ''Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements.''

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Process Control Equipment,'' ''Open-type Process Control Equipment,'' ''Process Control Enclosure,'' ''Process Control Enclosure Part,'' ''Process Control Subassembly,'' ''Process Control Accessory,'' or other appropriate product name as shown in the individual Listings. The words ''Process Control Equipment'' may be abbreviated ''Proc. Cont. Eq.''

When the size or shape of a subassembly makes it impractical to incorporate the product identification text, the product may be marked with the UL Mark for Canada symbol, ''QUYX7'' and the control number, provided that the complete Listing Mark text appears on the smallest shipping container.

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PROCESS CONTROL EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QUZW7)

USE AND INSTALLATION

This category covers process control equipment rated 600 V maximum and intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' These products include instruments for measurement, recording and/or control of process variables (e.g., temperature, pressure, flow) and auxiliary devices used with these instruments (e.g., sensors, transducers, valve operators), including associated apparatus providing intrinsically safe outputs (e.g., barriers providing intrinsically safe circuit extensions).

Intrinsically safe systems have been investigated on the basis that all equipment connected to the system is certified as part of the system unless otherwise indicated and is used as intended.

Equipment intended to be installed only in process control panels is so identified in the individual certifications. Such equipment is not intended for field installation.

Safety may be affected if the manufacturer's installation instructions are not followed.

The investigation of process control equipment does not include investigation of the function of the controlled equipment.

PROCESS CONTROL EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QUZW7)

RELATED PRODUCTS

Equipment investigated for use only in the hazardous (classified) locations of automotive and marine service stations is covered under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7).

Process control equipment intended for use in unclassified locations is covered under Process Control Equipment, Electrical Certified for Canada (QUYX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 61010-1 (2004), "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Process Control Equipment for Use in Hazardous Locations," "Process Control System for Use in Hazardous Locations," "Process Control Unit for Use in Hazardous Locations," "Process Control Equipment (Associated Apparatus)," "Process Control Unit (Associated Apparatus)," or other appropriate product name as shown in the individual Listings. The words "Hazardous Locations" may be abbreviated "Haz. Loc." The words "Process Control Equipment" may be abbreviated "Proc. Cont. Eq."

When the size or shape of a subassembly makes it impractical to incorporate the product identification text, the product may be marked with the UL Mark for Canada symbol, "QUZW7" and the control number, provided that the complete Listing Mark text appears on the smallest shipping container.

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PROCESS CONTROL EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QVAJ7)

USE AND INSTALLATION

This category covers process control equipment rated 600 V maximum and intended for use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code." These products include instruments for measurement, recording and/or control of process variables (e.g., temperature, pressure, flow) and auxiliary devices used with these instruments (e.g., sensors, transducers, valve operators).

Equipment intended to be installed only in process control panels is so identified in the individual Listings. Such equipment is not intended for field installation.

Intrinsically safe systems have been investigated on the basis that all equipment connected to the system is Listed as part of the system, unless otherwise indicated, and is used as intended.

Safety may be affected if the manufacturer's installation instructions are not followed.

The investigation of process control equipment does not include investigation of the function of the controlled equipment.

RELATED PRODUCTS

Equipment investigated for use only in hazardous (classified) locations of automotive and marine service stations is covered under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7).

Process control equipment intended for use in unclassified locations is covered under Process Control Equipment, Electrical Certified for Canada (QUYX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

PROCESS CONTROL EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QVAJ7)

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 61010-1 (2004), "Safety Requirements for Measurement, Control, and Laboratory Use – Part 1: General Requirements."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Process Control Equipment for Use in Hazardous Locations," "Process Control System for Use in Hazardous Locations," "Process Control Unit for Use in Hazardous Locations," "Process Control Equipment (Associated Apparatus)," "Process Control Unit (Associated Apparatus)," or other appropriate product name as shown in the individual Listings. The words "Hazardous Locations" may be abbreviated "Haz. Loc." The words "Process Control Equipment" may be abbreviated "Proc. Cont. Eq."

When the size or shape of a subassembly makes it impractical to incorporate the product identification text, the product may be marked with the UL Mark for Canada symbol, "QVAJ7" and the control number, provided that the complete Listing Mark text appears on the smallest shipping container.

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PROTECTORS CERTIFIED FOR CANADA (QVGK7)

PRIMARY PROTECTORS FOR COMMUNICATIONS CIRCUITS CERTIFIED FOR CANADA (QVGV7)

GENERAL

This category covers protectors intended for use on communication circuits as defined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

These protectors are intended to suppress abnormal voltage conditions that may exist on the circuit due to accidental contact with electric light or power conductors operating at or over 300 V to ground as defined in the CEC. These devices may also be used to protect against electrical transients from an electromagnetic disturbance or higher than normal voltages induced on the communication circuits due to close proximity of the protected circuit to electric light or power conductors.

This category includes both fuse and fuseless protectors. Requirements for the location and installation of primary protectors are contained in the CEC. The individual certifications provide the following information: Protector block number, catalog numbers of arresters that may be employed in a certified block, types of arresters, design features, maximum fusing wire that is used in series with the block, and indoor or outdoor use.

The maximum size fusing wire is indicated by the following alphabetical designations:

A – 24 AWG, copper wire with thermoplastic insulation
B – 22 AWG, copper wire with thermoplastic insulation
C – 20 AWG, 40% copper-clad wire
D – 26 AWG, copper wire with thermoplastic insulation

Protector blocks suitable for outdoor use are also suitable for use indoors. Blocks marked for indoor use are suitable for installation only indoors.

This category also covers network interface devices, which are two-compartment enclosures that serve to provide a demarcation between the equipment of the private residence and the outside plant. The first compartment, located on the incoming side of the telephone line, may employ a certified compatible telephone protector, where the compatibility is determined by UL. The second compartment employs terminals and standard telephone jacks for use by the resident. Indoor and outdoor certification is subject to the same requirements used in the investigation of telephone protectors.

RELATED PRODUCTS

Separate network interface devices intended for use without a protector are covered under Communication Circuit Accessories Certified for Canada (DUXR7).

Primary Protectors for Communications Circuits Certified for Canada (QVGV7)−*Continued*

Protectors intended for use with municipal fire alarm circuits are covered under Miscellaneous Devices Certified for Canada (UXKV7).

Secondary protectors intended for telephone, telegraph, fire alarm and similar signaling circuits are covered under Secondary Protectors for Communications Circuits Certified for Canada (QVRG7).

ADDITIONAL INFORMATION

For additional information, see Protectors Certified for Canada (QVGK7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 226, ''Protectors in Telecommunication Networks.''

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Signal Circuit Protector,'' ''Telephone Protector,'' ''Network Interface Device'' or ''Signal Circuit Protector Enclosure.''

* *

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SECONDARY PROTECTORS FOR COMMUNICATIONS CIRCUITS CERTIFIED FOR CANADA (QVRG7)

GENERAL

This category covers secondary protectors intended for use on communication circuits as defined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

These protectors are intended to suppress abnormal voltage and/or current conditions that bypass the primary protector. These devices limit currents to less than the current-carrying capacity of certified communication wire employed in the communication loop of the protected premise. Any overvoltage protection and/or grounding connection is intended to be electrically located on the equipment side of the protector's current-limiting means.

Secondary protectors covered under this category have been investigated for use only on the equipment side of a primary protector (QVGV7) and are intended to be installed only on the protected portion of a communication circuit. In those cases where a primary protector is not required, as defined in the CEC, the secondary protector may be installed or connected into the communication circuit without the use of a primary protector.

The current-limiting, fusing or extinguishing operation may be accomplished by a current-protection device located within the secondary protector, or the secondary protector may be used with a ''sneak-current protector.'' A sneak-current protector serves to limit abnormal fault current that is generated due to contact of the telephone lines with AC power lines. The sneak-current protector is a separate device or module that is intended for mounting on a certified compatible base assembly. This current-protection system may employ a fuse, current-limiting circuitry or other similar means to limit the abnormal fault current condition.

RELATED PRODUCTS

Other telephone equipment is covered under Telephone Appliances and Equipment Certified for Canada (WYQQ7).

Primary telephone protectors are covered under Primary Protectors for Communication Circuits Certified for Canada (QVGV7).

Wire and cable intended to be permanently installed in a building in accordance with the CEC is covered under the appropriate wire and cable categories.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA C22.2 No. 226 (1992), ''Protectors in Telecommunication Networks.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory)

Secondary Protectors for Communications Circuits Certified for Canada (QVRG7)−*Continued*

together with the word ″LISTED,″ a control number, and the product name ''Secondary Protector,'' ''Secondary Telephone Protector'' or ''Sneak Current Protector.''

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PROTECTORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QVSC7)

ISOLATED LOOP CIRCUIT PROTECTORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (QVSI7)

USE

This category covers protectors intended for use on Class 2 or Class 3 remote control, signaling and power-limited circuits or fire-protection-signaling circuits.

These protectors are intended as suppression devices for abnormal voltage conditions that may exist on the circuit due to electrical transients from an electromagnetic disturbance. These protectors are not intended for use on circuits exposed to accidental contact with electric light or power conductors operating at over 300 V to ground.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Isolated Loop Circuit Protector for Use in Hazardous Locations.''

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PUMPING EQUIPMENT FOR FIRE SERVICE CERTIFIED FOR CANADA (QVUT7)

The following information and listings relate to fire pumps, drivers, controllers and accessory equipment used in supplying water for fire protection purposes.

A fire pump unit generally includes the separately Listed fire pump, driver, controller, and other accessory equipment. The individually Listed products are intended to be installed and tested for acceptable performance in accordance with the requirements of the Standard of the National Fire Protection Association for the Installation of Centrifugal Fire Pumps, NFPA 20.

Authorities having jurisdiction should be consulted before installation.

CENTRIFUGAL FIRE PUMPS CERTIFIED FOR CANADA (QWWQ7)

Centrifugal fire pumps intended for installation in accordance with NFPA 20 have the following rated capacities: 100, 190, 380, 570, 760, 950, 1140, 1510, 1700, 1890, 2850, 3800, 4750, 5700, 7600, 9500, 11400, 13200, 15100, 17000, 18900 L/M or larger. Residential fire pumps intended for installation in accordance with NFPA 13D have rated capacities as indicated in the individual Listings.

Centrifugal Fire Pumps Certified for Canada (QWWQ7)−*Continued*

Centrifugal fire pumps intended for installation in accordance with NFPA 20 are rated at net head pressures of 280 kPa or more. Residential fire pumps are rated at net head pressures as indicated in the individual Listings.

Where a range of rated net head pressure is shown, the manufacturer can furnish impellers to produce any rated pressure in that range.

The term ''Rated Net Pressure'' represents the capability of each pump at rated speed and rated capacity.

A Split Case, End Suction, or In-Line pump shall be supplied with water under positive pressure. The ''Rated Net Pressure'' will be the pressure at the discharge side of the pump minus the pressure at which water is supplied to the pump.

Vertical turbine pumps are capable of lifting water from a source such as a cistern, pond, creek, river, or from other sources. It should be noted that the lift distance is to be measured from the surface to the water source. Where a pump is located above the water surface, the pressure at the discharge side of the pump will be less than the ''Rated Net Head Pressure'' by an amount, expressed in psi, approximately equivalent to the vertical distance in feet between the center line of the pump discharge and surface of the water source plus loss due to friction in the suction pipe.

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Centrifugal Fire Pumps, End Suction Certified for Canada (QWZU7)

USE AND INSTALLATION

This category covers end-suction centrifugal fire pumps intended to deliver the capacities and net head pressures shown in the individual certifications. Requirements for installation and use of these pumps are contained in ANSI / NFPA 20, ''Installation of Stationary Pumps for Fire Protection.''

These pumps are intended to be installed with the shaft in the horizontal position. The maximum working pressure (kPa) is the maximum pressure that can be developed at the discharge flange under any operating condition. The values indicated in the individual certifications are the maximum for a given model designation; accordingly, the ratings and limitations indicated in the individual certifications and marked on the pump are not intended to be modified.

The rated speed marked on the pump by the manufacturer may vary within + or - 4% of rated speed referenced in the individual certifications.

Where the pump flange pressure rating is less than the maximum allowable discharge head pressures shown in the individual certifications, the flange rating is to prevail.

ADDITIONAL INFORMATION

For additional information, see Centrifugal Fire Pumps Certified for Canada (QWWQ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC / ORD-C448, ''Guide for the Investigation of Pumps for Fire Protection Service.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Centrifugal Fire Pump – End Suction.''

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Centrifugal Fire Pumps, In-line Certified for Canada (QXCZ7)

USE AND INSTALLATION

This category covers in-line centrifugal fire pumps intended to deliver the capacities and net head pressures shown in the individual certifications. Requirements for installation and use of these pumps are contained in ANSI / NFPA 20, ''Installation of Stationary Pumps for Fire Protection.''

Centrifugal Fire Pumps, In-line Certified for Canada (QXCZ7)−*Continued*

These pumps are intended to be installed with the shaft in the vertical position, unless specifically indicated in the individual certifications.

The maximum working pressure (kPa) is the maximum pressure that can be developed at the discharge flange under any operating condition. The values indicated in the individual certifications are the maximum for a given model designation; accordingly, each pump is designed to accommodate specific installation needs and the ratings and limitations indicated in the individual certifications and marked on the pumps are not intended to be modified.

The rated speed marked on the pump by the manufacturer may vary within + or - 4% of rated speed referenced in the individual certifications.

Where the pump flange pressure rating is less than the maximum allowable discharge head pressure shown in the individual certifications, the flange rating is to prevail.

ADDITIONAL INFORMATION

For additional information, see Centrifugal Fire Pumps Certified for Canada (QWWQ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC / ORD-C448, ''Guide for the Investigation of Pumps for Fire Protection Service.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Centrifugal Fire Pump – In-Line.''

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Centrifugal Fire Pumps, Split Case Certified for Canada (QXJY7)

USE AND INSTALLATION

This category covers split-case pumps intended to deliver the rated capacities and net head pressures shown in the individual certifications. Requirements for installation and use of these pumps are contained in ANSI / NFPA 20, ''Installation of Stationary Pumps for Fire Protection.''

These pumps are intended to be installed with the shaft in the horizontal position, unless specifically indicated in the individual certifications that the pump is designed for installation in the vertical position.

The maximum working pressure (kPa) is the maximum pressure that can be developed at the discharge flange under any operating condition. The values indicated in the individual certifications are the maximum for a given model designation; accordingly, each pump is designed to accommodate specific installation needs and the ratings and limitations indicated in the individual certifications and marked on each pump are not intended to be modified.

Where the pump flange rating is less than the maximum allowable discharge head pressure shown in the individual certifications, the flange rating is to prevail.

ADDITIONAL INFORMATION

For additional information, see Centrifugal Fire Pumps Certified for Canada (QWWQ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC / ORD-C448, ''Guide for the Investigation of Pumps for Fire Protection Service.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Centrifugal Fire Pump – Split Case.''

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Centrifugal Fire Pumps, Vertical Turbine Certified for Canada (QXXW7)

USE AND INSTALLATION

This category covers vertical shaft turbine-type fire pumps intended for use in conditions where the source of water is below ground level.

These pumps are intended to deliver the rated capacities and net head pressures shown in the individual certifications. Requirements for installation and use of these pumps are contained in ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection." Manufacturers may furnish pumps with oil-lubricated or water-lubricated line shafts except as noted.

ADDITIONAL INFORMATION

For additional information, see Centrifugal Fire Pumps Certified for Canada (QWWQ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C448, "Guide for the Investigation of Pumps for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Centrifugal Fire Pump – Vertical Turbine."

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INTERNAL-COMBUSTION ENGINES FOR DRIVING STATIONARY FIRE PUMPS CERTIFIED FOR CANADA (QYLU7)

USE AND INSTALLATION

This category covers diesel engines intended for driving stationary fire pumps.

The horsepower ratings presented in individual certifications represent the engine horsepower available at standard SAE conditions for 91 m above sea level (74 cm Hg) and 25°C air temperature, with allowance made for power consumption by accessories, normal engine wear and manufacturing tolerances. Engines are rated at a specific speed or for a speed range or ranges as indicated in the individual certifications. For engines rated for a speed range or ranges, the rated horsepower within the specified speed range or ranges is to be determined by the use of linear interpolation between the rated horsepower at the minimum and maximum speeds. Requirements for installation and use of these engines are contained in ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

Diesel engines are intended to be mounted horizontally unless otherwise indicated.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C448A, "Guide for the Investigation of Diesel Engines for Driving Centrifugal Fire Pumps."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Internal Combustion Engine for Driving Stationary Fire Pumps."

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PUMP CONTROLLERS, FIRE CERTIFIED FOR CANADA (QYZS7)

GENERAL

This category covers fire pump controllers, circuit breakers for fire pump controllers, emergency manual operators and remote alarm panels.

Pump Controllers, Fire Certified for Canada (QYZS7)−*Continued*

Fire pump controllers are intended for starting and stopping centrifugal fire pumps and include nonautomatic and automatic types for electric-driven pumps and combined manual and automatic types for engine-driven pumps. Unless otherwise indicated in the individual certifications, these controllers are intended for use with spark-ignition (gasoline or natural gas) or diesel engines. Controllers suitable for use with spark-ignition internal combustion engines are intended for such engines installed prior to 1974.

These controllers are intended for installation and use in accordance with ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

Fire pump controllers intended for starting and stopping additive pump motors are marked "Additive Pump Controller" or "Limited-service Additive Pump Controller."

Controllers intended for electric-driven, standard-size centrifugal fire pumps are intended for use with squirrel-cage or wound-rotor motors rated 600 V or less.

Controllers intended for squirrel-cage motors may be for across-the-line starting or reduced-voltage starting as indicated in the individual certifications.

"Limited-service controllers" are intended for across-the-line type squirrel-cage motors of 30 hp or less, 600 V or less. Authorities Having Jurisdiction should be consulted before installing controllers of these types.

Manually operable, open-type circuit breakers are intended for use within enclosures of fire pump controllers.

Emergency manual operators are intended for use with internal combustion engines.

Some controllers are suitable for use as service equipment and are so marked. Such marking is an integral part of other required markings.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, "Industrial Control Equipment," and ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Fire Pump Controller," "Limited Service Controller," "Additive Pump Controller," "Limited Service Additive Pump Controller."

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PUMP CONTROLLERS, FIRE, OVER 750 VOLTS CERTIFIED FOR CANADA (QZGR7)

GENERAL

This category covers fire pump controllers having ac voltage ratings in the range of 2.2 kV to 2.5 kV, 4.0 kV to 5.0 kV or 6.2 kV to 7.2 kV, intended for starting and stopping centrifugal fire pumps, and including nonautomatic and automatic types for electric-driven pumps.

These controllers are intended for installation and use in accordance with ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

These fire pump controllers are intended for use with squirrel-cage motors rated 7.2 kV or less.

This equipment has been investigated for use on three-phase circuits having available fault levels not exceeding the MVA rating appearing on the nameplate. The three-phase available symmetrical MVA is equal to the product of the available symmetrical rms short-circuit current, the line-to-line open-circuit voltage, and a phase factor of 1.73×10^6.

These controllers are intended for across-the-line starting and for making and breaking the circuit when the motor is stalled. Accordingly, they are tested at six times the continuous current rating of the controller at rated voltage.

Some fire pump controllers are provided with an integrally mounted surge arrester to meet the required impulse withstand.

Fire pump controllers are suitable for use as service equipment and are so marked. Such marking is an integral part of other required markings.

Pump Controllers, Fire, Over 750 Volts Certified for Canada (QZGR7)−*Continued*

Fire pump controllers are so constructed that falling dirt or water dripping from the downward vertical does not interfere with the successful operation of the equipment.

Fire pump controllers are substantially complete when shipped from the factory and final acceptability for service does not depend upon assembly of parts in the field.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, "Industrial Control Equipment," and ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "High Voltage Fire Pump Controller" or "High Voltage Foam Pump Controller."

* *

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PUMP CONTROLLERS, FIRE, RESIDENTIAL CERTIFIED FOR CANADA (QZKE7)

GENERAL

This category covers fire pump controllers intended for starting, stopping and protecting centrifugal fire pumps in one- and two-family dwellings and manufactured homes. These controllers are the automatic or nonautomatic type for electric-driven pumps.

The equipment and systems employing these controllers are intended for installation and use in accordance with ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes."

Residential fire pump controllers are intended for use with squirrel-cage motors rated 250 V or less.

This equipment has been investigated for use on single-phase alternating-current circuits having available fault-current levels not exceeding the short-circuit withstand rating appearing on the nameplate.

These controllers are intended for across-the-line starting and for making and breaking the circuit when the motor is stalled; accordingly they are tested at six times the continuous current rating of the controller at rated voltage.

Controllers suitable for use as service equipment are so marked. Such marking is an integral part of other required markings.

These controllers are so constructed that falling dirt or water dripping from the downward vertical does not interfere with the successful operation of the equipment.

Residential pump controllers are substantially complete when shipped from the factory and final acceptability for service does not depend upon assembly of parts in the field.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, "Industrial Control Equipment," and ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection," as applicable to limited-service fire pump controllers.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Residential Fire Pump Controller."

* *

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PUMPING EQUIPMENT FOR FIRE SERVICE FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RAHW7)

This category covers fire pumps, drivers, controllers and accessory equipment used in supplying water for fire protection purposes.

A fire pump unit generally includes the separately Listed fire pump, driver, controller, and other accessory equipment. The individually Listed products are intended to be installed and tested for acceptable performance in accordance with CSA-C22.2 No. 14, "Industrial Control Equipment," and ANSI/NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection."

FIRE PUMP CONTROLLERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RCYW7)

USE

This category covers fire pump controllers, circuit breakers for fire pump controllers, and emergency manual operators.

Fire pump controllers are intended for starting and stopping centrifugal fire pumps and include nonautomatic types and automatic types for electric-driven pumps and combined manual and automatic types for engine-driven pumps. Unless otherwise indicated, these controllers are intended for use with spark ignition (gasoline or natural gas) or diesel engines. Controllers suitable for use with spark ignition internal combustion engines are intended for such engines installed prior to 1974.

Controllers for electric-driven, standard-size centrifugal fire pumps are intended for use with squirrel-cage or wound-rotor motors rated 600 V or less.

Controllers for squirrel-cage motors may be used for across-the-line starting or reduced-voltage starting as indicated in the individual certifications.

Limited-service controllers are intended for across-the-line type squirrel-cage motors of 30 hp or less, 600 V or less. Authorities Having Jurisdiction should be consulted before installing controllers of these types.

Manually operable, open-type circuit breakers are intended for use within enclosures of fire pump controllers.

Emergency manual operators are intended for use with internal combustion engines.

Some controllers are suitable for use as service equipment and are so marked. Such marking is an integral part of other required marking.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category are CSA-C22.2 No. 14, "Industrial Control Equipment," and ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Fire Pump Controller for Use in Hazardous Locations," "Limited Service Controller for Use in Hazardous Locations," "Foam Pump Controller for Use in Hazardous Locations," "Limited Service Foam Pump Controller for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

* *

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PUMPS CERTIFIED FOR CANADA (RAOV7)

These pumps, which may be of the positive displacement piston, rotary gear, centrifugal, or vane type, are intended for handling liquids which may be combustible, corrosive or flammable. The various listings and classifications identify such liquids.

FLAMMABLE LIQUID PUMPS CERTIFIED FOR CANADA (RBQR7)

Pumps, Power Operated, Flammable Liquid Certified for Canada (RCRX7)

USE AND INSTALLATION

This category covers power-operated pumps of the types indicated in the individual certifications. Each pump includes means to limit the discharge pressure to 345 kPa (50 psi) or less unless indicated in the individual certifications.

Booster pumps are intended for use with existing self-contained, power-operated dispensing devices if the vertical distance from the booster pump manifold outlet to the dispensing device inlet is not less than 152 cm.

Replacement pump-motor assemblies may be incomplete in their construction, and are only intended for use with equipment as specified in the installation instructions. Pumps intended for use in Class I, Group D hazardous (classified) locations are indicated in the individual certifications.

Pump-motor assemblies include electric motors and appropriate junction boxes that are suitable for use in Class I, Group D hazardous (classified) locations, unless indicated otherwise in the individual certifications.

A motor controller specified in conjunction with a pump-motor assembly is suitable for use with that assembly. Unless indicated otherwise, the controller is not suitable for use in hazardous (classified) locations.

These pumps are intended for use with the following fuels:

a) Gasoline
b) Gasoline/ethanol blends designated as ''gasohol'' (E10 maximum)
c) Diesel fuel
d) Fuel oil
e) Kerosene

These products are intended for installation and use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CSA B346 (1980), ''Power-Operated Dispensing Devices for Flammable Liquids''

CSA-C22.2 No. 22, ''Electrical Equipment for Flammable and Combustible Fuel Dispensers''

CSA-C22.2 No. 25, ''Enclosures for Use in Class II, Groups, E, F and G Hazardous Locations''

CSA-C22.2 No. 30, ''Explosion-Proof Enclosures for Use in Class I Hazardous Locations''

CAN/CSA-C22.2 No. 157, ''Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Operated Pump for Petroleum Products,'' ''Power Operated * Pump for Petroleum Products'' (where ''*'' is ''Transfer,'' ''Booster,'' or other appropriate product name as shown in the individual Listings) or ''Electric Pump Controller,'' or other appropriate product name as shown in the individual Listings.

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PUMPS, ELECTRICALLY OPERATED, LIQUID CERTIFIED FOR CANADA (REUZ7)

USE

This category covers submersible and nonsubmersible pumps for household, commercial or industrial use, including pumps for fountains, circulation, wells, sewage, effluent, irrigation, building sites (contractor type), sumps and general utility.

Pumps suitable for outdoor use and those for use with heated water are so marked.

These pumps have not been investigated for use with or in proximity to swimming pools or spas, for fire service, or for contact with drinking water.

RELATED PRODUCTS

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 108, ''Liquid Pumps.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Sump Pump,'' ''Water Circulating Pump'' or ''Sewage Pump,'' or other appropriate product name as shown in the individual Listings.

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PUMPS, NONFLAMMABLE LIQUID, MARINE CERTIFIED FOR CANADA (RFIX7)

USE AND INSTALLATION

This category covers electrically operated nonflammable liquid pumps rated less than 50 V dc for use on board boats, including potable water pumps.

These pumps are intended for installation and operation in accordance with the manufacturer's instructions and the applicable requirements of the Canadian Coast Guard, and the applicable requirements of CSA-C22.2 No. 183.2 (1983), ''DC Electrical Installations on Boats.''

All pumps are required to comply with the requirements for ignition protection and are so marked.

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is UL 1113, ''Electrically Operated Pumps for Nonflammable Liquids, Marine.''

UL MARK

The Marine Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Marine Listing Mark for these products includes the UL Mark for Canada symbol with the word ''MARINE'' above the UL symbol (as illustrated in the Introduction of this Directory), the word ''LISTED,'' a control number, and the product name ''Nonflammable Liquid Pump.''

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PURGING AND PRESSURIZING CONTROLS AND ACCESSORIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RFPW7)

GENERAL

This category covers purging and pressurizing controls and accessory parts intended to be connected to electrical equipment enclosures that are to be purged and pressurized with clean air or nonflammable gas in accordance with ANSI/NFPA 496, ''Purged and Pressurized Enclosures for Electrical Equipment.'' This category does not cover the purged or pressurized electrical equipment. Purged or pressurized electrical equipment is covered under the individual product category for the particular type of equipment.

TYPES

ANSI/NFPA 496 specifies the following purged pressurization types:

Type X — Reduces the classification within an enclosure from Division 1 to unclassified

Type Y — Reduces the classification within an enclosure from Division 1 to Division 2

Type Z — Reduces the classification within an enclosure from Division 2 to unclassified

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*] FOR USE IN HAZARDOUS LOCATIONS IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARD FOR PURGED AND PRESSURIZED ENCLOSURES FOR ELECTRICAL EQUIPMENT NFPA 496

* **PURGE CONTROL** or **PURGE CONTROL ACCESSORY**, or other appropriate product name as shown in the individual Classifications

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PURGING AND PRESSURIZING CONTROLS AND ACCESSORIES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RFPZ7)

GENERAL

This category covers purging and pressurizing controls and accessory parts intended to be connected to electrical equipment enclosures that are to be purged and pressurized with clean air or nonflammable gas.

There are three pressurization types:

px — Reduces the classification within an enclosure from Zone 1 to unclassified

py — Reduces the classification within an enclosure from Zone 1 to Zone 2

pz — Reduces the classification within an enclosure from Zone 2 to unclassified

This category does not cover the purged or pressurized electrical equipment. Purged or pressurized electrical equipment is covered under the individual product category for the particular type of equipment.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 60079-2 (2012), ''Explosive Atmospheres – Part 2: Equipment Protection by Pressurized Enclosures 'p'.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*] FOR USE IN HAZARDOUS LOCATIONS IN ACCORDANCE WITH CAN/CSA-C22.2 NO. 60079-2 EXPLOSIVE ATMOSPHERES – PART 2: EQUIPMENT PROTECTION BY PRESSURIZED ENCLOSURES ″p″ Control No.

* **PURGE CONTROL** or **PURGE CONTROL ACCESSORY**, or other appropriate product name as shown in the individual Classifications.

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ELECTRICAL QUICK-CONNECT TERMINALS CERTIFIED FOR CANADA (RFWV7)

GENERAL

This category covers quick-connect tabs and quick-connect connectors constructed from plain or plated copper alloy or of nickel or nickel alloy, herein referred to as quick-connect terminals. They are additionally defined as follows:

Quick-connect Wiring Termination — An electrical connection consisting of a male tab and a female connector that can be readily engaged or disengaged without the use of a tool.

Terminal — An electrical connecting device consisting of either a connector or tab.

Tab — A terminal that is inserted in a connector, manufactured to specified tolerances, and intended to mate with a connector to establish a connection in an electrical circuit.

Connector — A terminal that is pushed onto a tab.

Quick-connect terminals are intended for use with one or two copper conductors, 22–10 AWG. Ampacity for a two-wire combination is limited to the current associated with the largest of the two conductors.

Quick-connect terminals are not intended for disconnecting under load.

PRODUCT MARKINGS

Cartons containing quick-connect terminals are marked to indicate whether the tab or connector is suitable for the internal wiring of appliances, for field termination of conductors to electrical equipment, or for both.

Cartons containing quick-connect terminals are marked to indicate their suitability for termination of copper wire only.

Cartons containing insulated quick-connect terminals are marked with a voltage rating and the maximum operating temperature for which they have been found acceptable. The marked voltage rating may be 300 V maximum; 600 V maximum; or 600 V maximum building wire, 1000 V maximum signs or fixtures.

Quick-connect terminals to be assembled to wire using a special tool are intended to be assembled using the tool specified by the manufacturer on or in the shipping carton. Such tools are identified by an appropriate marking.

RELATED PRODUCTS

Quick-connect tabs or connectors constructed from plated steel, or unplated steel of a corrosion-resistant alloy are covered under Electrical Quick-connect Terminals Certified for Canada (RFWV8).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 153, ''Electrical Quick-Connect Terminals.''

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduc-

tion of this Directory) together with the word "LISTED," a control number, and the product name "Quick-connect Tab" or "Quick-connect Connector," or other appropriate product name as shown in the individual Listings.

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RACEWAY CERTIFIED FOR CANADA (RGKT7)

CELLULAR METAL FLOOR RACEWAY CERTIFIED FOR CANADA (RHZX7)

GENERAL

This category covers cellular metal floor raceway intended to enclose electrical conductors. This raceway is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Each component is provided with installation instructions to identify its relation to other components of the raceway system.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 79, "Cellular Metal and Cellular Concrete Floor Raceways and Fittings."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cellular Metal Floor Raceway," "Cellular Metal Floor Raceway Bottom" or "Cellular Metal Floor Raceway Cover Plate for Use with Listed Raceway Bottom," or other appropriate product name as shown in the individual Listings.

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Cellular Metal Floor Raceway Fittings Certified for Canada (RINV7)

USE AND INSTALLATION

This category covers cellular metal floor raceway fittings intended to enclose electrical conductors. These fittings are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Each component is provided with installation instructions to identify its relation to other components of the raceway system.

ADDITIONAL INFORMATION

For additional information, see Cellular Metal Floor Raceway Certified for Canada (RHZX7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 79, "Cellular Metal and Cellular Concrete Floor Raceways and Fittings."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cellular Metal Floor Raceway Fitting," "End Closure" or "Grommet," or other appropriate product name as shown in the individual Listings.

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SURFACE METAL RACEWAY CERTIFIED FOR CANADA (RJBT7)

USE

This category covers surface metal raceway intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

The number, type and size of conductors which may be installed in the certified raceway is marked on the raceway, on the installation instruction sheet or on the package in which it is shipped.

Raceway for use with lighting fixtures and/or other devices is marked to this effect on the raceway or on the package in which it is shipped.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 62 (1993), "Surface Raceway Systems."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Surface Metal Raceways," "Surface Metal Raceway Base for Use with Labeled Raceway Cover" or "Surface Metal Raceway Cover for Use with Labeled Raceway Base."

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Surface Metal Raceway Fittings Certified for Canada (RJPR7)

USE

This category covers surface metal raceway fittings intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

Fittings suitable for supporting a ceiling-suspended fan weighing a maximum 15.9 kg or 23 kg is visibly and clearly marked "ACCEPTABLE FOR FAN SUPPORT OF ___ kg (___ lb) OR LESS" and "CONVIENT AU SUPPORT D'UN VENTILATEUR DE ___ kg (___ lb) OU MOINDRE," with blanks filled in with maximum values. Each fitting is provided with size No. 10-32 retaining screws and external tooth-lock washers for securing the fan.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 62 (1993), "Surface Raceway Systems."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Surface Metal Raceway Fitting," "Hanger" or "Side Feed," or other appropriate product name as shown in the individual Listings.

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SURFACE NONMETALLIC RACEWAY CERTIFIED FOR CANADA (RJTX7)

USE

This category covers surface nonmetallic raceway for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

The number, type and size of conductors which may be installed in the certified raceway is marked on the raceway, on the installation instruction sheet or on accompanying literature, or on the package in which it is shipped.

Surface Nonmetallic Raceway Certified for Canada (RJTX7)−*Continued*

Raceway provided with adhesive strips is marked "For Class 2 Circuits Only" or "For Power and Communication Circuits, Use Screws," or equivalent.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 62.1, "Nonmetallic Surface Raceways and Fittings."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Surface Nonmetallic Raceway," "Surface Nonmetallic Raceway Base for Use with Labeled Raceway Cover" or "Surface Nonmetallic Raceway Cover for Use with Labeled Raceway Base."

The Listing Mark is applied to each length or package of complete raceway, raceway cover or raceway base.

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Surface Nonmetallic Raceway Fittings Certified for Canada (RJYT7)

USE

This category covers surface nonmetallic raceway fittings intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT MARKINGS

A fitting intended for supporting a luminaire is marked "Suitable for a fixture not exceeding ____ kg (lb)." The specified luminaire weight should not exceed 22.7 kg (50 lb). The marking is readily visible after the fitting has been mounted.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 62.1, "Nonmetallic Surface Raceways and Fittings."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Surface Nonmetallic Raceway Fitting," "Butt Joint Cover" or "End Cap," or other appropriate product name as shown in the individual Listings.

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UNDERFLOOR RACEWAY CERTIFIED FOR CANADA (RKCZ7)

USE

This category covers metal underfloor duct systems designed for use as raceway for the installation of wire and cable in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and the manufacturer's installation instructions.

PRODUCT MARKINGS

The raceway may consist of factory-constructed raceway or field-installed components forming a raceway. Each component is provided with installation instructions to identify its relation to the other components of the raceway.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Underfloor Raceway Certified for Canada (RKCZ7)−*Continued*

The basic standard used to investigate products in this category is CSA C22.2 No. 80 (1978), "Underfloor Raceways and Fittings."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Underfloor Raceway."

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Underfloor Raceway Fittings Certified for Canada (RKQX7)

USE AND INSTALLATION

This category covers underfloor raceway fittings intended for installation in underfloor raceway systems in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and the manufacturer's installation instructions.

Each component is provided with installation instructions to identify its relation to the other components of the raceway system.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 80 (1978), "Underfloor Raceways and Fittings."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Underfloor Raceway Fitting," "Raceway Adapter" or "Saddle Support," or other appropriate product name as shown in the individual Listings.

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RADIO DEVICES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RMGR7)

GENERAL

This category covers portable signal receivers, portable signal and voice receivers, and portable voice transceivers.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the UL Mark for Canada symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Radio Device for Use in Hazardous Locations" (or "RAD DEV for Use in Hazardous Locations" or "RAD DEV for Use in HAZ LOC").

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RADIO DEVICES, REBUILT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RMGZ7)

USE

This category covers rebuilt portable signal receivers, portable signal and voice receivers and portable voice transceivers. These products are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt products are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt products are subject to the same requirements as new products.

PRODUCT MARKINGS

These products are marked with the following:

The month and year that the product was repaired or rebuilt.

The standard number and edition to which the product was rebuilt, as referenced under **REQUIREMENTS**.

RELATED PRODUCTS

See Radio Devices for Use in Hazardous Locations Certified for Canada (RMGR7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 157 (1992), "Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations," or CSA-C22.2 No. 213 (1987), "Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Rebuilt Radio Device for Use in Hazardous Locations" (or "Rebuilt RAD DEV for Use in Hazardous Locations" or "Rebuilt RAD DEV for HAZ LOC") or "Repaired Radio Device for Use in Hazardous Locations" (or "Repaired RAD DEV for Use in Hazardous Locations" or "Repaired RAD DEV for HAZ LOC").

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RADIO DEVICES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RMJA7)

GENERAL

This category covers portable signal receivers, portable signal and voice receivers, and portable voice transceivers.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product, or the Listing Mark on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with

the word "LISTED," a control number, and the product name "Radio Device for Use in Hazardous Locations" (or "RAD DEV for Use in Hazardous Locations" or "RAD DEV for Use in HAZ LOC").

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RECEPTACLE-PLUG COMBINATIONS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RRAT7)

RECEPTACLE-ENCLOSURE COMBINATIONS WITH PLUGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RREG7)

GENERAL

This category covers receptacle-enclosure combinations with plugs intended for use in one or more of the following hazardous locations, as indicated on the product, in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC): Class I, Groups A, B, C and D; Class II, Groups F and G.

These receptacle-enclosure combinations with plugs are (1) completely assembled at the factory or (2) intended for final assembly in the field using components specified in the product classification. Assembly of the receptacle-enclosure combinations with plugs in the field is intended to be in accordance with the instructions provided with the product by the manufacturer.

Enclosures covered under this category are for threaded rigid conduit connection, and the conductors between the receptacle and the enclosure are factory sealed. The plugs are for use with extra-hard-usage flexible cord having a grounding conductor.

The flexible cord connecting to the plugs should be frequently inspected and replaced when necessary. Terminal connection to the cord must be properly made and maintained. Safe use also depends on the maintenance of insulation at the current-carrying parts of the plug and receptacle. The devices should, therefore, not be used where insulation may be impaired by moisture, dirt or other foreign material.

Authorities Having Jurisdiction should be consulted with regard to the conditions under which these devices will be permitted for use. It is recognized that portable equipment should be used only where necessary.

Receptacle-enclosure combinations with plugs certified for Class II, Group F locations are for use only in atmospheres containing electrically nonconductive dusts as defined in the CEC.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 159, "Attachment Plugs and Receptacles for Use in Hazardous Locations."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RECEPTACLE-ENCLOSURE COMBINATION WITH PLUG
FOR USE IN HAZARDOUS LOCATIONS
AS TO EXPLOSION AND FIRE HAZARD ONLY
CLASS ____, GROUP ____
Control No.

* *

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RECEPTACLES WITH PLUGS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RROR7)

GENERAL

This category covers receptacles with plugs certified under Class I and Class II groups for Division 1 locations provided with receptacle conduit boxes for threaded rigid conduit connection. The conductors between receptacles and conduit boxes are factory sealed. The plugs are for use with certified extra-hard-usage flexible cord having a grounding conductor.

Receptacles certified for Class I, Division 2 locations only are intended for use with general-purpose enclosures for supply connections. The supply conductors are factory sealed in the receptacles. The plugs for use with such receptacles are suitable for Class I, Division 1 locations.

Receptacles with plugs certified for groups under Class I hazardous locations have been subjected to endurance tests and overload operation tests in the presence of the specific flammable vapor-air atmospheres.

Receptacles with plugs certified for use in Class II, Group F locations are for use only in atmospheres containing electrically nonconductive dusts as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Receptacles with plugs certified for Class II, Groups F and G hazardous locations have dust-tight terminal boxes and have been subjected to endurance tests and overload operation tests while heavily blanketed with combustible dust.

The flexible cord should be frequently inspected and replaced when necessary. Terminal connections to the cord must be properly made and maintained. Safe use also depends on the maintenance of insulation at current-carrying parts of the plug and receptacle. The devices should, therefore, not be used where the insulation may be impaired by moisture, dirt or other foreign material.

Authorities Having Jurisdiction should be consulted with regard to conditions under which these devices will be permitted for use. It is recognized that portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 159 (1987), "Attachment Plugs, Receptacles and Similar Wiring Devices for Use in Hazardous Locations: Class I, Groups A, B, C and D; Class II, Group G, in Coal or Coke Dust, and in Gaseous Mines."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Plug for Hazardous Locations" or "Receptacle Assembly for Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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RECEPTACLES WITH PLUGS INTERLOCKED WITH SWITCHES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RSPX7)

GENERAL

This category covers receptacles that are (1) completely assembled at the factory or (2) intended for final assembly in the field using components specified in the individual certifications. Final assembly of receptacles in the field is to be done in accordance with instructions provided with the product by the manufacturer.

Receptacles with plugs interlocked with switches certified under Class I and Class II groups are constructed with interlocked switch and plug so that the plug cannot be withdrawn or inserted when the switch is closed. These devices have provision for connection of threaded rigid metal conduit to the switch compartments. The plugs are intended for use with extra-hard-usage flexible cord having a grounding conductor.

Receptacles with plugs interlocked with switches certified for Class II, Group F locations are for use only in atmospheres containing electrically nonconductive dusts as defined by CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Receptacles with Plugs Interlocked with Switches for Use in Hazardous Locations Certified for Canada (RSPX7)−*Continued*

Devices provided with a factory seal of conductors between switch and the conduit box are so identified on the individual product.

The flexible cord connecting to these devices should be frequently inspected and replaced when necessary. Terminal connections to the cord must be properly made and maintained. Safe use also depends on the maintenance of insulation at current-carrying parts of the plug and receptacle. The devices should, therefore, not be used where the insulation may be impaired by moisture, dirt or other foreign material.

Authorities Having Jurisdiction should be consulted with regard to conditions under which these devices will be permitted for use. It is recognized that portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 159 (1987), "Attachment Plugs, Receptacles and Similar Wiring Devices for Use in Hazardous Locations: Class I, Groups A, B, C and D; Class II, Group G, in Coal or Coke Dust, and in Gaseous Mines."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Receptacle Interlocked with Switch for Hazardous Locations," "Plug for Hazardous Locations," "Receptacle Cover Assembly Interlocked with Switch for Hazardous Locations," "Body Assembly for Hazardous Locations," or other appropriate product name.

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RECEPTACLE-PLUG COMBINATIONS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RSUN7)

RECEPTACLES WITH PLUGS INTERLOCKED WITH SWITCHES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (RSZD7)

USE

This category covers receptacles that are (1) completely assembled at the factory, or (2) intended for final assembly in the field using components specified in the individual certifications. Final assembly of receptacles in the field is intended to be done in accordance with instructions provided with the product by the manufacturer. Care should be taken to ensure that minimum IP ratings are maintained for field-assembled increased safety enclosures.

Receptacles with plugs interlocked with switches are constructed with an interlocked switch and plug so that the plug cannot be withdrawn or inserted when the switch is closed. These devices have provision for connection of threaded rigid metal conduit or other suitable wiring method to the switch compartments. The plugs are for use with extra-hard-usage flexible cord having a grounding conductor.

The flexible cord connecting to these devices should be frequently inspected and replaced when necessary. Terminal connections to the cord must be properly made and maintained. Safe use also depends on the maintenance of insulation at current-carrying parts of the plug and receptacle. The devices should not be used where the insulation may be impaired by moisture, dirt or other foreign material.

Authorities Having Jurisdiction should be consulted with regard to conditions under which these devices are permitted for use. Portable equipment should be used only where necessary.

ADDITIONAL INFORMATION

Receptacles with Plugs Interlocked with Switches for Use in Zone Classified Hazardous Locations Certified for Canada (RSZD7)−*Continued*

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Receptacle Interlocked with Switch for Hazardous Locations," "Plug for Hazardous Locations," "Receptacle Cover Assembly Interlocked with Switch for Hazardous Locations," "Body Assembly for Hazardous Locations," or other appropriate product name as shown in the individual Listings.

* *

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RECEPTACLES CERTIFIED FOR CANADA (RTDV7)

GENERAL:

These listings cover the following types of products:

Appliance, Equipment or Fixture Outlet - A female contact device for mounting on utilization equipment.

Receptacle - A female contact device intended to be installed on a wiring system to supply current to utilization equipment.

RATINGS:

These devices are rated in volts 600 volts or less, ac or dc; and in amps 200 amps or less. They may also be rated in horsepower.

Devices rated 250 volts are tested on circuits involving a nominal potential to ground of 125 volts. Devices having other voltage ratings are tested on circuits involving full rated potential to ground except for multiphase rated devices which are tested on circuits consistent with their voltage ratings, i.e. a 120/208 volt, 3-phase, device is tested on a circuit involving 120 volts to ground.

BONDING:

Devices having a terminal identified by a green colored finish or by the word "green" are bonding types. The blade, pin or contact member connected to this terminal is for equipment bonding purposes only.

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RECEPTACLES FOR PLUGS AND ATTACHMENT PLUGS CERTIFIED FOR CANADA (RTRT7)

GENERAL

This category covers receptacles consisting of one or more female contact devices on the same yoke, installed at an outlet for the connection of one or more attachment plugs, and including duplex, single, flush mounted, surface mounted, split, isolated ground, hospital type and appliance receptacles, used mainly in household, office and industrial applications and in electrical and electronic equipment.

This category does not cover general-use attachment plugs and cord connectors, switched receptacles or current taps.

TERMINALS

Terminals of 15 A and 20 A receptacles are for use with copper conductors only. Screwless terminal connectors of the conductor push-in type are for use only with solid copper conductors.

Terminals of receptacles greater than 20 A not marked "AL-CU" are for use with copper conductors only.

Terminals of the wire-binding screw, setscrew, or screw-actuated backwired clamping types are suitable for use with both solid and stranded

Receptacles for Plugs and Attachment Plugs Certified for Canada (RTRT7)−*Continued*

building wires. Screwless terminal connectors of the conductor push-in type are limited to use on 14 AWG solid building wire only.

Single and duplex receptacles rated 15 A and 20 A that are provided with more than one set of terminals for the connection of line and neutral conductors may be used to feed a single set of branch-circuit conductors connected to other receptacles on a multioutlet branch circuit. These devices have not been tested for tapping off more than one circuit from the receptacle by utilizing both the side-wiring and back-wiring terminals on an outlet.

Duplex receptacles rated 15 A and 20 A that are provided with break-off tabs may have those tabs removed so that the two outlets may be wired in a multiwire branch circuit.

PRODUCT MARKINGS

These devices are marked with:

1. Listee's name or identification on device
2. Catalog number or equivalent on device or carton
3. Complete electrical rating
4. Terminal identification
5. Date code or equivalent (except on isolated ground types)
6. Additional markings as required

Isolated Ground — Receptacles in which the bonding terminal is purposely insulated from the receptacle mounting means are so identified by an orange triangle marked on the face of the receptacle and the marking "ISOLATED GROUND."

Hospital Type — Receptacles for hospital use in patient care areas are identified by the marking "Hospital Grade" and a green dot on the face of the receptacle. The identification is visible during installation on the wiring system.

ADDITIONAL INFORMATION

For additional information, see Receptacles Certified for Canada (RTDV7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 42 (1999), "General Use Receptacles, Attachment Plugs, and Similar Wiring Devices."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Attachment Plug," "Plug," "Receptacle" (or "Recept."), "Attachment Plug with Overload Protection," "Attachment Plug Fuseless," or other appropriate name as shown in the individual Listings.

* *

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RECEPTACLES, STAGE TYPE CERTIFIED FOR CANADA (RUFR7)

GENERAL

This category covers special-use attachment plugs, cord connectors, receptacles and equipment power inlets intended for use in theater and motion-picture applications in accordance with Sections 44 and 48 respectively, of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

This category does not cover general-use attachment plugs and connector bodies, CO/ALR receptacles, switched receptacles or current taps.

PRODUCT MARKINGS

These devices are marked as follows:

1. Listee's name or identification on device and carton
2. Catalog number or equivalent on device or carton
3. Complete electrical rating
4. Terminal identification by color or otherwise
5. Date code or equivalent
6. "CU-AL" where applicable
7. Additional markings as required

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 182.3, "Special Use Attachment Plugs, Receptacles and Connectors."

Receptacles, Stage Type Certified for Canada (RUFR7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED", a control number, and one of the following product names as appropriate: "Plug," "Connector," "Stage Type Plug," "Stage Type Connector," or other appropriate product name.

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COMBINATION RECEPTACLES WITH SWITCHES CERTIFIED FOR CANADA (RUSZ7)

GENERAL

This category covers combination receptacle and switch devices on the same mounting yoke, intended for household, office and industrial applications.

These devices are marked as follows:

a. Listee's name or identification on device
b. Catalog number or equivalent on device or carton
c. Complete electrical rating
d. Terminal identification
e. Date code
f. Additional markings as required in the Reports

RELATED PRODUCTS

See Snap Switches Certified for Canada (WJQR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 42, "General Use Receptacles, Attachment Plugs and Similar Wiring Devices," and CSA-C22.2 No. 111, "General-Use Snap Switches."

UL MARK

The Listing Mark of UL on the product, or the UL symbol stamped or molded into the product and the Listing Mark on the smallest unit packaging is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Receptacle/Switch."

In lieu of the UL symbol stamped or molded into the product, "UNDERWRITERS LABORATORIES INC. LISTED" (or "UND. LAB. INC. LIST.") may be stamped or molded into the product. When marked as such, the Listing Mark shall appear on the smallest unit packaging.

* *

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SINGLE-POLE, LOCKING-TYPE SEPARABLE ATTACHMENT PLUGS, PANEL INLETS, PANEL OUTLETS, ADAPTERS AND ACCESSORIES CERTIFIED FOR CANADA (RUUS7)

GENERAL

This category covers single-pole, locking-type separable attachment plugs, cord connectors, panel inlets, panel outlets, adapters and accessories, rated up to a maximum of 800 A and up to 600 V ac or dc. These devices are intended to provide power from feeders or branch circuits, or are for direct connection to feeders or branch circuits in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These devices are not intended for use in hazardous (classified) locations.

Attachment plugs and cord connectors are intended for use with single-conductor cable, having copper conductors only.

Single-pole, Locking-type Separable Attachment Plugs, Panel Inlets, Panel Outlets, Adapters and Accessories Certified for Canada (RUUS7)−*Continued*

Inlets and outlets are intended for use with single-conductor cable, having copper conductors only, or to copper busbars.

CURRENT INTERRUPTION

These devices are not intended for connection or disconnection under load conditions.

INTERMATEABILITY

Devices identified as Series 15, 16 or 18 are capable of being mated together between different Listees' lines of products. Devices that are not identified as Series 15, 16 or 18 are only intended to mate with the Listee's same line of products covered under this category.

Refer to Annex B of CSA-C22.2 No. 1691, "Single Pole Locking-Type Separable Connectors," for Series 15, 16 and 18 configurations.

ENVIRONMENTAL RATING

Devices identified as Series 15, 16 or 18 have a minimum environmental enclosure rating of Type 3R when mated, and are marked accordingly. Devices identified other than Series 15, 16 or 18 have a minimum rating of Type 1 and are marked accordingly.

ELECTRICAL RATING

Devices identified as Series 15 are rated 150 A maximum, 600 V maximum.

Devices identified as Series 16 or 18 are rated 400 A maximum, 600 V maximum.

Devices identified other than Series 15, 16 or 18 are rated in ampere, voltage and frequency ac or ac/dc, or in maximum ampere, maximum voltage and frequency ac or ac/dc, and are so marked.

GROUNDED DEVICES

Devices designated for connection to the grounded circuit conductor are identified by a white-colored housing. The pin or contact member connected to this terminal is for the grounded conductor only.

Panel inlets and panel outlets designated for connection to the grounded circuit conductor are identified by either a white-colored housing or by housing surfaces colored white adjacent to both the grounded terminal and grounded pin or contact.

GROUNDING

Devices designated for connection to the grounding circuit conductor are identified by a green- or green/yellow-colored housing. The pin or contact member connected to this terminal is for the grounding conductor only.

Panel inlets and panel outlets designated for connection to the grounding circuit conductor are identified by either a green-colored housing or by housing surfaces colored green adjacent to both the grounding terminal and grounding pin or contact.

PRODUCT MARKINGS

These devices are marked with:

1. The Listee's name or identification
2. The electrical rating
3. The statement, "CAUTION – Risk of Electric Shock. Do Not Disconnect Under Load," or equivalent following the word "CAUTION"
4. Series 15, 16 or 18 configurations, if applicable
5. The environmental type rating(s)

ADDITIONAL INFORMATION

For additional information, see Receptacles Certified for Canada (RTDV7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1691 (2012), "Single Pole Locking-Type Separable Connectors."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Attachment Plug," "Fuseless Attachment Plug," "Plug," "Receptacle" (or "Recept."), "Connector," or other appropriate product name as shown in the individual Listings.

* *

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RECORD-PROTECTION DEVICES CERTIFIED FOR CANADA (RWIT7)

This category covers record protection equipment intended to provide protection to paper records (Class 177) against loss by fire of controlled extent and severity for periods designated by the hourly ratings indicated in the individual Classifications.

Record protection equipment (Classes 66 and 52) is also intended to provide protection to records other than paper against loss by fire of controlled extent and severity for periods designated by the hourly ratings indicated in the individual Classifications. Class 66-rated devices afford protection to magnetic tapes and other types of magnetic data processing media, photographic film and records other than paper. Class 52-rated devices afford protection to certain types of flexible disks.

Record protection equipment investigated for impact resistance (as indicated in the individual Classifications) is intended to provide protection to records in buildings when collapse may or may not be expected to occur as a result of fire since the rating includes investigation of impact stability.

Record protection equipment not investigated for impact resistance is not intended to provide protection in buildings when collapse may be expected to occur as a result of fire since the rating does not include an investigation of impact stability. Record protection equipment not investigated for impact resistance which is rated Class 177 provides less protection to records than does record protection equipment investigated for impact resistance rated Class 177 as evidenced by the location at which interior temperatures are measured during the fire tests.

The fire-resistance rating indicated in the individual Classifications may be seriously impaired by disturbance or injury of the insulation material due to fire, burglary or improper application of accessories. Repairs to insulation or steel components should be made at the manufacturer's factory.

Authorities Having Jurisdiction should be consulted as to which fire-resistance rating of a record protection device will be suitable for the situation where it is to be used.

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RECORD-PROTECTION EQUIPMENT CERTIFIED FOR CANADA (RYPH7)

GENERAL

This category covers record protection equipment consisting of self-contained devices that incorporate insulated bodies, doors, drawers or lids, or nonrated multidrawer devices housing individually-rated containers that contain one or more inner compartments for storage of records. These devices are intended to provide protection to one or more types of records as evidenced by the assigned Class rating or ratings: Class 177 for paper, Class 66 for magnetic computer tapes and photographic film, and Class 52 for flexible disks. Inner compartments of record protection equipment may bear labels indicating the Class ratings, if different from the Class rating of the basic outer unit.

Record protection equipment is effective in withstanding:

1. A standardized fire of controlled extent and severity for one of the following periods: 4 hr reaching 1090°C, 2 hr reaching 1010°C, 1 hr reaching 927°C, or 1/2 hr reaching 843°C depending upon its hourly rating; before the interior temperature of the compartment exceeds the rated Class temperature (177°C, 66°C or 52°C) during the period of fire exposure and the cooling period inside the furnace after the fire exposure.
2. A sudden heating at 1090°C for 30 min (20 min for units rated 1/2 hr) without producing an explosion sufficient to cause an opening into the interior and without destroying the usability of paper contents.
3. At the option of the manufacturer, and as indicated in the individual Classifications, an impact due to falling 9.1 m in the clear after being heated for 60 min, 45 min, 30 min or 20 min for devices rated 4, 2, 1 and 1/2 hr, respectively; and reheating in the inverted position for the same length of time (60 min, 45 min, 30 min or 20 min) after the impact without destroying the usability of the papers stored inside.

UNEVALUATED FACTORS

The ability of nonpaper records to withstand the exposure, or store or retain data has not been investigated.

These devices have not been investigated for their acceptability of use after exposure to fire and being impacted.

These devices have not been investigated for security protection.

ADDITIONAL INFORMATION

Record-protection Equipment Certified for Canada (RYPH7)−*Continued*

For additional information, see Record Protection Devices Certified for Canada (RWIT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C72-1992, "Tests for Fire Resistance of Record Protection Equipment."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RECORD PROTECTION EQUIPMENT
AS TO FIRE RESISTANCE
RATING: CLASS +-++ HR
No.
or

RECORD PROTECTION EQUIPMENT
AS TO FIRE AND IMPACT RESISTANCE
RATING: CLASS +-++ HR
No.

When individual compartments are investigated, the Classification Mark will also include the following statement:

SEE MARKINGS INSIDE UNIT FOR CLASS RATING
APPLICABLE TO INDIVIDUAL COMPARTMENTS

\+ **177**, **66** or **52**
++ **1/2**, **1**, **2**, **3** or **4**

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REELS, CORD FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (SAOD7)

USE AND INSTALLATION

This category covers cord reels intended for use with extra-hard-usage cord, having a grounding conductor, for connecting portable electrical devices to supply lines. A terminal compartment is provided for connection to threaded rigid conduit systems. Authorities Having Jurisdiction should be consulted with regard to conditions under which these devices will be permitted for use. It is recognized that portable equipment should be used only when necessary.

The flexible cord should be inspected frequently and replaced when necessary. Terminal connections to the cord should be properly made and maintained.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cord Reel for Use in Hazardous Locations."

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REELS, CORD FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (SAOX7)

GENERAL

This category covers cord reels for use with extra-hard-usage flexible cord, having a grounding conductor, for connecting portable electrical devices to supply lines. A terminal compartment is provided for connection to threaded rigid conduit systems.

Authorities Having Jurisdiction should be consulted with regard to conditions under which these devices will be permitted for use. It is recognized that portable equipment should be used only where necessary.

The flexible cord should be inspected frequently and replaced when necessary. Terminal connections to the cord should be properly made and maintained.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Cord Reel for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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REELS, CORD AND CABLE CERTIFIED FOR CANADA (SBCV7)

USE

This category covers reels, usually spring-powered, to pay out and retract flexible cord and cable, employed for supply of portable or mobile equipment.

Electrical ratings of reels are marked on the reels where readily visible. The reels are supplied with a length of cord or cable and intended for use with the reel. The electrical ratings cover the complete assemblies.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 21, ''Cord Sets and Power Supply Cords.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Cord Reel,'' ''Cable Reel'' or ''Reel.''

* *

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REFRIGERATION EQUIPMENT CERTIFIED FOR CANADA (SCER7)

This category covers mechanical compression refrigeration systems and absorption-type refrigeration systems, including refrigerant-containing components and associated controls intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Some of this equipment may employ water to directly or indirectly cool the refrigerant condenser. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to connection to water supply and waste disposal lines.

* *

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REFRIGERANT-LEAK-DETECTION EQUIPMENT CERTIFIED FOR CANADA (SCFE7)

USE

This category covers electronic refrigerant-leak-detection equipment used to detect leaks in refrigeration systems.

Some equipment has been investigated for performance characteristics contained in SAE J1627, ''Performance Criteria for Electronic Refrigerant Leak Detectors.''

This equipment has not been investigated for operation in hazardous (classified) locations.

PRODUCT MARKINGS

This equipment is marked with the manufacturer's name and model number.

Equipment investigated for performance in accordance with SAE J1627 is marked ''Design Certified by Underwriters Laboratories Inc. to meet SAE J1627 [date] for [type of refrigerant].''

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120 (1991), ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerant Leak Detection Equipment.''

* *

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REFRIGERANT RECOVERY/RECYCLING EQUIPMENT CERTIFIED FOR CANADA (SCFQ7)

This category covers equipment intended to remove and/or recycle refrigerant from commercial and/or automotive refrigerant systems.

Automotive Refrigerant-extraction Equipment Certified for Canada (SCHL7)

USE

This category covers automotive refrigerant-extraction equipment intended to remove refrigerant from automotive refrigerant systems.

This equipment is rated 600 V or less and may be either cord or permanently connected to the source of supply in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II.''

This equipment has been investigated to determine that it meets the extraction specifications for refrigerant recovery to ensure that venting of refrigerant will not occur, and may be marked ''Design Certified by Underwriters Laboratories Inc. to Meet [applicable standard and issue date, e.g., SAE J2209 (issue date) for CFC-12] for use with [refrigerant type]. The refrigerant from this equipment must be processed to ARI Standard 700-88 before reuse in a mobile air conditioning system.'' This marking indicates that the equipment has been investigated for compliance with the applicable SAE requirements. The refrigerant removed by this equipment is intended to be returned to a refrigerant reclamation facility for processing.

PRODUCT MARKINGS

These products are marked with the manufacturer's name, model number, electrical rating, the type and amount of refrigerant and the design pressures.

Automotive Refrigerant-extraction Equipment Certified for Canada (SCHL7)−*Continued*

Equipment intended for outdoor use is so marked.

RELATED PRODUCTS

Equipment intended for recovery / recycling of refrigerants used air conditioning systems of mobile vehicles is covered under Refrigerant Recovery / Recycling Equipment, Automotive Certified for Canada (SCMA7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN / CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Automotive Refrigerant Extraction Equipment.''

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Commercial Refrigerant Recovery Equipment Certified for Canada (SCIJ7)

GENERAL

These category covers refrigerant recovery equipment, including passive systems, intended to remove refrigerant from commercial refrigerant systems.

This equipment has been investigated for safety when removing refrigerant in any condition from a system and storing it in an external container without testing or processing the refrigerant. The use of this equipment to reduce contaminants, such as moisture, oil, noncondensable gas, acidity, particulate matter and the like, has not been investigated.

RELATED PRODUCTS

Refrigerant recovery hose assemblies are covered under Tubing, Refrigerant Certified for Canada (SFCS8).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN / CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerant Recovery Equipment.''

* *

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Commercial Refrigerant Recovery/recycling Equipment Certified for Canada (SCKG7)

USE

This category covers refrigerant recovery / recycling equipment intended to remove and recycle refrigerant from commercial refrigerant systems.

This equipment has been investigated for safety when removing and recycling refrigerant in any condition from a system or storing it in an external container without necessarily testing or processing the refrigerant. The use of this equipment to reduce contaminants, such as moisture, oil, noncondensable gas, acidity, particulate matter and the like, has not been investigated.

ADDITIONAL INFORMATION

Commercial Refrigerant Recovery / recycling Equipment Certified for Canada (SCKG7)−*Continued*

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN / CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Commercial Refrigerant Recovery / Recycling Equipment.''

* *

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Refrigerant Recovery/recycling Equipment, Automotive Certified for Canada (SCMA7)

USE

This category covers refrigerant recovery / recycling equipment used to service automobiles, light trucks, and other vehicles with air conditioning systems that employ a refrigerant. This equipment is intended to be used mainly in automotive service stations and repair facilities.

Equipment may be investigated to determine the minimum purity specifications for recycled refrigerant for use in mobile automotive air conditioning systems. Such equipment is marked ''Design Certified by Underwriters Laboratories Inc. for Compliance with *,'' to indicate that the equipment has been investigated for compliance with the applicable SAE requirements.

Split-system equipment consisting of separate sections may be investigated to determine the minimum purity specifications for recycled refrigerant for use in mobile automotive air conditioning systems. Such equipment is marked ''Design Certified by Underwriters Laboratories Inc. for compliance with [applicable standard and issue date, such as SAE J2210 (issue date) for HFC-134a] when used with [equipment manufacturer's name, model designation and section identification],'' to indicate that the equipment has been investigated for compliance with the applicable SAE requirements.

* ''SAE J1991 (date)'' for CFC-12 or ''SAE J2210 (date)'' for HFC-134a

** Equipment manufacturer's name, model designation and section identification

The use of this equipment to service mobile vehicles for refrigerated cargo that have hermetically sealed, rigid-pipe air conditioning systems has not been investigated.

RELATED PRODUCTS

Refrigerant recovery hose assemblies are covered under Tubing, Refrigerant Certified for Canada (SFCS8).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN / CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''CFC-12 Recycling Equipment,'' ''HFC-134a Recycling Equipment'' or ''CFC-12 and HFC-134a Recycling Equipment,'' or other appropriate product name as shown in the individual Listings.

* *

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REFRIGERATION ACCESSORIES CERTIFIED FOR CANADA (SCSQ7)

Controllers, Refrigeration Certified for Canada (SDFY7)

GENERAL

This category covers electrical controls designed for refrigeration and air-conditioning equipment and for room temperature or humidity regulation. They are intended for household, commercial or industrial use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

These devices respond directly or indirectly to changes in temperature, humidity, refrigerant level, or pressure to affect temperature control of equipment or appliance operation, etc. These devices may be investigated for functioning during the normal operation (regulating) of the controlled appliance or for functioning in the event of an abnormal condition (limiting) of the controlled appliance.

Ratings — Refrigeration controllers are certified with a maximum rating of 600 V. A control rated in amps is tested with an inductive (75-80% power factor) load for alternating-current ratings unless a direct-current (noninductive) rating is specified.

Manual reset controls — An "M1" or "M2" marking indicates the following manual reset functions are provided:

- **M1** – Controls that automatically reset to the "closed" position after normal operating conditions have been restored if the reset means is held in the "reset" position.
- **M2** – Controls that do not automatically reset to the "closed" position if the reset means is held in the "reset" position.

Equipment suitable for outdoor use — Equipment identified with an enclosure type designation or as "Rain tight" or "Rainproof" is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Class 2 output circuits — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

PRODUCT MARKINGS

Refrigeration controllers are marked with the company name or trademark, a distinctive catalog number, and the electrical ratings. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Safety controls for gas- and oil-fired appliances, electric central furnaces, boilers and duct heaters are covered under Controls, Limit Certified for Canada (MBPR7), Controls, Primary Safety Certified for Canada (MCCZ7) or Switches Certified for Canada (MFHX7).

Refrigerant valves are covered under Valves, Electrically Operated Certified for Canada (YIOZ7).

Electrical temperature controls for heating equipment, motor operators, and wall-mounted room thermostats are covered under Temperature-indicating and -Regulating Equipment Certified for Canada (XAPX7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 24, "Temperature-Indicating and -Regulating Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigeration Controller," or other appropriate name as shown in the individual Listings.

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Refrigeration, Fittings Certified for Canada (SDTW7)

USE

This category covers fittings intended for connecting refrigerant lines of refrigerating systems.

These fittings are also suitable for use in lines handling hazardous liquids and automotive applications.

Refrigeration, Fittings Certified for Canada (SDTW7)−*Continued*

PRODUCT MARKINGS

These products are marked with the manufacturer's name.

The catalog number, type of refrigerant used and design pressure are marked on either the fitting or on the carton or container in which the fitting is shipped, or on a separate sheet or a specification tag included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Fitting."

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Fusible Plugs, Refrigerant Certified for Canada (SEHU7)

USE

This category covers devices that have a predetermined-temperature fusible member for the relief of pressure.

PRODUCT MARKINGS

These products are marked with the manufacturer's name.

The catalog number, type of refrigerant used and design pressure are marked on either the fusible plug or on the carton or container in which the fusible plug is shipped, or on a separate sheet or a specification tag included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Fusible Plug."

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Liquid Indicators, Refrigerant Certified for Canada (SEYW7)

USE

This category covers liquid indicators located in the liquid line of a refrigerating system, and that have a sight port by which liquid flow may be observed.

PRODUCT MARKINGS

These products are marked with the manufacturer's name.

The catalog number, type of refrigerant used and design pressure are marked on either the fitting or on the carton or container in which the fitting is shipped, or on a separate sheet or a specification tag included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Cer-

Liquid Indicators, Refrigerant Certified for Canada (SEYW7)−*Continued*

tified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Liquid Indicator."

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Valves, Refrigerant Certified for Canada (SFJQ7)

USE

This category covers charging valves and stop valves. Charging valves are used to charge or add refrigerant to the system, or add oil to the compressor crankcase. Stop valves are intended to shut off the flow of refrigerant.

PRODUCT MARKINGS

These products are marked with the manufacturer's name.

The catalog number, type of refrigerant used and design pressure are marked on either the valve or on the carton or container in which the valve is shipped, or on a separate sheet or a specification tag included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Valve."

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BEVERAGE COOLERS AND BEVERAGE COOLER-DISPENSERS CERTIFIED FOR CANADA (SFWY7)

GENERAL

This category covers beverage coolers and beverage cooler-dispensers. Beverage coolers are intended to be connected to a field-installed dispensing means. Beverage cooler-dispensers include a factory-installed dispensing means. These products may be self-contained, sectional or remote. Accessories intended for use with beverage coolers and beverage cooler-dispensers are also covered under this category.

INSTALLATION

This equipment is rated 750 V ac or less and is intended to be installed in accordance with the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and CAN/CSA-B52, "Mechanical Refrigeration Code."

All units are marked with the refrigerant type; some units may employ alternative refrigerants that are not currently listed in CAN/CSA-B52, but are included in ASHRAE 34-1992 (amendment), "Designation and Safety Classification of Refrigerants." The use of these alternative refrigerants resulted from environmental restrictions on some refrigerants currently listed in the code. Using requirements as applied to specified refrigerants

Beverage Coolers and Beverage Cooler-Dispensers Certified for Canada (SFWY7)−*Continued*

in CAN/CSA-B52, UL's Listing Report available from the manufacturer identifies installation classifications applicable to the alternative refrigerants in the same manner as shown in CAN/CSA-B52 for currently used refrigerants. The refrigerants are classified A1 or A1/A1 by CAN/CSA-B52 and have been determined to be nonflammable or practically nonflammable.

A beverage cooler or beverage cooler-dispenser of other than the remote type consists of a completely factory assembled and factory tested refrigeration system comprising one or more assemblies which may be shipped separately but which are intended to be used together. If two or more sections are provided, each section is designed and marked for field interconnection with a matched section(s).

A self-contained beverage cooler or beverage cooler-dispenser consists of a completely factory assembled and factory tested refrigeration system in which all the refrigerant-containing parts are connected at the factory.

A remote beverage cooler or beverage cooler-dispenser is intended to be connected to a field-installed condenser or condensing unit located remote from the beverage cooler or beverage cooler-dispenser.

Accessories for beverage coolers and beverage cooler-dispensers are provided with instructions for installation into the product.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

PRODUCT MARKINGS

Beverage coolers and beverage cooler-dispensers may be designed to accept accessories installed in the field. In such cases both the beverage cooler or beverage cooler-dispenser and the accessory are marked to relate the two for proper installation.

A section of a beverage cooler or beverage cooler-dispenser suitable for outdoor use is so marked. Sections not so marked are for indoor use only.

Some equipment covered under this category employs replaceable pressurized containers that have not been investigated. Such equipment is marked to indicate it is certified with respect to hazards exclusive of those of the replaceable pressurized container(s).

REBUILT PRODUCTS

This category also covers beverage coolers and beverage cooler-dispensers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt beverage coolers and beverage cooler-dispensers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt beverage coolers and beverage cooler-dispensers are subject to the same requirements as new beverage coolers and beverage cooler-dispensers.

RELATED PRODUCTS

Coin-operated equipment is covered under Vending Machines, Refrigerated Certified for Canada (SQMX7).

Nonrefrigerated dispensing equipment is covered under Food-preparing Machines, Commercial Certified for Canada (IPST7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, "Refrigeration Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Beverage Cooler," "Beverage Cooler-Dispenser" (for a self-contained unit), "Beverage Cooler Less Condenser," "Beverage Cooler-Dispenser Less Condenser," "Beverage Cooler Less Condensing Unit," "Beverage Cooler-Dispenser Less Condensing Unit" (for a remote beverage cooler or beverage cooler-dispenser), "Section of Beverage Cooler," "Section of Beverage Cooler-Dispenser" (for each section of a beverage cooler or beverage cooler-dispenser shipped separately from the factory, the function of which is essential to the basic operation of the beverage cooler or beverage cooler-dispenser), or "Accessory for Beverage Cooler or Beverage Cooler-Dispenser" (for a part or device, the function of which supplements or modifies the basic operation of the beverage cooler or beverage cooler-dispenser).

For rebuilt products the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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Beverage Coolers and Beverage Cooler-Dispensers Certified for Canada (SFWY7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

COMMERCIAL REFRIGERATORS AND FREEZERS CERTIFIED FOR CANADA (SGKW7)

GENERAL

This category covers commercial refrigerators and freezers such as display cases, reach-in cabinets, meat cases, frozen food and merchandising cabinets, food service carts and soda fountain units. These products may be self-contained, sectional or remote. Accessories intended for use with commercial refrigerators and freezers are also covered under this category.

INSTALLATION

This equipment is rated 750 V ac or less and is intended to be installed in accordance with the requirements of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and CAN/CSA-B52, ''Mechanical Refrigeration Code.''

All units are marked with the refrigerant type; some units may employ alternative refrigerants that are not currently listed in CAN/CSA-B52, but are included in ASHRAE 34-1992 (amendment), ''Designation and Safety Classification of Refrigerants.'' The use of these alternative refrigerants resulted from environmental restrictions on some refrigerants currently listed in the code. Using requirements as applied to specified refrigerants in CAN/CSA-B52, UL's Certification Report available from the manufacturer identifies installation classifications applicable to the alternative refrigerants in the same manner as shown in CAN/CSA-B52 for currently used refrigerants. The refrigerants are classified A1 or A1/A1 by CAN/CSA-B52 and have been determined to be nonflammable or practically nonflammable.

Unitary refrigerators consist of a complete factory assembled and factory tested refrigeration system comprising one or more assemblies which may be shipped separately but which are intended to be used together. If two or more sections are provided, each section is designed and marked for field interconnection with a matched section(s).

A self contained refrigerator is a unitary refrigerator consisting of a completely factory assembled and factory tested refrigerating system in which all the refrigerant containing parts are permanently connected at the factory.

A remote refrigerator is a refrigerator intended to be connected to a field-installed condensing unit located remote from the refrigerator.

Accessories for commercial refrigerators and freezers are provided with instructions for installation into the product.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

PRODUCT MARKINGS

Some equipment may be designed to accept accessories installed in the field. In such cases, both the commercial refrigerator or freezer and the accessory are marked to relate the two for proper installation.

Equipment or section(s) of the equipment suitable for outdoor installation are so marked. Units not so marked are for indoor use only.

Commercial refrigerators and freezers may employ a wireway to permit end-to-end installation. The wireway of such units is marked accordingly.

Some equipment covered under this category employs replaceable pressurized containers that have not been investigated. Such equipment is marked to indicate it is certified with respect to hazards exclusive of those of the replaceable pressurized container(s).

REBUILT PRODUCTS

This category also covers commercial refrigerators and freezers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt commercial refrigerators and freezers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt commercial refrigerators and freezers are subject to the same requirements as new commercial refrigerators and freezers.

RELATED PRODUCTS

Refrigerators and freezers for household use are covered under Household Refrigerators and Freezers Certified for Canada (SHZZ7) and Household Freezers Certified for Canada (SHMR7).

Specialized refrigerators or freezers are covered under Refrigerators and Freezers, Special Purpose Certified for Canada (SOVQ7).

Door panel assemblies are covered under Door Panel Assemblies Certified for Canada (FDIT7).

Beverage coolers and beverage cooler-dispensers are covered under Beverage Coolers and Beverage Cooler-Dispensers Certified for Canada (SFWY7).

Nonrefrigerated cabinets are covered under Wired Cabinets Certified for Canada (ZNXR7).

Commercial Refrigerators and Freezers Certified for Canada (SGKW7)−*Continued*

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Commercial Refrigerator and/or Freezer'' (for a self-contained unit), ''Commercial Refrigerator and/or Freezer Less Condensing Unit'' (for a remote unit), ''Section of Commercial Refrigerator and/or Freezer'' (for a section or device, the function of which is essential to the basic operation of the commercial refrigerator or freezer), or ''Accessory for Commercial Refrigerator and/or Freezer'' (for each part of a commercial refrigerator which is shipped separately from the factory, the function of which supplements or modifies the basic operation of the commercial refrigerator or freezer).

For rebuilt products the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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CONDENSING AND COMPRESSOR UNITS CERTIFIED FOR CANADA (SGYU7)

These units are intended to be installed in air conditioning and refrigeration systems in accordance with the requirements of the Canadian Electrical Code and The Mechanical Refrigeration Code, CSA Standard B52. Optional accessories for use with these units are also covered in this section. Presently listed equipment is rated 600 v or less.

Units in this category intended for refrigeration service may be of any Btu per hour capacity. For listings of units rated more than 135,000 Btu per hour and intended primarily for air conditioning application, see Air Conditioning Systems Equipment, in this Directory.

Condensing units include one or more compressors and air or water-cooled condensers with interconnecting refrigerant piping and with associated controls and wiring, and may also include a receiver. These units are intended for field connection to a remote evaporator, unit cooler or fan-coil unit.

Compressor units include one or more compressors with associated controls and wiring, and may also include a receiver. These units are intended for field connection to a remote evaporator, unit cooler or fan-coil unit and to a remote condenser having a marked working pressure not less than designated by the marking on the unit data plate.

Some units are intended for field connection to multiple refrigeration systems and include multiple condensing units, compressor units, or compressors, with single or multiple condensers, with associated piping, controls, and wiring, mounted on a common frame or in a common housing.

The acceptability of operation of these units, when associated with other components of a complete system, has not been investigated.

These units are to be used only in systems with the specified refrigerant and operating at pressures not in excess of those indicated by the marked test pressures.

Units that have been investigated and found suitable for use with Listed field installed accessories are marked to identify the specific accessories that may be used.

Units which are suitable for outdoor installation are so marked. Units not marked as suitable for outdoor installation are for indoor use only.

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

The basic standard used to investigate products in this category is CAN/CSA C22.2 No. 236-M90 ''Heating and Cooling Equipment'' .

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Condensing and Compressor Units Certified for Canada (SGYU7)−*Continued*

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED", a control number, and one of the following product names as appropriate: "Condensing Unit", "Compressor Unit", "Accessory for Condensing Unit", "Accessory for Compressor Unit" or "Accessory for Condensing or Compressor Unit" .

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HOUSEHOLD FREEZERS CERTIFIED FOR CANADA (SHMR7)

GENERAL

This category covers self-contained freezers consisting of a complete refrigeration system. The refrigeration systems are of the mechanical compression type, absorption type or thermoelectric type. Accessories intended for use with household freezers are also covered under this category.

This category will be obsoleted August 21, 2016. On or before this date, all household freezer certifications will be transferred to Household Refrigerators and Freezers Certified for Canada (SHZZ7).

INSTALLATION

This equipment is intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." The equipment is intended for connection to 15 or 20 A, 100 to 140 V or 15 A, 200 to 250 V, single-phase, alternating-current (ac) circuits; or combination ac/dc circuits or direct-current (dc) circuits where the dc voltage does not exceed 30 V.

Household freezers are certified in three classes as follows:

Freestanding — A freezer intended for open-type installation only, not including stacking, locating in closets, alcoves, or other confined spaces.

Recessed Installation — A freezer intended to be supported by the floor or base cabinet, located in an enclosed area but not intended to be permanently attached to the building structure, adjacent cabinets or other appliances. These units are also suitable for freestanding installation.

Built-in Installation — A recessed-type freezer intended for slide-in installation into a confined space and trimmed to blend with room decor.

Accessories for household freezers are provided with instructions for installation into the product.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to connection to water supply lines.

REBUILT PRODUCTS

This category also covers household freezers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt household freezers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt household freezers are subject to the same requirements as new household freezers.

PRODUCT MARKINGS

Household freezers may be designed to accept accessories in the field. In such cases both the freezer and the accessory are marked to relate the two for proper installation.

A freezer intended for freestanding use is so marked on the unit. Each freezer intended for recessed installation has specified installation clearances marked on the unit, if clearances are required.

RELATED PRODUCTS

Household refrigerators are covered under Household Refrigerators and Freezers Certified for Canada (SHZZ7).

Refrigerators and freezers for use in recreational vehicles are covered under Recreational Vehicle Refrigerators and Freezers Certified for Canada (SKKQ7).

Freezers for commercial use are covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

Refrigerators and freezers in combination with ranges, microwave ovens and/or sinks are covered under Kitchen Units, Refrigerated Certified for Canada (SJPT7).

Products Verified for energy efficiency are covered under Refrigerators, Freezers and Wine Chillers, Household Verified for Energy Efficiency (ZZLI).

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

Household Freezers Certified for Canada (SHMR7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 63, "Household Refrigerators and Freezers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Household Freezer" or "Accessory for Household Freezer."

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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HOUSEHOLD REFRIGERATORS AND FREEZERS CERTIFIED FOR CANADA (SHZZ7)

GENERAL

This category covers self-contained refrigerators, freezers, and combination refrigerator-freezers consisting of a complete refrigeration system. The refrigeration systems are of the mechanical compression type, absorption type or thermoelectric type. Accessories intended for use with household refrigerators and freezers are also covered under this category.

INSTALLATION

This equipment is intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." The equipment is intended for connection to 15 or 20 A, 100 to 140 V or 15 A, 200 to 250 V, single-phase, alternating-current (ac) circuits; or combination ac/dc circuits or direct-current (dc) circuits where the dc voltage does not exceed 30 V.

Household refrigerators, freezers, and combinations thereof are certified in three classes as follows:

Freestanding — Intended for open-type installation only, not including stacking, locating in closets, alcoves or other confined spaces.

Recessed Installation — Intended to be supported by the floor or base cabinet, located in an enclosed area but not intended to be permanently attached to the building structure, adjacent cabinets or other appliances. These units are also suitable for freestanding installation.

Built-in Installation — Recessed-type appliances intended for slide-in installation, into a confined space and trimmed to blend with room decor.

Accessories are provided with instructions for installation into the product.

Authorities Having Jurisdiction should be consulted for requirements relating to connection to water supply lines.

REBUILT PRODUCTS

This category also covers household refrigerators and freezers that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt household refrigerators and freezers are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt household refrigerators and freezers are subject to the same requirements as new household refrigerators and freezers.

PRODUCT MARKINGS

Household refrigerators, freezers, and combinations thereof may be designed to accept accessories in the field. In such cases both the appliance and the accessory are marked to relate the two for proper installation.

A refrigerator, freezer, or combination thereof intended for freestanding use is so marked on the unit. Each appliance intended for recessed installation has specified installation clearances marked on the unit, if clearances are required.

RELATED PRODUCTS

Household freezers may be covered under Household Freezers Certified for Canada (SHMR7) until August 21, 2016.

Refrigerators, freezers, and combinations thereof for use in recreational vehicles are covered under Recreational Vehicle Refrigerators and Freezers Certified for Canada (SKKQ7).

Refrigerators, freezers, and combinations thereof for commercial use are covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

Refrigerators in combination with ranges, microwave ovens and/or sinks are covered under Kitchen Units, Refrigerated Certified for Canada (SJPT7).

Household Refrigerators and Freezers Certified for Canada (SHZZ7)−*Continued*

Products Verified for energy efficiency are covered under Refrigerators, Freezers and Wine Chillers, Household Verified for Energy Efficiency (ZZLI).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 63, ''Household Refrigerators and Freezers,'' or CAN/CSA-C22.2 No. 60335-1 (2011), ''Safety of Household and Similar Appliances – Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60335-2-24 (2006), ''Safety Requirements for Household and Similar Electrical Appliances, Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Household Refrigerator,'' ''Accessory for Household Refrigerator,'' ''Household Freezer'' or ''Accessory for Household Freezer.''

For rebuilt products, the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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ICE CREAM MAKERS CERTIFIED FOR CANADA (SINX7)

GENERAL

This category covers equipment intended for preparing products such as hard ice cream, soft-serve ice cream, milk shakes and sherbets, and may include means for dispensing the product directly into containers. These products may be self-contained or sectional. Accessories intended for use with ice cream makers are also covered under this category.

INSTALLATION

This equipment is rated 600 V or less and is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and CAN/CSA-B52, ''Mechanical Refrigeration Code.''

All units are marked with the refrigerant type and some units may employ alternative refrigerants that are not currently listed in CAN/CSA-B52, but are included in ASHRAE 34-1992 (amendment), ''Designation and Safety Classification of Refrigerants.'' The use of these alternative refrigerants resulted from environmental restrictions on some refrigerants currently listed in the code. Using requirements as applied to specified refrigerants in CAN/CSA-B52, UL's Certification Report (available from the manufacturer) identifies installation classifications applicable to the alternative refrigerants in the same manner as shown in CAN/CSA-B52 for currently used refrigerants. The refrigerants are classified A1 or A1/A1 by CAN/CSA-B52 and have been determined to be nonflammable or practically nonflammable.

Unitary ice cream makers consist of a complete factory-assembled and factory-tested refrigeration system comprising one or more assemblies that may be shipped separately but intended to be used together. If two or more sections are provided, each section is designed and marked for field interconnection with a matched section(s).

A self-contained ice cream maker is a unitary ice cream maker consisting of a completely factory-assembled and factory-tested refrigerating system in which all the refrigerant-containing parts are permanently connected at the factory.

Accessories for ice cream makers are provided with instructions for installation into the product.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water-supply and waste-disposal lines.

PRODUCT MARKINGS

Some equipment covered under this category employs replaceable pressurized containers that have not been investigated. Such equipment is marked to indicate it is certified with respect to hazards exclusive of those of the replaceable pressurized container(s).

Equipment or sections of the equipment suitable for outdoor use are so marked. Units not so marked are for indoor use only.

Ice Cream Makers Certified for Canada (SINX7)−*Continued*

Some equipment may be designed to accept accessories installed in the field. In such cases, both the ice cream maker and the accessory are marked to relate the two for proper installation.

RELATED PRODUCTS

Ice cream makers (without a compressor) for household use are covered under Food Preparing Machines, Household Certified for Canada (IPWZ7).

Coin-operated equipment is covered under Vending Machines, Refrigerated Certified for Canada (SQMX7).

Nonrefrigerated dispensing equipment is covered under Food Preparing Machines, Commercial Certified for Canada (IPST7).

Beverage coolers and beverage cooler-dispensers are covered under Beverage Coolers and Beverage Cooler-Dispensers Certified for Canada (SFWY7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Ice Cream Maker,'' ''Section of Ice Cream Maker'' or ''Accessory for Ice Cream Maker.''

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ICE MAKERS CERTIFIED FOR CANADA (SJBV7)

GENERAL

This category covers devices that automatically manufacture and harvest ice in cube, flake, or other readily usable form, with or without provision for storage or means of dispensing ice. These products may be self-contained or sectional. Accessories intended for use with ice makers are also covered under this category.

This category does not cover tray type ice makers, ice vending machines, or ice makers and ice maker kits used in household refrigerators and freezers. See **RELATED PRODUCTS** below.

INSTALLATION

This equipment is rated 600 V or less and is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and CAN/CSA B52, ''Mechanical Refrigeration Code.''

All units are marked with the refrigerant type and some units may employ alternative refrigerants that are not currently listed in CAN/CSA B52, but are included in ASHRAE 34 (1992) (amendment), ''Designation and Safety Classification of Refrigerants.'' The use of these alternative refrigerants resulted from environmental restrictions on some refrigerants currently listed in the code. Using requirements as applied to specified refrigerants in CAN/CSA B52, UL's Certification Report (available from the manufacturer) identifies installation classifications applicable to the alternative refrigerants in the same manner as shown in CAN/CSA B52 for currently used refrigerants. The refrigerants are classified A1 or A1/A1 by CAN/CSA B52 and have been determined to be nonflammable or practically nonflammable.

An ice maker of other than the remote type consists of a completely factory assembled and factory tested refrigeration system comprising one or more assemblies that may be shipped separately but intended to be used together. If two or more sections are provided, each section is designed and marked for field interconnection with a matched section(s).

A self-contained ice maker consists of a completely factory-assembled and factory-tested refrigerating system in which all the refrigerant-containing parts are permanently connected at the factory.

A remote ice maker is an ice maker intended to be connected to a field-installed condenser or condensing unit located remote from the ice maker.

Accessories for ice cream makers are provided with instructions for installation into the product.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

PRODUCT MARKINGS

Ice Makers Certified for Canada (SJBV7)−*Continued*

Ice makers may be designed to accept accessories installed in the field. In such cases both the ice maker and the accessory are marked to relate the two for proper installation.

Ice makers or sections of ice makers suitable for outdoor installation are so marked. Ice makers or sections not so marked are for indoor use only.

RELATED PRODUCTS

Coin-operated equipment is covered under Vending Machines, Refrigerated Certified for Canada (SQMX7).

Ice makers for installation into household refrigerators and freezers are Recognized under Specialty Refrigeration Equipment Certified for Canada (SROT8).

Accessory ice-maker kits for installation into household refrigerators or freezers are covered under Household Refrigerators and Freezers Certified for Canada (SHZZ7) or Household Freezers Certified for Canada (SHMR7).

Products Verified for energy efficiency are covered under Ice Makers Verified for Energy Efficiency (ZYRR).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: ''Ice Maker,'' ''Ice Maker Without Ice Storage Means'' (for a self-contained unit), ''Ice Maker Less Condenser,'' ''Ice Maker Without Ice Storage Means Less Condenser,'' ''Ice Maker Less Condensing Unit,'' ''Ice Maker Without Ice Storage Means Less Condensing Unit'' (for a remote ice maker), ''Section of Ice Maker'' (for each section of an ice maker shipped separately from the factory, the function of which is essential to the basic operation of the ice maker), or ''Accessory for Ice Maker'' (for a part or device, the function of which supplements or modifies the basic operation of the ice maker).

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KITCHEN UNITS, REFRIGERATED CERTIFIED FOR CANADA (SJPT7)

GENERAL

This category covers refrigerators rated 250 V or less in combination with ranges, microwave ovens and/or sink units. Accessories intended for use with refrigerated kitchen units are also covered under this category.

INSTALLATION

This equipment is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' The equipment is investigated and tested to determine that it can be properly installed in accordance with the installation instructions provided by the manufacturer.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to connection to water supply and waste disposal lines, if applicable. Equipment connected to plumbing is intended for permanent connection to the source of supply.

PRODUCT MARKINGS

Kitchen units intended for recessed installation are marked to indicate the installation clearances.

Some equipment may be designed to accept accessories installed in the field. In such cases, both the refrigerated kitchen unit and the accessory are marked to relate the two for proper installation.

RELATED PRODUCTS

Household refrigerators are covered under Household Refrigerators and Freezers Certified for Canada (SHZZ7).

Household freezers are covered under Household Freezers Certified for Canada (SHMR7).

Refrigerators intended for use in recreational vehicles are covered under Recreational Vehicle Refrigerators and Freezers Certified for Canada (SKKQ7).

Refrigerators intended for commercial use are covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

Kitchen Units, Refrigerated Certified for Canada (SJPT7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 63, ''Household Refrigerators and Freezers.''

The basic standard used to investigate the electric range portion of products in this category is CAN/CSA-C22.2 No. 61, ''Household Cooking Ranges.''

The basic standard used to investigate the microwave oven portion of products in this category is CAN/CSA-C22.2 No. 150, ''Microwave Ovens.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerated Kitchen Unit'' or ''Accessory for Refrigerated Kitchen Unit.''

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RECREATIONAL VEHICLE REFRIGERATORS AND FREEZERS CERTIFIED FOR CANADA (SKKQ7)

GENERAL

This category covers refrigerators, freezers, and combination refrigerator-freezers, rated 250 V or less ac and/or 30 V or less dc, intended for use in recreational vehicles. These products are electrically operated, self-contained devices consisting of a complete refrigeration system that may be of the mechanical compression type, absorption type or thermoelectric type. These products are not gas-fired.

INSTALLATION

These products are certified in two classes as follows:

Freestanding — A unit designed for installation in other than a confined space. Each unit intended for freestanding installation is so marked.

Recessed — A unit designed for installation in a confined space. Each unit intended for recessed installation has specified installation clearances, if clearances are required, marked on the unit. These units are also suitable for freestanding installation.

These products are intended for installation in accordance with the manufacturer's instructions and as marked on the product. They are intended to be secured to the recreational vehicle structure. Authorities Having Jurisdiction and applicable codes should be consulted as to the requirements for this equipment with respect to installation and use. Such codes include: CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' CSA-Z240 RV Series, ''Recreational Vehicles Code,'' and CSA/CSA B52, ''Mechanical Refrigeration Code.''

RELATED PRODUCTS

Electric household refrigerators and freezers are covered under Household Refrigerators and Freezers Certified for Canada (SHZZ7) and Household Freezers Certified for Canada (SHMR7), respectively.

Gas-fired or combination gas/electric recreational vehicle refrigerators are covered under Refrigerators Using Gas Fuel Certified for Canada (LPHR7).

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 63, ''Household Refrigerators and Freezers.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Recreational Vehicle Refrigerators and Freezers Certified for Canada (SKKQ7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Recreational Vehicle Refrigerator'' or ''Recreational Vehicle Freezer,'' or other appropriate product name.

* *

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REFRIGERANT-CONTAINING COMPONENTS CERTIFIED FOR CANADA (SKQZ7)

Accumulators, Refrigerant Certified for Canada (SKXY7)

USE

This category covers accumulators, which are storage chambers intended for low-side liquid refrigerant, and may be referred to as surge drums or surge headers. Refrigerant accumulators may also be pressure vessels whose volume is used in a refrigerant circuit to reduce pulsation.

PRODUCT MARKINGS

These products are marked with the manufacturer's name.

The catalog number, type of refrigerant used and design pressure are marked on either the accumulator or on the carton or container in which the accumulator is shipped, or on a separate sheet or a specification tag included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, ''Refrigerant-Containing Components for Use in Electrical Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerant Accumulator.''

* *

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Compressors, Refrigerant, Open Type, Remanufactured Certified for Canada (SLRG7)

GENERAL

This category covers open-type remanufactured refrigerant compressors with a shaft or other moving port extending through its casing to be driven by an outside source of power thus requiring a shaft seal or equivalent rubbing contact between a fixed and moving part.

The performance of these devices when incorporated in an air conditioning or refrigeration system has not been investigated.

PRODUCT MARKINGS

These products are marked with the manufacturer's name.

The catalog number, type of refrigerant used and design pressure are marked on either the refrigerant compressor or on the carton or container in which the refrigerant compressor is shipped, or on a separate sheet or a specification tag included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, ''Refrigerant-Containing Components for Use in Electrical Equipment.''

Compressors, Refrigerant, Open Type, Remanufactured Certified for Canada (SLRG7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Remanufactured Open Type Refrigerant Compressor.''

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Condensers, Refrigerant Certified for Canada (SLSV7)

GENERAL

This category covers refrigerant condensers intended to liquefy refrigerant vapor by removal of heat. They are air-cooled, evaporative or water-cooled types. Water-cooled types have not been investigated for use as water heaters. Water-cooled assemblies are shell-and-tube or tube-in-tube type.

PRODUCT MARKINGS

All condensers are marked with the manufacturer's name, model number and the design pressure. Unless provided with a separate marking as indicated below, the products are also marked with the type(s) of refrigerant to be used.

Refrigerant condensers not marked to indicate the type of refrigerant used are provided with a marking that may be on a separate tag or label and attached to the unit cooler that reads ''The design pressure marked on this component shall not be less than the installed system working pressure or less than the values outlined in CAN/CSA B52 for the charged refrigerant. After charging, mark the installed equipment with the refrigerant type and oil used,'' or equivalent.

Finned tube assemblies incorporating a motor-driven fan (forced-air-cooled units) are also marked with the electrical rating. Forced-air-cooled condensers suitable for outdoor installation are so marked.

RELATED PRODUCTS

Water-cooled condensers intended for use as water heaters are covered under Refrigerant Heat Recovery Equipment Certified for Canada (SOMU7) or Heat Reclaimers, Refrigerant Certified for Canada (SNLT7).

Condenser receivers are covered under Receivers, Refrigerant Certified for Canada (SOJV7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate forced-air-cooled condensers in this category is CAN/CSA-C22.2 No. 236, ''Heating and Cooling Equipment.''

The basic standard used to investigate all other condensers in this category is CSA-C22.2 No. 140.3, ''Refrigerant-Containing Components for Use in Electrical Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerant Condenser.''

* *

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Driers, Filters and Strainers, Refrigerant Certified for Canada (SMGT7)

USE

This category covers driers, filters and strainers.

A drier is a device containing a desiccant, the primary purpose of which is to collect and hold within the desiccant all water in the refrigerant system in excess of the amount that can be tolerated in the circulating refrigerant.

Driers, Filters and Strainers, Refrigerant Certified for Canada (SMGT7)−*Continued*

A filter is a device intended to remove solid material from the refrigerant.

A strainer is a device intended to withhold foreign matter from flowing liquid or gas refrigerant.

PRODUCT MARKINGS

These products are marked with the manufacturer's name. Unless provided with a separate marking as indicated below, the products are marked with the catalog number, type(s) of refrigerant to be used and the refrigerant design pressures.

Driers, filters and strainers not marked to indicate the catalog number, type of refrigerant used and design pressure are provided with a marking that may appear on the carton or container in which the component is shipped, or on a separate sheet or tag of specification included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, ''Refrigerant-Containing Components for Use in Electrical Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Refrigerant Filter,'' ''Refrigerant Filter-Drier,'' ''Refrigerant Strainer,'' ''Refrigerant Drier,'' or other appropriate product name as shown in the individual Listings.

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Evaporators, Refrigerant Certified for Canada (SMUR7)

USE

This category covers refrigerant evaporators intended to vaporize liquid refrigerant to produce refrigeration.

PRODUCT MARKINGS

These products are marked with the manufacturer's name. Unless provided with a separate marking as indicated below, the products are marked with the catalog number, type(s) of refrigerant to be used and the refrigerant design pressure.

Evaporators not marked to indicate the catalog number, type of refrigerant used and design pressure are provided with a marking that may appear on the carton or container in which the component is shipped or on a separate sheet or tag of specification included in each carton or container.

RELATED PRODUCTS

Evaporators provided with a fan for air circulation and intended for refrigeration purposes are covered under Unit Coolers Certified for Canada (SPLR7). Similar assemblies intended for air conditioning purposes are referenced as fan-coil units and covered under Heating and Cooling Equipment Certified for Canada (LZFE7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, ''Refrigerant-Containing Components for Use in Electrical Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerant Evaporator.''

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Evaporators, Refrigerant Certified for Canada (SMUR7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Heat Exchangers, Refrigerant Certified for Canada (SNHZ7)

USE

This category covers refrigerant heat exchangers designed to transfer heat between refrigerant in the high side and low side of the system. These devices may also be referred to as heat interchangers.

PRODUCT MARKINGS

These products are marked with the manufacturer's name. Unless provided with a separate marking as indicated below, the products are marked with the catalog number, type(s) of refrigerant to be used and the refrigerant design pressure.

Heat exchangers not marked to indicate the catalog number, type of refrigerant used and design pressure are provided with a marking that may appear on the carton or container in which the component is shipped or on a separate sheet or tag of specification included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, ''Refrigerant-Containing Components for Use in Electrical Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerant Heat Exchanger.''

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Heat Reclaimers, Refrigerant Certified for Canada (SNLT7)

USE AND INSTALLATION

This category covers refrigerant heat reclaimers intended for installation in conjunction with air conditioning or refrigeration systems to extract heat from the refrigerant for heating water. The heat reclaimers consist of a refrigerant-to-water heat exchanger without any water-temperature control components.

Refrigerant heat reclaimers are intended to be installed in accordance with the manufacturer's installation instructions provided with the heat reclaimer.

The efficiency of the heat reclaimer, the feasibility of interconnection with air conditioning or refrigeration systems, and the effect of the heat reclaimers on the operation of the air conditioning and refrigeration systems have not been investigated.

PRODUCT MARKINGS

These products are marked with the manufacturer's name and model number. Unless provided with a separate marking as indicated below, the products are marked with the type(s) of refrigerant to be used and the refrigerant design pressures.

Heat reclaimers not marked to indicate the catalog number, type of refrigerant used and design pressure are provided with a marking that may appear on the carton or container in which the component is shipped or on a separate sheet or tag of specification included in each carton or container.

Heat reclaimers intended for heating potable water are so identified in the individual certifications and by a marking on the heat reclaimer.

RELATED PRODUCTS

Similar equipment designed for use with specific makes and models of air conditioning or refrigeration systems is covered under Accessories, Air Conditioning Equipment Certified for Canada (ABFY7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Cer-

Heat Reclaimers, Refrigerant Certified for Canada (SNLT7)−*Continued*

tified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Heat Reclaimer."

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Mufflers, Refrigerant Certified for Canada (SNOY7)

USE

This category covers refrigerant mufflers located in the compressor discharge line to dampen or remove hot gas pulsations set up by the compressor.

PRODUCT MARKINGS

These products are marked with the manufacturer's name. Unless provided with a separate marking as indicated below, the products are marked with the catalog number, type(s) of refrigerant to be used and the refrigerant design pressures.

Refrigerant mufflers not marked to indicate the catalog number, type of refrigerant used and design pressure are provided with a marking that may appear on the carton or container in which the component is shipped, or on a separate sheet or tag of specification included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Muffler."

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Oil Separators, Refrigerant Certified for Canada (SNVX7)

USE

This category covers refrigerant oil separators intended to separate oil and oil vapor from the refrigerant and usually installed in the compressor discharge line.

PRODUCT MARKINGS

These products are marked with the manufacturer's name. Unless provided with a separate marking as indicated below, the products are marked with the catalog number, type(s) of refrigerant to be used and the refrigerant design pressures.

Refrigerant oil separators not marked to indicate the catalog number, type of refrigerant used and design pressure are provided with a marking that may appear on the carton or container in which the component is shipped, or on a separate sheet or tag of specification included in each carton or container.

ADDITIONAL INFORMATION

Oil Separators, Refrigerant Certified for Canada (SNVX7)−*Continued*

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Oil Separator."

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Receivers, Refrigerant Certified for Canada (SOJV7)

USE

This category covers shell-type receivers and condenser receivers permanently connected to an air conditioning or refrigeration system and intended for the storage of liquid refrigerant. These devices may additionally serve as condensers.

PRODUCT MARKINGS

These products are marked with the manufacturer's name. Unless provided with a separate marking as indicated below, the products are marked with the catalog number, type(s) of refrigerant to be used and the refrigerant design pressures.

Refrigerant receivers not marked to indicate the catalog number, type of refrigerant used and design pressure are provided with a marking that may appear on the carton or container in which the component is shipped, or on a separate sheet or tag of specification included in each carton or container.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 140.3, "Refrigerant-Containing Components for Use in Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerant Receiver" or "Condenser-Receiver."

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REFRIGERATED MEDICAL EQUIPMENT CERTIFIED FOR CANADA (SOPT7)

GENERAL

This category covers self-contained, refrigerated medical equipment such as oxygen therapy and thermia devices designated for professional use by personnel in hospitals, nursing homes, medical care centers, medical offices and similar health care facilities.

This equipment has been investigated for electric shock, fire and mechanical hazards. Other risks, including those that may result from use of this equipment in the presence of flammable anesthetics, have not been investigated.

INSTALLATION

This equipment is rated 600 V or less and is intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Refrigerated Medical Equipment Certified for Canada (SOPT7)−*Continued*

This equipment has been investigated to determine that it can be properly installed in accordance with the installation instructions provided by the manufacturer.

Oxygen therapy equipment has been investigated with respect to the increased risks resulting from the presence of oxygen and electrical parts within the equipment. In view of the practical design features it is essential for safety that all possible sources of ignition be kept away from these devices. Possible sources of ignition, against which precautions should be taken, include open flames, matches, cigarettes, accumulations of static electricity and reducing valves on oxygen tanks which occasionally project flame or sparks due to ignition or explosion of rubber valve seats. The canopy (tent), reducing valve, oxygen cylinders, etc., used with oxygen therapy equipment have not been investigated nor covered as part of the certified equipment.

FACTORS NOT INVESTIGATED

The effects on a patient of simultaneous use of this equipment with other electrical apparatus and the physiological effects, beneficial or otherwise, which may be produced by this equipment, have not been investigated.

RELATED PRODUCTS

Equipment investigated to determine its suitability or safety for use where a flammable anesthetic is likely to be present is covered under Medical Equipment for Use in Hazardous Locations Certified for Canada (PINR7).

Nonrefrigerated medical equipment is covered under Medical Equipment Certified for Canada (PIDF7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment,'' and CAN/CSA-C22.2 No. 601.1, ''Medical Electrical Equipment, Part 1: General Requirements for Safety.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

REFRIGERATED MEDICAL EQUIPMENT or REFRIGERATED OXYGEN THERAPY EQUIPMENT*
AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY
Control No.

* or other appropriate product name as shown in the individual Classifications

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REFRIGERATION EQUIPMENT ACCESSORIES CERTIFIED FOR CANADA (SOSR7)

USE AND INSTALLATION

This category covers devices investigated for installation on certified refrigeration equipment only as optional accessories, in accordance with the designation on the nameplate of the accessory and in the individual certification of the accessory. These accessories are rated 600 V ac or less, and are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment,'' and CSA-C22.2 No. 128, ''Vending Machines.''

UL MARK

Refrigeration Equipment Accessories Certified for Canada (SOSR7)−*Continued*

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

*** ACCESSORY**
FOR USE WITH ** UL LISTED MODEL ***
#
or
*** ACCESSORY**
FOR USE WITH UL LISTED ##
#
Control No.

* Category of Listed equipment on which accessory is to be used or ''REFRIGERATION EQUIPMENT''
** Refrigeration equipment Listee's name
*** Equipment model designation
# Category of Listed equipment
Specific type or characteristic of equipment in the category

****

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REFRIGERATORS AND FREEZERS, SPECIAL PURPOSE CERTIFIED FOR CANADA (SOVQ7)

GENERAL

This category covers equipment designed for special purposes, such as environmental chambers, flammable-materials-storage refrigerators, plant-growth chambers, and self-contained refrigerators and freezers intended for use in laboratories in commercial occupancies.

INSTALLATION

This equipment is rated 600 V or less and is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and CAN/CSA B52, ''Mechanical Refrigeration Code.''

For permanently connected equipment, the proper method of electrical installation (number of branch circuits, disconnects, etc.) is shown on the wiring diagram and/or marking required to be attached to the unit.

Flammable-materials-storage refrigerators are marked to indicate that they are acceptable for storage of flammable liquids.

PRODUCT MARKINGS

Laboratory refrigerators and freezers may use an ASHRAE 34 refrigerant, classified A3, as an additive. In accordance with System Application Rule (j) of Table 2 in CAN/CSA B52, use of A3 refrigerants is prohibited except in laboratories in commercial occupancies. Laboratory refrigerators are marked ''This unit is intended for use in laboratories in commercial occupancies as defined in CAN/CSA B52.''

RELATED PRODUCTS

Refrigerators and freezers investigated to determine suitability for use in hazardous (classified) locations are covered under Commercial Refrigerators and Freezers for Use in Hazardous Locations Certified for Canada (STRV7).

Products investigated for storage of flammable or combustible liquids in excess of 10 gal are covered under Flammable-liquid Storage Cabinets Certified for Canada (EDJZ7).

Commercial refrigerators and freezers are covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product

Refrigerators and Freezers, Special Purpose Certified for Canada (SOVQ7)−*Continued*

name ''Special Purpose Refrigerator and/or Freezer,'' ''Laboratory Refrigerator'' or ''Environmental Chamber,'' or other appropriate product name shown in the individual Listings.

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UNIT COOLERS CERTIFIED FOR CANADA (SPLR7)

USE

This category covers unit coolers, which are direct-cooling, factory-made encased assemblies, consisting of a cooling element, fan(s) and motor(s), intended for the free circulation of air for refrigeration purposes. They may also incorporate means for defrosting of the cooling element.

This equipment is rated 600 V or less and is intended for permanent connection to the source of supply in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This equipment is intended for use in refrigeration systems charged with the refrigerant indicated on the device, but has not been investigated from the standpoint of operation when associated with other equipment used to form the complete refrigeration system.

PRODUCT MARKINGS

These products are marked with the manufacturer's name, model number, electrical rating, design pressure and the type(s) of refrigerant to be used.

RELATED PRODUCTS

Equipment intended for air-conditioning purposes is referenced as fan-coil units and covered under Heating and Cooling Equipment Certified for Canada (LZFE7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Unit Cooler.''

* *

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UNITS, REFRIGERATING CERTIFIED FOR CANADA (SPYZ7)

GENERAL

This category covers complete refrigeration systems consisting of a hermetic motor compressor, condenser, evaporator, refrigerant control, electrical controls, wiring and associated refrigerant-containing components including tubing and may include a defrost system. These systems are primarily used to refrigerate cooling rooms and warehouses intended for the storage of food and other perishable products. These products may be self-contained or sectional. Accessories intended for use with refrigerating units are also covered under this category.

INSTALLATION

This equipment is rated 600 V or less and is intended for permanent connection to the source of supply in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Refrigerating units consist of one or more factory-made sections. If two or more sections are provided, each section is designed and marked for field interconnection with a matched section(s).

Accessories for refrigerating units are provided with instructions for installation into the product.

PRODUCT MARKINGS

Units, Refrigerating Certified for Canada (SPYZ7)−*Continued*

The condensing sections of refrigerating units suitable for outdoor installation are so marked. Sections not marked as suitable for outdoor installation are for indoor use only.

Refrigerating units may be designed to accept accessories in the field. In such cases both the refrigerating unit and the accessory are marked to relate the two for proper installation.

REBUILT PRODUCTS

This category also covers refrigerating units that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt refrigerating units are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt refrigerating units are subject to the same requirements as new refrigerating units.

RELATED PRODUCTS

Refrigerated cabinets and cases are covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

Nonelectrical insulated wall panels are covered under Building Units Certified for Canada (BLBT7).

Door and frame assemblies for walk-in coolers are covered under Door Panel Assemblies Certified for Canada (FDIT7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, ''Refrigeration Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigerating Unit'' (for a self contained unit), ''Section of Refrigerating Unit'' (for a part or device, the function of which is essential to the basic operation of the refrigerating unit) or ''Accessory for Refrigerating Unit'' (for each part of a refrigerating unit shipped separately from the factory, the function of which supplements or modifies the basic operation of the refrigerating unit).

For rebuilt products the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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VENDING MACHINES, REFRIGERATED CERTIFIED FOR CANADA (SQMX7)

GENERAL

This category covers refrigerated vending machines designed for connection to alternating-current circuits rated not more than 600 V, and which incorporate refrigeration systems of the air-cooled or water-cooled type employing hermetic refrigerant motor-compressors.

This equipment consists of a complete refrigeration system and associated electrical controls for the system and for delivery of the product.

Accessories, such as a coin/currency mechanism and debit/credit card readers, may be field installed if the vending machine is marked to specify the types of accessories that are acceptable.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

Where the equipment employs connection to a compressed carbon dioxide source, this category does not cover compressed carbon dioxide cylinders.

Some of this equipment employs replaceable pressurized containers that have not been investigated. Such equipment is marked to indicate it is certified with respect to hazards exclusive of those of the replaceable pressurized container(s).

The burglary and theft features of these machines have not been investigated unless specifically indicated in the individual certifications.

PRODUCT MARKINGS

These products are marked with the manufacturer's name, model number, electrical rating, design pressure and refrigerant type.

The venders are marked on or adjacent to the electrical rating plate with one of the following: ''For Indoor Use Only,'' ''Suitable for Protected Locations – See Installation Instructions'' or ''Suitable for Outdoor Use.'' Complete instructions appear on a vender intended for use in a protected loca-

Vending Machines, Refrigerated Certified for Canada (SQMX7)−*Continued*

tion, indicating the manufacturer's recommendations concerning the use and/or installation of any canopies, marquees, shelters, etc., which may be necessary for the protection of the vender. The instructions may be located inside the vender if they are accessible through the front door.

RELATED PRODUCTS

For certifications of machines that vend nonrefrigerated products, see Vending Machines Certified for Canada (YWXV7) or the specific category covering the equipment involved.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 128, "Vending Machines."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Refrigerated Vending Machine."

* *

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WATER COOLERS CERTIFIED FOR CANADA (SRAV7)

Drinking-water Coolers Certified for Canada (SRJX7)

GENERAL

This category covers bottle- and pressure-type drinking-water coolers rated up to 250 V. These coolers are provided with a complete refrigeration system and associated electrical controls, and may also include means for heating water.

These products may contain water purification parts or system(s). However, the parts or system(s) used to purify the water have not been investigated to determine their effectiveness in purifying water unless specifically stated in the individual certifications.

Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

PRODUCT MARKINGS

These products are marked with the manufacturer's name, model number, electrical rating, design pressure and refrigerant type.

RELATED PRODUCTS

See Drinking Water System Components Certified for Canada (FDNP7).

See Lead Content Verification of Products in Contact with Potable Water Certified for Canada (QNVB7).

Water coolers intended for use in hazardous (classified) locations are covered under Water Coolers for Use in Hazardous Locations Certified for Canada (SUFT7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, "Refrigeration Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Drinking Water Cooler."

* *

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Drinking-water Coolers Certified for Canada (SRJX7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

COMMERCIAL PROCESSING LIQUID COOLERS CERTIFIED FOR CANADA (SRFR7)

GENERAL

This category covers coolers intended to condition water or other fluids used for developing photographic film, cooling or thawing bulk product, cooling medical equipment, such as magnetic resonance imagers (MRI) or computer axial topography (CAT) scanners, and similar processes. The fluids intended for use in these coolers are limited to glycol, water, and water with additives. These coolers are not intended for the cooling of potable water. These units are provided with a complete refrigeration system and associated electrical controls and may also incorporate means for heating and circulating the water or other fluid.

If intended to be connected to the water supply, Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection.

PRODUCT MARKINGS

These water coolers are marked with the manufacturer's name, model number, electrical rating, the refrigerant type, and the high- and low-side design pressures.

RELATED PRODUCTS

Bottle- and pressure-type potable water coolers are covered under Drinking Water Coolers Certified for Canada (SRJX7).

Other types of specialized refrigerators are covered under Specialty Refrigeration Equipment Certified for Canada (SROT7).

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 120, "Refrigeration Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Processing Liquid Cooler."

* *

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SPECIALTY REFRIGERATION EQUIPMENT CERTIFIED FOR CANADA (SROT7)

GENERAL

This category covers specialty refrigeration equipment.

Compressor-evaporator units covered under this category are rated 135,000 Btu/h or less and include one or more compressors and evaporators with interconnecting refrigerant piping and with associated controls and wiring. These units are intended for field connection to a remote condenser having a marked working pressure not less than designated by the marking on the unit nameplate. The acceptability of operation of these units, when associated with other components of a complete system, has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Refrigeration Equipment Certified for Canada (SCER7), Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7), Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA C22.2 No. 63 (1993), "Household Refrigerators and Freezers," CAN/CSA C22.2 No. 120 (1991), "Refrigeration Equipment," CAN/CSA C22.2 No. 128 (1990), "Vending Machines" and CAN/CSA C22.2 No. 140.3 (1987), "Refrigerant-Containing Components for Use in Electrical Equipment."

Specialty Refrigeration Equipment Certified for Canada (SROT7)–*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Food Service Cart,'' or other appropriate product name as shown in the individual Listings.

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REFRIGERATION EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (SSCR7)

COMMERCIAL REFRIGERATORS AND FREEZERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (STRV7)

GENERAL

This category covers commercial refrigerators and freezers of the self-contained reach-in type, having provision for connection to threaded rigid conduit.

In the storage of any chemicals in the refrigerators and freezers, consideration should be given to the inherent decomposition and reaction hazards of the chemicals.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Commercial Refrigerator and/or Freezer for Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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WATER COOLERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (SUFT7)

GENERAL

This category covers bottled water and line water-supplied types of water coolers.

These appliances are self-contained units with a complete refrigeration system and associated electrical controls. The refrigeration system has provision for connection to threaded rigid conduit.

Safety may be affected if the manufacturer's installation instructions are not followed.

Appliances intended to be connected to external water sources have not been investigated with respect to pollution of water supply through reverse action due to low water pressure or other reasons.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

Water Coolers for Use in Hazardous Locations Certified for Canada (SUFT7)–*Continued*

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Water Cooler for Use in Hazardous Locations.''

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REFRIGERATION EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (STFO7)

ACCESSORIES, REFRIGERATION FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (STFZ7)

Controllers, Refrigeration for Use in Zone Classified Hazardous Locations Certified for Canada (STGN7)

GENERAL

This category covers temperature- and pressure-operated controllers.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 24-93, ''Temperature-Indicating and -Regulating Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Refrigeration Controller for Use in Hazardous Locations.''

* *

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SIGNAL AND FIRE ALARM EQUIPMENT AND SERVICES CERTIFIED FOR CANADA (SYKJ7)

This category covers products that include equipment for initiating, controlling and indicating signals pertaining to the protection of life and property against fire and are intended to be installed, maintained and operated as system arrangements in accordance with CAN/ULC-S524, ''Installation of Fire Alarm Systems.''

Users of this equipment should consult Authorities Having Jurisdiction concerning the particular types to be used, number and location of sta-

tions, character and installation of wiring, methods to be followed in the receipt and disposition of signals, keeping of records, rendering of reports, and all other details having a bearing on adequate installation, maintenance and use of the system to be employed.

Listed protective fire alarm equipment is subjected to investigation to determine its suitability for its intended service and for installation, maintenance and use in conformity with the applicable standard with particular regard to design and construction, practicability of application and reliability of performance, in addition to the possible electrical hazards involved in its use.

This equipment may be used in different combinations as system assemblies. All parts of such an assembly may be either of one manufacture or of different manufactures. Special equipment designed for use with other particular equipment is indicated in the individual Listings.

A complete system is considered to be a combination of interrelated signal-initiating devices, signal-transmitting devices, signal-indicating devices and control unit installed in a protected premise in accordance with regulations enforced by the Authority Having Jurisdiction who determines the suitability of the installation for its particular application. This category applies only to the equipment intended to be installed to form these systems and not to the systems as installed.

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RELEASING DEVICE EQUIPMENT CERTIFIED FOR CANADA (SYLX7)

Releasing devices with accessory equipment are designed to release operating weights or air or water under pressure in the functioning of fire protection and fire alarm equipment.

They are available in both heat responsive (automatic) and manual types. The heat responsive types may be had in either fixed temperature or rate-of-rise types or a combination of these two.

The heat responsive portions of releasing devices are integral parts of some patterns. In other patterns they are separate parts, such as air chambers which are mounted in the fire area and connected by small-bore tubing to the releasing device; or thermostatically-operated electric switches (heat detectors) mounted in the fire area and connected by an electric wiring circuit to the releasing device. Devices which have normally open contacts are listed as Heat - Automatic Fire Detectors and those which have normally closed contacts are listed as Heat Detectors for Releasing Device Service.

Proper location and spacing of the auxiliary heat responsive devices (heat detectors, air chambers, tubing, etc.) involve consideration of service conditions throughout the area to be protected - such as ceiling construction, subdivisions of areas (including closets, small rooms, etc.) normal temperatures, high temperatures (if existent), resulting from manufacturing processes or other causes and draft conditions. Because of this, the recommendation regarding spacing of detectors gives a maximum limitation only, and recognizes that specific system settings, abnormal temperature changes, or other field conditions may require downward adjustment of these maximum spacing limits in field installations. Individual listings should be consulted for details of spacing and location of the heat responsive devices.

The inspection authority having jurisdiction should be consulted in all cases before installation of systems or devices.

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Accessories, Releasing Device Certified for Canada (SYSW7)

GENERAL

This category covers accessory equipment intended to be used in conjunction with other suitable releasing-device equipment as indicated in the individual certifications to form part of a releasing-device system.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term ''Releasing Device'' and the specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Releasing Device Equipment Certified for Canada (SYLX7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

Accessories, Releasing Device Certified for Canada (SYSW7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, ''Control Units for Fire Alarm Systems.''

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Fire Alarm Equipment'' or ''Fire Alarm Subassembly.''

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word ''SECURITY'' above the UL symbol. The product name is ''Fire Alarm and Security Equipment'' or ''Fire Alarm and Security Subassembly.''

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include ''and Hospital Signaling and Nurse Call,'' ''and General Signaling,'' ''and Emergency Signaling,'' ''and Enclosed Energy Management,'' ''and Information Technology'' or ''and Telephone,'' as appropriate (e.g., ''Fire Alarm and Telephone Equipment'').

The product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

Where model numbers are indicated in the individual Listings, 100% of the manufacturer's production for those models is required to be labeled. Where model numbers are not indicated, the manufacturer is not obliged to label 100% of production.

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Control Units, Releasing Device Certified for Canada (SYZV7)

GENERAL

This category covers control units intended for use with separately certified automatic fire detectors and releasing devices to form electrically supervised releasing systems. Contacts may be provided for connection of automatic alarm transmitters for signals to central station and for supplementary local annunciator circuits.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term ''Releasing Device'' and the specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Releasing Device Equipment Certified for Canada (SYLX7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, ''Control Units for Fire Alarm Systems.''

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Fire Alarm Equipment'' or ''Fire Alarm Subassembly.''

The Listing Mark for fire alarm equipment may include the designation ''___ of ___.'' The first space is stamped with the number indicating the

Control Units, Releasing Device Certified for Canada (SYZV7)−*Continued*

position that the panel occupies in the series of panels constituting the fire alarm equipment. The second space is stamped with the total number of units in the fire alarm equipment.

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word "SECURITY" above the UL symbol. The product name is "Fire Alarm and Security Equipment" or "Fire Alarm and Security Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Hospital Signaling and Nurse Call," "and General Signaling," "and Emergency Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Fire Alarm and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

Where model numbers are indicated in the individual Listings, 100% of the manufacturer's production for those models is required to be labeled. Where model numbers are not indicated, the manufacturer is not obliged to label 100% of production.

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Releasing Devices Certified for Canada (SZNT7)

GENERAL

This category covers releasing devices intended for use 1) in supporting and releasing loads in connection with automatic operating devices or systems where loads at release lever hook do not exceed those specified in the individual certifications, and 2) as a means of releasing air or water under pressure from a piping system and confining and conducting that pressure through pipes or tubing to operate any connected pressure-operated mechanism.

A releasing device and its associated detection system may be adjusted to compensate for more or less severe ambient temperature changes by different settings of the release or by varying the size of the compensating vents in the system to increase or decrease the rate of pressure build-up caused by exposure to some given temperature rise. Because of this, the recommendation regarding spacing of detectors gives a maximum limitation only, and recognizes that specific system settings, abnormal temperature changes, or other field conditions may require downward adjustment of these maximum spacing limits in field installations.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Releasing Device" and the specific use description as indicated in the individual certifications.

RELATED PRODUCTS

See Control Units, System Certified for Canada (UOJZ7), Smoke-automatic Fire Detectors Certified for Canada (UROX7).

ADDITIONAL INFORMATION

For additional information, see Releasing Device Equipment Certified for Canada (SYLX7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, "Standard for Control Units for Fire Alarm Systems."

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word "SECURITY" above the UL symbol. The product name is "Fire Alarm and Security Equipment" or "Fire Alarm and Security Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Hospital Signaling and Nurse Call," "and General Signaling," "and Emergency Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Fire Alarm and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

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AUDIBLE-SIGNAL APPLIANCES CERTIFIED FOR CANADA (ULSZ7)

GENERAL

This category covers electrically operated bells, buzzers, horns and similar signal-sounding appliances for fire-protective signaling service.

These appliances are not to be confused with audible-signal appliances for general signaling (nonfire alarm) use, which are covered under Audible-signal Appliances, General Signal Certified for Canada (UCST7).

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Audible Signal Appliance for Fire Alarm Service," "Audible Signaling Appliance for Fire Alarm Service – Private Mode Only," "Audible Signal Appliance Accessory" or "Audible Signaling Appliance for Fire Alarm Service Subassembly."

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S525, "Audible Signal Devices for Fire Alarm Systems, Including Accessories."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling categories. When applicable, the product name may include "and General Signaling" or "and Emergency Signaling," as appropriate (e.g., "Fire Alarm and Emergency Signaling Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

F – Fire Alarm Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment

* *

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Releasing Devices Certified for Canada (SZNT7)−*Continued*

Audible-signal Appliances Certified for Canada (ULSZ7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

BOXES, MANUALLY ACTUATED CERTIFIED FOR CANADA (UMGX7)

A manually actuated box is an enclosed unit assembly of a mechanism having electrical contacts designed to transmit a signal when an integral part is operated manually. The signaling contacts are intended to be connected to circuits of private fire protective signaling systems.

Boxes, Noncoded Certified for Canada (UNIU7)

GENERAL

This category covers non-coded fire alarm boxes, which are boxes having electrical contacts actuated to change their normal position when a part is operated manually so as to produce a non-coded signal. This category also covers protective covers for fire alarm boxes.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term ''Non-coded Alarm Box,'' ''Non-coded Watchman's Station,'' ''Non-coded Fire and Watch Station,'' ''Alarm Back Box,'' ''Alarm Box Trim'' or ''Alarm Box Protective Cover.''

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S528, ''Manual Stations for Fire Alarm Systems, Including Accessories.''

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Fire Alarm Equipment'' or ''Fire Alarm Subassembly.''

The product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:

F – Fire Alarm Equipment

* *

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CONTROL UNITS, SYSTEM CERTIFIED FOR CANADA (UOJZ7)

GENERAL

This category covers electrical control units for fire-protective signaling systems to be employed in indoor locations.

Products investigated for outdoor locations are identified in the individual certifications with respect to the installation environment (outdoor), location (dry, damp or wet) and maximum air ambient temperature.

A control unit consists of a unit assembly of electrical parts having provision for connection of power-supply circuits routed through the control unit equipment by a prescribed scheme of circuiting. The circuits are extended to separate devices by which the operating parts of the control units are actuated for signals and to separate or incorporated appliances by which the signals are indicated, so as to form a coordinated system combination for definite signaling services.

The Listee of a control unit furnishes the related actuating devices and signal-indicating appliances for use with the control unit or indicates the particular devices and appliances required and supplies any instructions necessary to complete their interconnection at the installation.

The individual Listings indicate that wiring diagrams have been submitted with the control unit, along with information regarding its intended application, and the unit has been tested with representative actuating devices and signal-indicating devices to be used with it as an interrelated assembly. Reference is made in the marking of the control unit to the wiring diagram showing complete information except when the installation wiring diagram is secured to the control unit.

Identification of the information in the individual certifications is as follows:

Control Units, System Certified for Canada (UOJZ7)−*Continued*

Local System Type (L)

System Control Unit with Emergency Voice Communication — A system control unit with emergency voice communication consists of a control unit that employs a speaker system in lieu of conventional general alarm-indicating circuits. The control unit may also have additional provision for telephone communication by use of hand sets. A tape deck with a prerecorded message may also be employed as a supplementary feature.

System Control Unit with Emergency Telephone Communication — A system control unit with emergency telephone communication consists of a control unit with conventional general alarm-indicating circuits and additionally employs telephone communication circuits to remote telephone hand sets for emergency communication during a fire condition, usually for use by fire department personnel.

The types of devices that can be connected for the service indicated in the individual certifications for each type control unit are as follows:

A – Automatic fire alarm: Thermostats, smoke detectors, etc.
M – Manual fire alarm: Manually operated boxes
WF – Waterflow alarm: Waterflow switches
SS – Supervisory: Gate valves, water-level switches, temperature switches, etc.
WSS – Watchman's supervisory service

The type of signaling service applicable to each type control unit is as follows: C – Coded; NC – Non-Coded; M – March Time; MX – Multiplex; RF – Radio Frequency; DAC – Digital Alarm Communicator.

C – Coded
NC – Noncoded
M – March Time
MX – Multiplex

Where more than one type of control unit is indicated for a model number, such as Type Fire Alarm (L, LS, A, RS), that particular model is suitable for all the indicated applications. The change from one type to another may be made by deletion or addition of a panel or module inside the control unit cabinet or revisions to operating software to provide the additional function. In other cases a control unit may be suitable for a dual function without any panel changes, such as a Type Fire Alarm (P, RS).

Authorities Having Jurisdiction should be consulted before installation or revision.

PRODUCT MARKINGS

Each complete product is marked to indicate its intended use. This consists of the word ''Commercial,'' followed by ''Protected-Premises Control Unit,'' consistent with the description in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, ''Control Units for Fire Alarm Systems.''

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Fire Alarm Equipment'' or ''Fire Alarm Subassembly.''

The Listing Mark for fire alarm equipment may include the designation ''___ of ___.'' The first space is stamped with the number indicating the position that the panel occupies in the series of panels constituting the fire alarm equipment. The second space is stamped with the total number of units in the fire alarm equipment.

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word ''SECURITY'' above the UL symbol. The product name is ''Fire Alarm and Security Equipment'' or ''Fire Alarm and Security Subassembly.''

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include ''and Hospital Signaling and Nurse Call,'' ''and General Signaling,'' ''and Emergency Signaling,'' ''and Enclosed Energy Management,'' ''and Information Technology'' or ''and Telephone,'' as appropriate (e.g., ''Fire Alarm and Telephone Equipment'').

The product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:

S – Security Equipment

Control Units, System Certified for Canada (UOJZ7)−*Continued*

F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

Where model numbers are indicated in the individual Listings, 100% of the manufacturer's production for those models is required to be labeled. Where model numbers are not indicated, the manufacturer is not obliged to label 100% of production.

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CONTROL UNIT ACCESSORIES, SYSTEM CERTIFIED FOR CANADA (UOXX7)

GENERAL

This category covers electrical units intended for use with fire-protective signaling systems employed in indoor locations in accordance with Section 32 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of a specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Signal and Fire Alarm Equipment and Services Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, "Control Units for Fire Alarm Systems."

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

The Listing Mark for fire alarm equipment may include the designation "___ of ___." The first space is stamped with the number indicating the position that the panel occupies in the series of panels constituting the fire alarm equipment. The second space is stamped with the total number of units in the fire alarm equipment.

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word "SECURITY" above the UL symbol. The product name is "Fire Alarm and Security Equipment" or "Fire Alarm and Security Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Hospital Signaling and Nurse Call," "and General Signaling," "and Emergency Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Fire Alarm and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

Where model numbers are indicated in the individual Listings, 100% of the manufacturer's production for those models is required to be labeled. Where model numbers are not indicated, the manufacturer is not obliged to label 100% of production.

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SIGNAL AND FIRE ALARM EQUIPMENT AND SERVICES CERTIFIED FOR CANADA (SYKJ7)

Control Unit Accessories, System Certified for Canada (UOXX7)−*Continued*

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DETECTORS, AUTOMATIC FIRE CERTIFIED FOR CANADA (UPLV7)

These products are either individual devices or prescribed combinations of devices designed to detect flame, heat, smoke or combustion gases resulting from a fire and to automatically operate electrical contacts. The signaling contacts may be integral parts of an individual device or parts of a separate device to which the detecting element is connected as an extended component.

The signaling contacts of the detector are intended to be connected to the circuit conductors of the fire protective signaling system, so that the fire alarm signal initiated by the detector will be indicated by the system.

The kind of system (central station, proprietary, auxiliary, remote station or local) with which the detector can be used, depends upon the design of the signaling circuit to which the detector contacts are intended to be connected. A detector may have non-coded signaling contacts connected directly to the actuating circuit of system control unit or to the actuating circuit of an electrically operated transmitter, which will transmit coded signals over the signaling line circuit of a local, auxiliary, proprietary, remote station, or central station system.

The wiring diagram of the transmitter or system control unit with which the detector is used will indicate the circuit application of the detector.

A combination type detector depends upon two or more related but separate pieces of equipment which are designed to be installed together so as to form a complete detector.

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Heat-automatic Fire Detectors Certified for Canada (UQGS7)

GENERAL

This category covers thermostat-type automatic fire detectors (known as thermostats), which are integral assemblies of heat-responsive elements and noncoded electrical contacts that function automatically under conditions of increase in air temperature. These thermostats consist of detection heads intended for mounting to compatible component bases having electrical functions, or self-contained units for mounting to standard electrical utility boxes.

Thermostats are of the fixed temperature (F), combination fixed temperature and rate-of-rise (C), or rate compensation (R) type. There are basically two types: (1) A spot-pattern-type thermostat is one in which the thermally-sensitive element is a compact unit of small area; (2) a line-pattern-type thermostat (heat-sensitive cable [HSC]) is one in which the thermally-sensitive element is continuous along a line.

The possible contact configurations of these thermostats are as follows: One-pole, normally open-circuit type (1PNO); one-pole, normally closed-circuit type (1PNC); two-pole open-circuit type (2PNO); two-pole, normally closed-circuit type (2PNC); two-pole, normally open-circuit and closed-circuit type (2PNO/NC). Thermostats with normally open contacts are suitable for use as initiating devices of a fire-protective signaling system. Thermostats with normally closed contacts are suitable for use as the heat-responsive portion of a releasing device system.

These thermostats have been investigated for indoor use only unless otherwise indicated in the individual certifications. Ordinarily, thermostats are intended for locations where normal ceiling temperatures prevail (below 38°C). Locations where temperatures at ceiling are likely to be unduly high (from sources of heat other than fire conditions, such as boiler rooms, dry kilns, etc.) demand special consideration and selection of thermostats operating normally at higher temperatures, and which are capable of withstanding high temperatures for long periods of time. Care should be exercised to select thermostats having the proper temperature rating to guard against false alarms from premature operation:

For ceiling temperatures not exceeding 38°C, install 71°C or equivalent (ordinary) rating thermostats
For ceiling temperatures exceeding 38°C, but not 66°C, install 100°C or equivalent (intermediate) rating thermostats
For ceiling temperatures exceeding 66°C, but not 107°C, install 141°C

Heat-automatic Fire Detectors Certified for Canada (UQGS7)−*Continued*

or equivalent (high) rating thermostats

For ceiling temperatures exceeding 107°C, but not 149°C, install 182°C or equivalent (extra high) rating thermostats

The response sensitivity of thermostats to standard test fires is indicated by the ''spacing'' rating. The spacing rating is the maximum distance between adjacent thermostats installed on a symmetrical layout with the maximum right-angle distance to any wall or partition one-half the distance between thermostats. The fire tests conducted on thermostats are based on only one set of conditions, typically a 5-m high smooth ceiling, no air movement, and no physical obstructions between the fire source and the thermostat. Under other conditions and forms of ceiling construction, reduced spacing may be required to obtain equivalent performance.

The placement and spacing of thermostatic devices should be based on consideration of the ceiling construction, ceiling height, room space area, space subdivisions, the normal room temperature, possible exposure of the devices to abnormal heat, such as may be produced by manufacturing processes or equipment, and to draft conditions likely to be encountered at the time of the fire.

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of one of the following:

For **nonseparable heads and bases**: ''Heat Detector''

For **separable heat detector heads**: ''Heat Detector Head for Use with * UL Listed Base''

For **separable heat detector bases**: ''Automatic Detector Base for Use with * UL Listed Head''

For **separable optional bases**: ''Automatic Detector Subassembly''

For **modules**: ''Module for Use with * UL Listed Automatic Detector Base''

* Company name or File No. (Sxxxx)

ADDITIONAL INFORMATION

For additional information, see Detectors, Automatic Fire Certified for Canada (UPLV7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530 (1991), ''Heat Actuated Fire Detectors for Fire Alarm Systems.''

UL MARK

A two-Listing-Mark system is employed for separable detector heads and bases. This permits the separate shipment of bases and heads to facilitate installation and maintenance. The Listing Marks on the separable units, coupled with a marking to cross-reference the head and the base, identify the parts to be used together to form a complete detector assembly.

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Fire Alarm Equipment'' or ''Fire Alarm Subassembly.''

The product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:

F – Fire Alarm Equipment

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Smoke-automatic Fire Detectors Certified for Canada (UROX7)

GENERAL

This category covers detecting combinations designed to detect smoke particles. Smoke detectors may or may not be designed to be connected to fire alarm system control units (see **APPLICATIONS**).

A heat detector and/or an audible-signaling appliance may be provided integral with the detector.

The primary function of duct detectors is to shut down the blowers and/or dampers of air conditioning and ventilating systems in an attempt to prevent a possible panic and smoke damage from distribution of smoke. Duct detectors are not intended as a substitute for open-area protection.

Smoke-automatic Fire Detectors Certified for Canada (UROX7)−*Continued*

The level of toxicity produced by the combustibles at which smoke detectors actuate has not been investigated.

DETECTOR TYPES

Photoelectric (P) — Designed to detect an abnormal density of smoke particles, either by obscuration of a projected light path or reflection of light from the smoke particles onto a light-sensitive element.

Ionization (I) — An ionization smoke detector has a small amount of radioactive material that ionizes the air in the sensing chamber, thus rendering it conductive and permitting a current flow through the air between two charged electrodes. This gives the sensing chamber an effective electrical conductance. When smoke particles enter the ionization area, they decrease the conductance of the air by attaching themselves to the ions, causing a reduction in mobility. When the conductance is less than a predetermined level, the detector circuit responds.

Combination Photoelectric/Ionization (P/I) — Employs both principles of detection in one unit.

Projected Beam (PB) — A light beam is projected across the space of area to be protected.

Air Sampling (AS) — Consists of air-sampling ports at the ends of piping or tubing extending from the detector unit to the areas to be protected. A pump draws air from the protected area through the ports and tubing to the detector where the air is analyzed for fire products.

APPLICATIONS

Open-area Protection (OAP) — Requires detector connection to a compatible system control unit for operation.

Releasing Service (RS) — Intended for detector connection only to releasing devices, such as electromagnetic door holders, fire dampers, etc.

Open-area Protection with Releasing Service (OAP/RS) — Incorporates supplementary switching contacts for additional connection to releasing devices.

Duct Detector [D (ST)] — Intended for installation on the side of a duct. Employs sampling tubes that extend into the duct.

Duct Detector [D (I)] — For installation inside a duct.

COMPATIBILITY WITH CONTROL UNITS

Smoke detectors for open-area protection are intended to be connected to the initiating-device circuit of a fire alarm system control unit.

Multiple-wire detectors, employing power-supply terminals or leads that do not obtain power from the initiating device circuit of a system control unit, are compatible with the initiating device circuits of any certified system control unit if (1) failure of the power to the detector is supervised at the control unit, and (2) the smoke detector is powered from a ''Regulated'' power-supply output, or a ''Special Application'' power-supply output for which the voltage outputs have been investigated. Compatible models for ''Special Application'' outputs are indicated on the installation wiring diagram of the control unit and/or detectors.

Two-wire detectors, whose power-supply terminals or leads are the same as the signaling terminals, and obtain power from the initiating-device circuit of a system control unit, are investigated for compatibility either by test or a review of the circuit parameters of both the detector and control unit. Certification is restricted only to those control units with which such an investigation was made. Interconnection limitations and compatible models are indicated on the installation wiring diagram of control unit and/or detectors.

INSTALLATION

Environmental Considerations — Open-area detectors are intended for indoor use only where normal ceiling temperatures [max 37.8°C (100°F)] prevail. Care should be used that detectors are not installed in areas where conditions may cause unwanted (false) alarms.

Duct detectors are intended to be installed in ducts of heating, ventilating, and air conditioning systems where temperatures at the detector do not exceed 37.8°C (100°F).

Ionization detectors should not be used in an environment of high-level radiation unless tests in the actual environment have shown that the radiation will not interfere with operation of the detectors.

Effect of Velocity — The velocities indicated in the individual certifications are the maximum and minimum to which the detector has been subjected in performance tests without indication of a false alarm or abnormal shift in sensitivity. The performance of photoelectric-type detectors is not affected by velocity. Velocity limits for duct detectors are based on response to fire tests as measured in the duct text apparatus.

Stability Test — In view of the innumerable environmental conditions that exist in the field, it is recommended that the stability of detectors be monitored prior to connection to a fire alarm system for at least three months or more to screen out locations of detectors where unwanted (false) alarms may occur. Relocation of the detectors, use of a detector with a different principle of operation, or a change in the sensitivity setting where permitted in the marking of the detector may be required.

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Smoke-automatic Fire Detectors Certified for Canada (UROX7)−*Continued*

Each product is marked to indicate its intended use. This consists of one of the following:

For **nonseparable heads and bases**:

1. Smoke Detector (+) for Open Area Protection
2. Smoke Detector (+) for Open Area Protection. Also Suitable for Releasing Device Service.
3. Smoke Detector (+) for Releasing Device Service
4. Smoke Detector (+) for Duct Application

For **separable heads**:

1. Smoke Detector Head (+) for Use with a (*) UL Listed Base
2. Smoke Detector Head (+) for Open Area Protection When Used with a (*) UL Listed Base
3. Smoke Detector Head (+) for Open Area Protection When Used with a (*) UL Listed Base. Also Suitable for Duct Application.
4. Smoke Detector Head (+) for Open Area Protection When Used with a (*) UL Listed Base. Also Suitable for Releasing Device Service.
5. Smoke Detector Head (+) for Releasing Device Service When Used with a (*) UL Listed Base
6. Smoke Detector Head (+) for Duct Application When Used with a (*) UL Listed Base
7. Smoke Detector Head When Used with a (*) UL Listed Smoke Duct Detector Housing

For **separable bases and duct housing**:

1. Detector Base (+) for Use with a (*) UL Listed Head
2. Detector Base (+) for Open Area Protection When Used with a (*) UL Listed Head
3. Detector Base (+) for Open Area Protection When Used with a (*) UL Listed Head. Also Suitable for Duct Application.
4. Detector Base (+) for Open Area Protection When Used with a (*) UL Listed Head. Also Suitable for Releasing Device Service.
5. Detector Base (+) for Open Area Protection When Used with a (*) UL Listed Head. Also Suitable for Releasing Device Service and Duct Application.
6. Detector Base (+) for Releasing Device Service When Used with a (*) UL Listed Head
7. Smoke-Duct Detector Housing for Use with (*) UL Listed Head

For **separable system assemblies**:

1. Smoke Detector Projected Beam System Unit
2. Smoke Detector Air Sampling System Unit
3. Smoke Detector for Duct Application Subassembly

+ To be inserted when applicable: "with Integral Audible Signal," "with Integral Heat Detector" or "with Integral Audible Signal and Heat Detector"

* Company name or File No. (Sxxxx)

Detectors marked with the designation "with Integral Audible Signal" include an audible-signaling appliance in the unit (head or base), which is energized under an alarm condition.

Detectors marked with the designation "with Integral Heat Detector" include a heat detector in the unit, which is connected internally to the smoke detector alarm circuit. Actuation of the head detector results in the same alarm signal as obtained from the smoke detector.

RELATED PRODUCTS

Combination door closers and holders incorporating automatic smoke detection components are covered under Combination Fire Door Closers and Holders Certified for Canada (GTIS7).

ADDITIONAL INFORMATION

For additional information, see Detectors, Automatic Fire Certified for Canada (UPLV7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S529, "Standard for Smoke Detectors for Fire Alarm Systems."

UL MARK

A two-Listing-Mark system is employed for separable detector heads and bases. This permits the separate shipment of bases and heads to facilitate installation and maintenance. The Listing Marks on the separable units, coupled with a marking to cross-reference the head and the base, identify the parts to be used together to form a complete detector assembly.

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Smoke-automatic Fire Detectors Certified for Canada (UROX7)−*Continued*

Type Codes:

F – Fire Alarm Equipment

Where model numbers are indicated in the individual Listings, 100% of the manufacturer's production for those models is required to be labeled. Where model numbers are not indicated, the manufacturer is not obliged to label 100% of production.

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Smoke-automatic Fire Detector Accessories Certified for Canada (URRQ7)

GENERAL

This category covers smoke detector accessories, which are devices employed to supplement smoke detector operation when connected as part of a fire alarm system or used to validate smoke detector operation. The interconnection is indicated on the installation wiring diagram associated with the detector.

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Each product is marked to indicate its intended use as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Smoke-automatic Fire Detectors Certified for Canada (UROX7), Detectors, Automatic Fire Certified for Canada (UPLV7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S529, "Smoke Detectors for Fire Alarm Systems."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

F – Fire Alarm Equipment

Where model numbers are indicated in the individual Listings, 100% of the manufacturer's production for those models is required to be labeled. Where model numbers are not indicated, the manufacturer is not obliged to label 100% of production.

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Smoke Detectors for Special Applications Certified for Canada (URXG7)

USE AND INSTALLATION

This category covers smoke-automatic fire detectors employing a special construction different from conventional detectors and designed to detect products of combustion in a specific location. These detectors are not intended as a substitute for open-area protection.

These detectors are intended to be installed in accordance with the manufacturer's installation instructions, such as for extinguishing system applications. The sensitivity rating of the detector should be taken into consideration with regard to installation in an area to be protected under operating conditions to guard against false alarms. The detectors may be connected to the initiating-device circuits of certified control units that provide audible-alarm signals, or employed as part of an extinguishing system.

Authorities Having Jurisdiction should be consulted before installation.

Effect of Velocity — The velocities indicated in the individual certifications are the maximum and minimum to which the detector has been subjected in performance tests without indication of a false alarm or abnormal

Smoke Detectors for Special Applications Certified for Canada (URXG7)−*Continued*

shift in sensitivity. Velocity limits for duct detectors are based on response to fire tests in CAN/ULC-S529, "Standard for Smoke Detectors for Fire Alarm Systems."

Detector Types

Photoelectric (P) — Designed to detect an abnormal density of smoke particles, either by obscuration of a projected light path or reflection of light from the smoke particles onto a light-sensitive element.

Ionization (I) — An ionization smoke detector has a small amount of radioactive material that ionizes the air in the sensing chamber, thus rendering it conductive and permitting a current flow through the air between two charged electrodes. This gives the sensing chamber an effective electrical conductance. When smoke particles enter the ionization area, they decrease the conductance of the air by attaching themselves to the ions, causing a reduction in mobility. When the conductance is less than a predetermined level, the detector circuit responds.

Combination Photoelectric/Ionization (P/I) — Employs both principles of detection in one unit.

Air Sampling (AS) — Consists of air-sampling ports at the ends of piping or tubing extending from the detector unit to the areas to be protected. A pump draws air from the protected area through the ports and tubing to the detector where the air analyzed for fire products.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Smoke Detector for Special Application" or "Smoke Detector Accessory for Special Application."

ADDITIONAL INFORMATION

For additional information, see Smoke-automatic Fire Detectors Certified for Canada (UROX7), Detectors, Automatic Fire Certified for Canada (UPLV7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S529, "Smoke Detectors for Fire Alarm Systems."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

F – Fire Alarm Equipment

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EXTINGUISHING SYSTEM ATTACHMENTS CERTIFIED FOR CANADA (USQT7)

USE AND INSTALLATION

This category covers devices having electrical signaling contacts and designed for attachment to extinguishing system equipment so as to provide one or more of the following: (1) alarm signals indicating discharge of extinguishing means, (2) supervisory signals indicating abnormal conditions of extinguishing system equipment, (3) supervisory signals indicating restoration to normal of extinguishing system equipment.

These devices may be used with wet-pipe or dry-pipe sprinkler systems as indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted prior to installation.

ATTACHMENT TYPES

Extinguishing system attachments are classified as follows:

Water-flow Alarm Signal Types

Alarm or Dry-pipe Valve Attachment — Mechanically operated on lifting of alarm valve clapper, or pressure operated, by suitable connection to alarm or dry-pipe valve piping trim.

Water-flow Indicator — Paddle operated.

The signaling contacts of these attachments may be of the non-coded or coded type:

Non-coded types have contacts that perform a switching function and are intended for connection to actuating circuits of a separate electrically-operated transmitter or to the signaling line circuit of a separate electrical control unit by which their action is indicated.

SIGNAL AND FIRE ALARM EQUIPMENT AND SERVICES CERTIFIED FOR CANADA (SYKJ7)

Extinguishing System Attachments Certified for Canada (USQT7)−*Continued*

Coded types have contacts that perform a coded signaling impulse function resulting from the operation of a transmitting mechanism, which is a part of the attachment, and are for connection to the signaling line circuit of a separate electrical control unit by which their action is indicated.

Head losses due to hydraulic friction in a paddle-operated water-flow indicator at a flow velocity of 15 ft/sec (4.6 m/sec) do not exceed 3 psig (20.7 kPa) for pipe sizes up to and including 4 in. or 1 psig (6.9 kPa) for pipe sizes exceeding 4 in.

Special Attachment — Type not included by the above classification.

Supervisory Signal Types

Valve Position Signal Attachment — Operated by mechanical linkage to movable parts of a valve.

Water Level Signal Attachment — Operated by a tank float.

Pressure Signal Attachment — Operated by pressure change of air, steam or water.

Temperature Signal Attachment — Operated by water or air temperature change.

RATINGS

These devices are intended for use over a working pressure range of 20–175 psig (137.9–1207 kPa), in indoor applications, except as otherwise noted in the individual certifications. They have not been investigated for use in potable water systems, systems where sand or other material is present or systems employing other than water as the extinguishing agent, except as otherwise noted in the individual certifications.

The individual certifications contain information with regard to types, sizes, pressure ratings, special intended usages and other details associated with these devices.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Extinguishing System Attachment."

RELATED PRODUCTS

Water flow in extinguishing systems may also be detected by alarm pressure switches or alarm valves, which are covered under Switches, Pressure Certified for Canada (VOXZ7) and Valves, Alarm Certified for Canada (VPLX7), respectively.

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S548, "Devices and Accessories for Water Type Extinguishing Systems."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

F – Fire Alarm Equipment

* *

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FIRE ALARM DEVICES, SINGLE AND MULTIPLE STATION, AND ACCESSORIES CERTIFIED FOR CANADA (UTER7)

The following Listings cover heat actuated type single station fire alarm devices which are normally intended to be employed in ordinary indoor locations.

The levels of toxicity produced by combustibles at which single- and multiple-station fire alarm devices are actuated have not been investigated by UL.

The devices are self-contained units incorporating means for both fire detection and alarm sounding.

A heat sensitive element of eutectic alloy or bimetallic metal is generally employed in the detection mechanism. Energy for sounding the alarm may be obtained from a wound spring or compressed gas.

Fire Alarm Devices, Single and Multiple Station, and Accessories Certified for Canada (UTER7)−*Continued*

These heat actuated fire alarm devices are normally employed as separate units in which case they are known as single station devices. However, the units operated by compressed gas may also be connected by tubing with other and similar units. These units are known as multiple station devices. When connected in this manner, the detection of a fire by one unit results in the sounding of an alarm by all units. The spring wound units are not capable of being linked together in this way.

For description of the applicable Listing Mark, refer to the sub-category Single- and Multiple-Station Heat Detectors (UTFS7).

Single- and Multiple-station Heat Detectors Certified for Canada (UTFS7)

USE AND INSTALLATION

This category covers single- and multiple-station heat detectors intended for locations where normal ceiling temperatures prevail (below 38°C). For ceiling temperatures not exceeding 38°C, devices having a temperature rating of 58°C are recommended. For ceiling temperatures exceeding 38°C but not 66°C, devices having a temperature rating of 79°C are recommended.

In order to minimize false alarms from premature operation, the operating temperature rating of heat-actuated devices should be appropriate for the maximum ambient temperature expected. Locations where the temperatures at the ceiling level are likely to be unduly high from sources of heat other than fire conditions, such as boiler rooms, require special considerations.

Under these conditions, alarm devices operating normally at higher temperatures and capable of withstanding higher than normal ambient temperatures for long periods of time may be required. Care should be exercised to select alarm devices having the appropriate temperature rating to guard against false alarms from premature operation.

The response sensitivity of heat-actuated fire alarm devices to standard test fires is indicated in the spacing rating assigned to the device. The spacing rating is the maximum distance between adjacent devices installed in a symmetrical layout with the maximum right-angle distance to any wall or partition one-half the distance between the devices.

The spacings specified in the individual certifications are for flat, smooth ceiling construction of ordinary height, generally regarded as the most favorable condition for distribution of heated air currents resulting from a fire. Under other forms of ceiling construction, reduced spacing of alarm devices may be required.

The placement and spacing of alarm devices should be based on consideration of the normal ceiling temperatures, possible exposure of the devices to abnormal heat and to the draft conditions likely to be encountered at the time of a fire. Refer to Chapter 2 of ANSI/NFPA 72, ''National Fire Alarm Code,'' for typical locations.

ADDITIONAL INFORMATION

For additional information, see Fire Alarm Devices, Single and Multiple Station, and Accessories Certified for Canada (UTER7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C539- (1973), ''Guide for the Investigation of Fire Alarm Devices, Single and Multiple Station, Mechanically-Operated Type.''

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and one of the following product names as appropriate: ''Single Station Heat Detector,'' ''Multiple-Station Heat Detector,'' ''Single- and/or Multiple-Station Heat Detector'' or ''Single- and/or Multiple-Station Heat Detector Accessory.''

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Single- and Multiple-station Smoke Alarms Certified for Canada (UTGT7)

USE

This category covers single- and multiple-station smoke alarms intended to be employed in ordinary indoor locations. These units are intended only for locations where normal ceiling temperatures between 4.4°C (40°F) and 37.8°C (100°F) prevail.

Single- and Multiple-station Smoke Alarms Certified for Canada (UTGT7)−*Continued*

This category also covers single- and multiple-station smoke alarms that have been performance tested to a minimum 10-year extended battery life under normal ambient conditions.

Smoke alarms are not intended for use in fire alarm systems. In addition, the acceptability of smoke alarms equipped with ancillary features, such as relays, automatic dialers, radio transmitters or interconnections, is subject to approval by the Authority Having Jurisdiction.

ALARM TYPES

Single Station — Self-contained units that incorporate a smoke chamber, an optional heat detector, and related electrical components to initiate an audible alarm signal from the unit when abnormal smoke or heat (when a supplementary heat detector is provided) actuates the unit. These devices may be energized from a commercial power-supply source by means of permanent wiring, flexible power-supply cord, use of limited-energy cable or equivalent wiring connected to the output of a suitable Class 2 power supply, or by one or more batteries.

Where a battery is employed as the main supply, its depletion below the level at which an alarm signal would be obtained is indicated by a distinctive audible trouble signal which persists for at least seven days.

Multiple Station — Similar to single-station units but provided with leads or terminals (or integral RF transmitter/receiver units) to permit the interconnection of single-station so that actuation of any one unit results in actuation of the audible alarms of all units. The installation instructions (manual) indicate the maximum number of units that can be interconnected.

Travel Alarm — Consists of a battery-operated smoke alarm provided with a mounting bracket for top of door mounting only. May also consist of a battery-operated single-station smoke alarm with the addition of a mounting bracket. The difference is indicated on the UL Listing Mark.

Alarm for Recreational Vehicles — More stringent environmental tests are conducted.

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S531, ''Smoke Alarms.''

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and one of the following product names as appropriate:

''Single-station Smoke Alarm''
''Multiple-station Smoke Alarm''
''Single- and/or Multiple-station Smoke Alarm''
''Single- and/or Multiple-station Smoke Alarm Accessory''
''Travel Smoke Alarm''
''Single-station Smoke Alarm – Also Suitable as a Travel Smoke Alarm''
''Single-station Smoke Alarm – Also Suitable for Use in Recreational Vehicles''
''Single-station Smoke Alarm Accessory – Also Suitable for Use as a Household Burglary Alarm Unit''
''Single-station Smoke Alarm – Also Suitable as a Single-station Carbon Monoxide Alarm''
''Multiple-station Smoke Alarm – Also Suitable as a Multiple-station Carbon Monoxide Alarm''
''Single- and/or Multiple-station Smoke Alarm – Also Suitable as a Single- and/or Multiple-station Carbon Monoxide Alarm''
''Single-station Smoke Alarm – Also Suitable as a Commercial Residential Smoke Alarm''
''Multiple-station Smoke Alarm – Also Suitable as a Commercial Residential Multiple-station Smoke Alarm''

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word ''SECURITY'' above the UL symbol. The product name is one of the following:

''Single-station Smoke Alarm and Household Burglar Alarm Unit''
''Single- and/or Multiple-station Smoke Alarm Accessory – Also Suitable for Use as a Household Burglar Warning System Control Unit''
''Single- and/or Multiple-station Smoke Alarm Accessory – Also Suitable for Use as a Household Burglar Warning System Control Unit, Home Health Care Control Unit, and Signal Appliance Control Unit''
''Single- and/or Multiple-station Smoke Alarm Accessory – Also Suitable for Use as a Household Burglar Warning System Control Unit

Single- and Multiple-station Smoke Alarms Certified for Canada (UTGT7)−*Continued*

Accessory, Personal Call Unit, and Signal Appliance Environment Transmitter''
"Single-station Smoke Alarm Accessory – Also Suitable for Use as a Household Burglary Alarm Unit"
"Single-station Smoke Alarm Accessory – Also Suitable for Use as a Home Health Care Control Unit"
"Single-station Smoke and/or Carbon Monoxide Alarm Accessory – Also Suitable for Use as a Home Health Care Control Unit"

Any of the preceding product names may include "for the Hearing Impaired" for products so identified in the individual Listings.

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HEAT-ACTUATED DEVICES FOR SPECIAL APPLICATION CERTIFIED FOR CANADA (UTHV7)

USE AND INSTALLATION

This category covers fixed-temperature, heat-actuated-type detectors employing a special construction different from conventional thermostats and designed to detect an abnormal increase in air temperature.

These detectors are intended to be installed adjacent to the equipment being protected as identified in the installation instructions, and in accordance with the Authority Having Jurisdiction and CAN/CSA-C22.1, "Canadian Electrical Code, Part I." The temperature rating of the detector should be taken into consideration with regard to installation in the ambient temperature of the equipment to be protected under operating conditions to guard against false alarms. The detectors are intended to be connected to the initiating device circuits of certified control units that provide audible alarm signals or employed as part of an extinguishing system.

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Heat Actuated Device for Special Application," "Control Unit for Special Application" or "Control Unit Accessory for Special Application."

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S530 (1991), "Heat Actuated Fire Detectors for Fire Alarm Systems."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

F – Fire Alarm Equipment

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HOUSEHOLD FIRE-WARNING SYSTEM UNITS CERTIFIED FOR CANADA (UTLQ7)

This category covers the individual units that are interconnected to form an electrically-operated household fire-warning system. These units include a main control unit (with integral or separate power supply) and related accessories intended for connection to the control unit.

Additional equipment and materials, such as bells, horns, heat detectors, smoke detectors, and limited-energy fire detector circuit wiring, may be required in various applications to complete a system. Such products are covered under Audible-signal Appliances Certified for Canada (ULSZ7), Smoke-automatic Fire Detectors Certified for Canada (UROX7), Heat-automatic Fire Detectors Certified for Canada (UQGS7) and Fire Alarm Devices, Single and Multiple Station, and Accessories Certified for Canada (UTER7).

Household Fire-warning System Units Certified for Canada (UTLQ7)−*Continued*

At least one smoke detector is required to be provided in a household fire-warning system. The smoke detector can be either electrically wired to and operated from the control unit, or be a separately-operated device, such as an electrically-operated single-station fire alarm device.

An installation drawing and/or detailed instructions are employed as the controlling factor to assure proper installation and interconnection among units. This material may be attached to the control unit, provided detached, or included as part of an instruction booklet.

An instruction booklet illustrating typical installation layouts, operation, maintenance, servicing and test procedures is supplied with the main control unit. Printed information for a household emergency evacuation plan may be separate or included as part of the booklet.

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Control Units and Accessories, Household System Type Certified for Canada (UTOU7)

USE AND INSTALLATION

This category covers control units and accessories intended to be used as part of a household fire-warning system.

Control Unit — Consists of a unit assembly of electrical parts having provision for connection of a power supply, signal-actuating devices (heat detectors, smoke detectors, switches, etc.), and signal-indicating devices (bells, horns, strobes, etc.).

Combination Control Unit — A control unit may additionally include circuit facilities for connection to burglar-alarm devices to form a combination fire-burglary control unit. In such a combination unit the fire-alarm signal takes precedence over the burglar-alarm signal and a distinction between alarm signals is required. A common trouble signal may be employed for both.

Modular Control or Combination Unit — A control unit may be prewired at the factory or assembled from readily installed modules. A certified burglary module can be added after the unit is installed to expand the system capability. The installation diagram indicates the type and number of modules that can be employed in a control unit.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Household" or "Residential" and the specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Household Fire-warning System Units Certified for Canada (UTLQ7), Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S545, "Residential Fire Warning System Control Units."

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word "SECURITY" above the UL symbol. The product name is "Fire Alarm and Security Equipment" or "Fire Alarm and Security Subassembly."

Some of these products are also Listed under other Signaling and Information Technology or Telephone categories. When applicable, the product name may include "and General Signaling," "and Emergency Signaling," "and Information Technology" or "and Telephone," as appropriate (e.g., "Fire Alarm and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment

Control Units and Accessories, Household System Type Certified for Canada (UTOU7)−*Continued*

F – Fire Alarm Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
IT – Information Technology Equipment
T – Telephone Equipment

Where model numbers are indicated in the individual Listings, 100% of the manufacturer's production for those models is required to be labeled. Where model numbers are not indicated, the manufacturer is not obliged to label 100% of production.

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POWER-SUPPLY UNITS CERTIFIED FOR CANADA (UTRZ7)

GENERAL

This category covers power-supply units intended for application as components of fire-protective signaling systems.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of a specific use description as indicated in the individual certifications.

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S527, ''Control Units for Fire Alarm Systems,'' and ULC-S318 (1996), ''Power Supplies for Burglar Alarm Systems.''

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Fire Alarm Equipment'' or ''Fire Alarm Subassembly.''

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word ''SECURITY'' above the UL symbol. The product name is ''Fire Alarm and Security Equipment'' or ''Fire Alarm and Security Subassembly.''

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include ''and Hospital Signaling and Nurse Call,'' ''and General Signaling,'' ''and Emergency Signaling,'' ''and Enclosed Energy Management,'' ''and Information Technology'' or ''and Telephone,'' as appropriate (e.g., ''Fire Alarm and Telephone Equipment'').

The product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:
S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

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SMOKE-CONTROL-SYSTEM EQUIPMENT CERTIFIED FOR CANADA (UUKL7)

GENERAL

This category covers products intended to be installed in conjunction with heating-ventilating-air conditioning (HVAC) equipment to form a system for controlling the flow of smoke in a building during a fire condition. They are intended to perform specific functions related to a smoke-control system. This function and the interconnection to other smoke-

Smoke-control-system Equipment Certified for Canada (UUKL7)−*Continued*

control equipment, as well as HVAC equipment, are described in an installation document attached to the product or referenced in the marking on the product.

As indicated in the individual certifications, smoke-control equipment is assigned one or more of the following attributes:

OPERATION

Manual — Activation of the smoke-control system occurs as a result of the intervention of an authorized person.

Automatic — Activation of the smoke-control system occurs as a result of an alarm condition from a fire-detection device, such as a smoke detector or heat detector, or from a fire-alarm control unit.

TYPE

Nondedicated — A system that provides the building HVAC function under normal conditions and provides a smoke-control objective during a fire-alarm condition.

Dedicated — A system which is normally inactive and is used exclusively for the purpose of smoke control.

USE

Stairtower — A configuration of equipment that provides pressurizing of stairtowers to maintain a tenable environment for building egress.

Zoned Smoke Control — A configuration of equipment that provides exhausting of the smoke area and pressurizing of all other contiguous areas within a building.

Equipment investigated for mounting in air-handling spaces is specifically identified by markings on the product and in the individual certifications. Installation details are shown on the product or are provided in a separate installation document provided with the product and referenced in the marking on the product.

Smoke-control systems are engineered systems specifically designed to meet the needs of the individual building and its occupants. While the products covered under this category have been investigated for reliability of operation and functionality, they have not been investigated as being suitable for any specific building design, nor has the effectiveness of the overall system in controlling the flow of smoke been determined. Authorities Having Jurisdiction should be consulted prior to installation.

This category does not cover motors, fans, dampers, ducts, etc., that provide the HVAC function.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term ''Smoke Control System'' and the specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C100 (1992), ''Smoke Control System Equipment.''

The basic standard used to investigate products suitable for use in air-handling spaces in this category is UL 2043, ''Fire Tests for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces.''

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name ''Fire Alarm Equipment'' or ''Fire Alarm Subassembly.''

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word ''SECURITY'' above the UL symbol. The product name is ''Fire Alarm and Security Equipment'' or ''Fire Alarm and Security Subassembly.''

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include ''and Hospital Signaling and Nurse Call,'' ''and General Signaling,'' ''and Emergency Signaling,'' ''and Enclosed Energy Management,'' ''and Information Technology'' or ''and Telephone,'' as appropriate (e.g., ''Fire Alarm and Telephone Equipment'').

The product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:
S – Security Equipment

Smoke-control-system Equipment Certified for Canada (UUKL7)−*Continued*

F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

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SPEAKERS FOR FIRE-PROTECTIVE SIGNALING SYSTEMS CERTIFIED FOR CANADA (UUMW7)

USE AND INSTALLATION

This category covers speakers and their accessories investigated for use in fire alarm and/or emergency communication systems.

Speakers have been investigated for audible output of 85dBA or greater measured at 3 m, when powered from a source of pink noise over a range of 600 – 4000 Hz. The units are marked with a minimum audibility rating.

Accessories, such as enclosures, have been investigated with respect to both mechanical and acoustical consideration when used with speakers specified in the individual certifications.

Where a certified product is formed by the assembly of two or more parts and all parts are not provided as a single package, the specific parts are identified in the individual certifications and each part bears a separate Certification Mark. The marking on each part references installation instructions that show assembly and installation of the parts to form a certified product.

All products covered under this category are intended for indoor use only, unless otherwise specifically identified as suitable for outdoor use by markings on the product and in the individual certifications.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Speaker" or "Speaker Enclosure."

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S541, "Speakers for Fire Alarm Systems, Including Accessories."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling categories. When applicable, the product name may include "and General Signaling," as appropriate (e.g., "Fire Alarm and General Signaling Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:
F – Fire Alarm Equipment
G – General Signaling Equipment

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VISUAL-SIGNAL APPLIANCES FOR FIRE-PROTECTIVE SIGNALING SYSTEMS CERTIFIED FOR CANADA (UVAV7)

USE AND INSTALLATION

Visual-signal Appliances for Fire-protective Signaling Systems Certified for Canada (UVAV7)−*Continued*

This category covers visual-signal appliances and accessories investigated for use in fire-protective signaling applications, and are intended for use with Listed compatible fire alarm control units or control unit accessories.

Accessories, such as enclosures and back boxes, and the products with which they are compatible are identified in the individual Listings.

Where multiple parts are employed to form a complete unit, the specific parts are identified in the individual Listings. The marking on each part references installation instructions which show assembly and installation of the parts to form a Listed product.

All products covered under this category are intended for indoor use only unless otherwise specifically marked.

Visual-signal appliances have been investigated for light output measured at a distance of 10 ft. on-axis. The units are marked with a range of light output and flash rate.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Visual Signaling Appliance" or "Visual Signaling Appliance Accessory."

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S526-M87, "Visual Signal Devices for Fire Alarm Systems, Including Accessories."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

Some of these products are also Listed under other Signaling categories. When applicable, the product name may include "and General Signaling," as appropriate (e.g., "Fire Alarm and General Signaling Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:
F – Fire Alarm Equipment
G – General Signaling Equipment

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MISCELLANEOUS DEVICES FOR FIRE-PROTECTIVE SIGNALING SERVICE CERTIFIED FOR CANADA (UXKV7)

GENERAL

This category covers miscellaneous equipment for fire-protective signaling service.

Products are typically investigated for use in an ordinary indoor environment with a prevailing ambient no greater than 25°C. Products investigated for ordinary outdoor locations are identified in the individual certifications with respect to the installation environment (outdoor), location (dry, damp or wet) and maximum air ambient temperature.

Authorities Having Jurisdiction should be consulted before installation.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of a specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S527, "Control Units for Fire Alarm Systems."

UL MARK

The Signaling Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL

Miscellaneous Devices for Fire-protective Signaling Service Certified for Canada (UXKV7)−*Continued*

Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

When applicable, the Security Mark is also included. The combined Signaling/Security Listing Mark consists of the Signaling Mark elements detailed above and the word "SECURITY" above the UL symbol. The product name is "Fire Alarm and Security Equipment" or "Fire Alarm and Security Subassembly."

Some of these products are also Listed under other Signaling and Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Hospital Signaling and Nurse Call," "and General Signaling," "and Emergency Signaling," "and Enclosed Energy Management," "and Information Technology" or "and Telephone," as appropriate (e.g., "Fire Alarm and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

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RELEASING DEVICE EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (TBCX7)

Releasing Devices with accessory equipment are designed to release operating weights or air or water under pressure in the functioning of fire protection and fire alarm equipment.

They are available in both heat responsive (automatic) and manual types. The heat responsive types may be had in either fixed temperature or rate-of-rise types or a combination of these two.

The heat responsive portions of releasing devices are integral parts of some patterns. In other patterns they are separate parts, such as air chambers which are mounted in the fire area and connected by small-bore tubing to the releasing device; or thermostatically operated electric switches (thermostats) mounted in the fire area and connected by an electric wiring circuit to the releasing device. Devices which have normally open contacts are listed as "Heat-Automatic Fire Detectors" and those which have normally closed contacts are listed as "Heat Detectors for Releasing Device Service."

Proper location and spacing of the auxiliary heat responsive devices (heat detectors, air chambers, tubing, etc.) involve consideration of service conditions throughout the area to be protected - such as ceiling construction, subdivisions of areas (including closets, small rooms, etc.) normal temperatures, high temperatures (if existent), resulting from manufacturing processes or other causes and draft conditions. Because of this, the recommendation regarding spacing of detectors gives a maximum limitation only, and recognizes that specific system settings, abnormal temperature changes, or other field conditions may require downward adjustment of these maximum spacing limits in field installations. Individual Listings should be consulted for details of spacing and locations of the heat responsive devices.

Authorities Having Jurisdiction should be consulted in all cases before installation of systems or devices.

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RELEASING DEVICES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (TBJW7)

GENERAL

This category covers releasing devices intended for use in supporting and releasing loads in connection with automatic operating devices or systems where loads at release lever hook do not exceed those specified in the individual certifications.

This category also covers releasing devices intended for use as a means of releasing air or water under pressure from a piping system confining and conducting that pressure through pipes or tubing to operate any connected pressure-operated mechanism.

A releasing device and its associated detection system may be adjusted to compensate for more or less severe ambient temperature changes by different settings of the release, or by varying the size of the compensating vents in the system to increase or decrease the rate of built-up pressure caused by exposure to some given temperature rise. Because of this, the recommendation regarding spacing of detectors gives a maximum limitation only, and recognizes that specific system settings, abnormal temperature changes, or other field conditions may require downward adjustment of these maximum spacing limits in field installations.

RELATED PRODUCTS

See Heat Detectors for Releasing Device Service for Use in Hazardous Locations Certified for Canada (TBGR7) and Heat-automatic Fire Detectors for Use in Hazardous Locations Certified for Canada (UIRV7).

ADDITIONAL INFORMATION

For additional information, see Releasing Device Equipment for Use in Hazardous Locations Certified for Canada (TBCX7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is ULC-S527, "Control Units for Fire-Alarm Systems."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Releasing Devices for Hazardous Locations."

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REPACKAGED ELECTRICAL APPLIANCE AND UTILIZATION EQUIPMENT CERTIFIED FOR CANADA (TEOY7)

GENERAL

This category covers repackaged Listed and Classified electrical appliance and utilization equipment.

Required user instructions and ratings are marked on or packed with the smallest unit container in which the product is packaged. The repackaged product type or category name appears on the packaging.

Products under UL's Listed by Report Service may require special descriptions and recommended methods of installation and are not covered under this category.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are referenced in Repackaged Product Program Requirements at www.ul.com.

UL MARK

The Listing or Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing or Classification and Follow-Up Service.

The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name.

The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), a control number, the appropriate product name, and information pertaining to the scope of the Classification (e.g., "AS TO ELECTRIC SHOCK AND MECHANICAL INJURY," "IN ACCORDANCE WITH IEEE C37.59").

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REPACKAGED ELECTRICAL CONSTRUCTION EQUIPMENT CERTIFIED FOR CANADA (TEOZ7)

GENERAL

This category covers repackaged Listed and Classified electrical construction equipment.

Required user instructions and ratings are marked on or packed with the smallest unit container in which the product is packaged. The repackaged product type or category name appears on the packaging.

Listed wire or cable that has been subjected to processing or respooling subsequent to its manufacture is covered under Processed Wire Certified for Canada (ZKLU7).

Lightning conductors, air terminals and fittings (see OVTZ7) are intended for installation in Listed lightning protection systems and are not eligible for repackaging.

Products under UL's Listed by Report Service may require special descriptions and recommended methods of installation and are not covered under this category.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are referenced in Repackaged Product Program Requirements at www.ul.com.

UL MARK

The Listing or Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing or Classification and Follow-Up Service.

The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the appropriate product name.

The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), a control number, the appropriate product name, and information pertaining to the scope of the Classification (e.g., "AS TO ELECTRIC SHOCK AND MECHANICAL INJURY," "IN ACCORDANCE WITH IEEE C37.59").

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ROBOTS AND ROBOTIC EQUIPMENT CERTIFIED FOR CANADA (TETZ7)

GENERAL

This category covers robots, integrated work cells, programmable production equipment, remote sensing equipment, robotic servo power supplies, and similar equipment.

This equipment has been investigated with respect to risks of electric shock, fire and injury to persons.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-Z434 (2003), "Industrial Robots and Robot Systems – General Safety Requirement," and CSA-C22.2 No. 73, "Construction and Test of Electrically Equipped Machine Tools."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Robot," or other appropriate product name as shown in the individual Listings.

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ROOF-COVERING MATERIALS CERTIFIED FOR CANADA (TEVT7)

GENERAL

This category covers roof-covering materials, which consist of two basic types: (1) roofing systems, generally involving the assembly of several components and may require special equipment to apply the materials involved, and (2) prepared materials, which can be applied directly to a roof deck in accordance with the manufacturer's instructions provided with the product. These coverings are intended for the protection of roof decks from external fire exposure and have not been investigated for performance when exposed to a fire from an internal source, i.e., directed onto the underside of the roof deck assembly.

Roofing systems are composed of the materials shown under the various generic system types referenced under Roofing Systems Certified for Canada (TGFU7) and as described under Roofing Systems (TGFU), to provide Class A, B or C for resistant coverings.

Where indicated in the individual Listings, the wind resistance of prepared roof coverings has been investigated to CAN/CSA-A123.5-M90, "Asphalt Shingles Made From Organic Felt and Surfaced With Mineral Granules/Asphalt Shingles Made From Glass Felt and Surfaced With Mineral Granules."

The weatherability of these roof-covering materials has not been investigated.

Authorities Having Jurisdiction should be consulted as to which class of roof coverings will be acceptable in each location.

CLASSES

Class A includes roof coverings which are effective against severe fire exposure. Under such exposure, roof coverings of this class are not readily flammable and do not carry or communicate fire, afford a fairly high degree of fire protection to the roof deck, do not slip from position, possess no flying brand hazard, and do not require frequent repairs in order to maintain their fire resisting properties.

Class B includes roof coverings which are effective against moderate fire exposure. Under such exposure, roof coverings of this class are not readily flammable and do not readily carry or communicate fire, afford a moderate degree of fire protection to the roof deck, do not slip from position, and possess no flying brand hazard, but may require infrequent repairs in order to maintain their fire resisting properties.

Class C includes roof coverings which are effective against light fire exposure. Under such exposure, roof coverings of this class are not readily flammable and do not readily carry or communicate fire, afford some degree of fire protection to the roof deck, do not slip from position, possess no flying brand hazard, and may require occasional repairs or renewals in order to maintain their fire resisting properties.

Roofing systems provide Class A, B or C coverings over combustible and/or noncombustible (steel, concrete or poured gypsum) decks. Prepared roof-covering materials provide class A, B or C coverings over combustible decks. Combustible decks consist of the following types:

(A) Minimum 3/4 in. thick sheathing boards.
(B) Minimum 3/8 in. (for Prepared) or 15/32 in. for (Roofing Systems) thick plywood.
(C) Minimum 3/8 in. (for Prepared) or 7/16 in. (for Roofing Systems) thick nonveneer sheathing (oriented strand board panels or waferboard panels).

RELATED PRODUCTS

Prepared roof coverings shown in Prepared Roof-covering Materials Certified for Canada (TFWZ7) and applied in accordance with detailed instructions included in the packages of materials provide Class A, B or C fire resistant coverings and wind resistant coverings as indicated on the Listing Mark for Canada applied to each package.

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PREPARED ROOF-COVERING MATERIALS CERTIFIED FOR CANADA (TFWZ7)

GENERAL

This category covers materials intended to provide Classes A, B and C coverings on combustible (wood, 3/4-in. thick sheathing boards or 3/4-in. thick plywood unless otherwise indicated) decks when applied in accordance with detailed instructions included with the packages.

The use of 15/32-in. thick (minimum) plywood is a suitable alternate to 1/2-in. thick (minimum) plywood specified in the individual certifications.

The use of 3/8-in. thick (minimum) nonveneer sheathing panels (composite panels or waferboard panels) is a suitable alternate to 1/2-in. thick (minimum) plywood specified in the individual certifications when a UL-certified underlayment is utilized between the sheathing and the prepared roof covering.

Certifications are applicable either for new work or for recovering purposes.

Flashings and trimmings are intended to be the same as or not less than the equivalent of the roof coverings in each class, or of 16 oz or heavier copper, No. 26 USS gauge or heavier galvanized steel, or 0.019 in. thick or heavier aluminum.

This category also covers shingles with factory-applied adhesives or integral locking features. The certification markings for such shingles may, in addition to fire-resistance information, include wind-resistance information.

PREPARED ROOF COVERINGS

Asphalt Organic-Felt Shingle Coverings are composed of asphalt organic-felt (previously identified as rag-felt) grit-surfaced shingles, one or more thickness, laid in accordance with the instruction sheets accompanying the packages. These coverings are limited to roof decks capable of receiving and retaining nails and to inclines sufficient to permit drainage.

Asphalt Glass-Fiber Mat Shingle Coverings are composed of asphalt glass-fiber mat, grit-surfaced shingles, laid in accordance with the instruction sheets accompanying the packages. These coverings are limited to roof decks capable of receiving and retaining nails and to inclines sufficient to permit drainage.

Modified Asphalt Glass-Fiber Mat, Asphalt Organic-Felt or Glass-Fiber/Polyester Composite Shingle Coverings are composed of modified asphalt-coated glass-fiber mat or glass-fiber/polyester composite, grit-surfaced shingles, laid in accordance with the instruction sheets accompanying the packages. These coverings are limited to roof decks capable of receiving and retaining nails and to inclines sufficient to permit drainage.

Wind-resistant Asphalt Glass-Fiber Mat Shingles are provided with field-applied or factory-applied adhesive or integral locking tabs. Some shingles with factory-applied adhesive utilize bands or spots of a heat-sensitive adhesive located either on the surface of the shingles or on the back side of each tab. Adhesives of this type must be activated by solar heat of intensity generally attained on warm, sunny days. Other shingles with factory-applied adhesive utilize a combination pressure-sensitive and heat-sensitive adhesive. Due to the nature of adhesives of this type, sealing is induced by application of pressure and/or heat.

Wind-resistant Asphalt Organic-Felt Shingles are provided with factory-applied adhesive or integral locking tabs. Some shingles with factory-applied adhesive utilize bands or spots of a heat-sensitive adhesive located either on the surface of the shingles or on the back side of each tab. Adhesives of this type must be activated by solar heat of intensity generally attained on warm, sunny days. Other shingles with factory-applied adhesive utilize a combination pressure-sensitive and heat-sensitive adhesive. Due to the nature of adhesives of this type, sealing is induced by application of pressure and/or heat.

Wind-resistant Modified Asphalt Glass-Fiber Mat Shingles are provided with factory-applied adhesive. Some shingles with factory-applied adhesive utilize bands or spots of a heat-sensitive adhesive located either on the surface of the shingles or on the back of each tab. Adhesives of this type must be activated by solar heat of intensity generally attained on warm, sunny days. Other shingles with factory-applied adhesive utilize a combination pressure-sensitive and heat-sensitive adhesive. Due to the nature of adhesives of this type, sealing is induced by application of pressure and/or heat.

RELATED PRODUCTS

Accessory components utilized in the prepared roof-covering system are covered under Prepared Roofing Accessories Certified for Canada (TGDY7). Ridge vents utilized in the prepared roof-covering system are covered under Ridge Vents Certified for Canada (TGEW7). Type 15 and Type 30 asphalt felts, used as underlayments, are covered under Roofing Systems Certified for Canada (TGFU7). Underlayments, ridge vents and accessory components, when utilized, are intended to be certified materials.

Other types of prepared roof-covering materials are covered under Prepared Roof-covering Materials, Formed or Molded Metal, Fiber-Cement, Plastic or Fire Retardant -treated Wood Certified for Canada (TFXX7).

ADDITIONAL INFORMATION

Prepared Roof-covering Materials Certified for Canada (TFWZ7)−*Continued*

For additional information, see Roof-covering Materials Certified for Canada (TEVT7) and Roofing Materials and Systems Certified for Canada (AARM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S107, "Method of Fire Tests for Roof Coverings."

Where indicated in the individual certifications, specific products have also been investigated to ASTM D3462, "Standard Specifications for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules," or CSA-A123.5 (1998), "Asphalt Shingles Made from Organic Felt and Surfaced with Mineral Granules/Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," and the following additional information:

PREPARED ROOF COVERING MATERIALS
[PRODUCT TYPE]
CLASS +
DEGREE OF RESISTANCE TO EXTERNAL FIRE
AND FLAMMABILITY LIMITS
IN ACCORDANCE WITH CAN/ULC-S107
Issue No.
++

\+ **A**, **B** or **C**

++ The following statement may be added, if qualified:

ALSO CLASSIFIED FOR DEGREE OF WIND RESISTANCE
IN ACCORDANCE WITH CAN/CSA-A123.5- 98
*** ***

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PREPARED ROOF-COVERING MATERIALS, FORMED OR MOLDED METAL, FIBER-CEMENT, PLASTIC OR FIRE-RETARDANT-TREATED WOOD CERTIFIED FOR CANADA (TFXX7)

GENERAL

This category covers materials intended to provide Classes A, B and C coverings on combustible (wood, 3/4-in. thick sheathing boards or 1/2-in. thick plywood unless otherwise indicated) decks when applied in accordance with detailed instructions included with the packages.

The use of 15/32-in. thick (minimum) plywood is a suitable alternate to 1/2-in. thick (minimum) plywood specified in the individual certifications.

The use of 3/8-in. thick (minimum) non-veneer APA Rated Series Sheathing (oriented strandboard panels, structural particleboard panels, composite panels or waferboard panels) is a suitable alternate to 1/2-in. thick (minimum) plywood specified in the individual certifications for when a UL-certified underlayment is utilized between the sheathing and the prepared roof covering.

Certifications are applicable either for new work or for recovering purposes.

Flashings and trimmings are intended to be the same as or not less than the equivalent of the roof coverings in each class, or of 16 oz. or heavier copper, No. 26 USS gauge or heavier galvanized steel, or 0.019-in. thick or heavier aluminum.

PREPARED ROOF-COVERING MATERIALS

Fiber-Cement Shingle Coverings are composed of non-asbestos fiber-cement shingles laid to provide two or more thicknesses in accordance with the instruction sheets accompanying the packages. These coverings are limited to roof decks capable of receiving and retaining nails and to inclines exceeding 3 in. to the horizontal foot.

Fire Retardant-treated Red Cedar Shakes and Shingles are composed of red cedar shakes and shingles pressure impregnated with a fire-retardant treating solution.

Formed Metal Shingle, Shake or Panel Coverings are composed of plain or painted aluminum sheet alloy, painted or coated steel or copper laid in accordance with the instruction sheets accompanying the packages. These coverings are limited to roof decks capable of receiving and retaining nails and to inclines sufficient to permit drainage. These coverings have been investigated only for fire resistance.

Prepared Roof-covering Materials, Formed or Molded Metal, Fiber-Cement, Plastic or Fire-retardant-treated Wood Certified for Canada (TFXX7)−*Continued*

Formed or Molded Plastic Shingles are composed of various plastic materials formed into various shapes in various colors. These coverings are limited to inclines sufficient to permit drainage.

Photovoltaic (Solar) Modules/Shingles are composed of flat-plate photovoltaic module/panels fabricated in sheets that resemble three-tab composite shingles when installed in accordance with the manufacturer's installation instructions. These coverings are limited to nominal 15/32-in. thick (minimum) plywood decks and to inclines sufficient to permit drainage. These coverings have also been investigated in accordance with ULC/ORD-C1703, "Flat-Plate Photovoltaic Modules and Panels" [see Photovoltaic Modules and Panels Certified for Canada (QIGU7)].

Reinforced Cast Stone Shingles are composed primarily of stone dust and a small amount of resin reinforced with glass fiber. These shingles are limited to 15/32-in. thick (minimum) plywood decks and to inclines sufficient to permit drainage.

RELATED PRODUCTS

Accessory components utilized in the prepared roof-covering system are covered under Prepared Roofing Accessories Certified for Canada (TGDY7). Ridge vents utilized in the prepared roof-covering system are covered under Ridge Vents Certified for Canada (TGEW7). Type 15 and Type 30 asphalt felts, used as underlayments, are covered under Roofing Systems Certified for Canada (TGFU7). Underlayments, ridge vents and accessory components, when utilized, are intended to be certified materials.

Other types of prepared roof-covering materials are covered under Prepared Roof-covering Materials Certified for Canada (TFWZ7).

ADDITIONAL INFORMATION

For additional information, see Roof-covering Materials Certified for Canada (TEVT7) and Roofing Materials and Systems Certified for Canada (AARM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S107, "Method of Fire Tests for Roof Coverings"

Where indicated in the individual certifications, specific products have also been investigated to CSA-A123.5 (1998), "Asphalt Shingles Made from Organic Felt and Surfaced with Mineral Granules/Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," and the following additional information:

PREPARED ROOF COVERING MATERIALS
[PRODUCT TYPE]
CLASS +
DEGREE OF RESISTANCE TO EXTERNAL FIRE
AND FLAMMABILITY LIMITS
IN ACCORDANCE WITH CAN/ULC-S107
Control No.
++

+ **A**, **B** or **C**

++ The following statement may be added, if qualified:

ALSO CLASSIFIED FOR DEGREE OF WIND RESISTANCE
IN ACCORDANCE WITH CAN/CSA-A123.5-98
*** ***

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PREPARED ROOFING ACCESSORIES CERTIFIED FOR CANADA (TGDY7)

GENERAL

This category covers materials intended for use as an accessory component of a prepared roof-covering system.

These accessories are intended to be installed in accordance with the application instructions included with the basic prepared roof-covering material.

ADDITIONAL INFORMATION

For additional information, see Roof-covering Materials (TEVT) and Roofing Materials and Systems (AARM).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S107, "Method of Fire Tests for Roof Coverings."

Prepared Roofing Accessories Certified for Canada (TGDY7)−*Continued*

UL MARK

The Classification Mark of UL on the roll, package or container is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory) and the following additional information:

PREPARED ROOFING ACCESSORY
AS TO AN EXTERNAL FIRE EXPOSURE ONLY
WHEN APPLIED IN ACCORDANCE WITH INSTRUCTIONS
INCLUDED WITH THE PREPARED ROOFING
Issue No.
*** ***

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ROOFING SYSTEMS CERTIFIED FOR CANADA (TGFU7)

GENERAL

This category covers materials intended for roofing systems that provide Class A, B or C coverings on combustible (wood – 3/4-in.-thick sheathing boards or plywood, unless otherwise indicated) and noncombustible (steel, concrete or poured gypsum) decks, unless otherwise indicated in the individual certifications. Minimum 2-in.-thick unfaced structural cement-fiber units, formed into slabs or boards and covered under Structural Cement-Fiber Units Certified for Canada (CIYT7), are suitable alternates as roof decks for all certified roofing systems intended for use over noncombustible decks.

The use of 7/16-in. (minimum) thick nonveneer sheathing (oriented strand board panels, structural particleboard panel, composite panels or waferboard panels) is a suitable alternate to 15/32-in. (minimum) thick plywood specified in the Class A, B or C certifications for the individual manufacturers. Certifications are applicable to roofing systems used over insulated decks when so indicated in the individual certifications.

Certified gypsum wallboard, any thickness, may be included in any roofing system without adversely effecting the certification. Insulations may be attached to the deck with fasteners, hot mopping asphalt or certified adhesive.

Certifications are applicable either for new construction, recovering or replacement purposes. (Recovering is the process of covering an existing roofing system with a new roofing system. Replacement is the process of removing an existing roof system and replacing it with a new system.) For recovering situations, certified uninsulated new construction assemblies are not intended for installation over existing certified insulated assemblies unless specifically certified in **MAINTENANCE AND REPAIR SYSTEMS** under Roofing Systems (TGFU).

Certified insulated systems may be installed over existing certified insulated systems when:

1) the new system is certified for use with the existing roof insulation type (glass fiber, perlite, wood fiber, foamed plastic, etc.), and
2) the total thickness of insulation in both systems does not exceed the maximum specified for the new system being supplied.

For installation over noncombustible decks, any certified insulated system utilizing minimum 1-in.-thick insulation (glass fiber, polyisocyanurate or perlite) may be used over any existing insulated system regardless of the type if its insulation in both systems does not exceed the maximum specified for the new system being applied. Certification is determined by the new construction system.

The above classifications apply only to coverings composed of certified materials assembled as described in the individual manufacturer certifications; flashings and trimmings being the same as or not less than the equivalent of the roofing systems in each class, or of 16 oz or heavier copper, No. 26 gauge or heavier galvanized steel, or 0.019 in. thick or heavier aluminum.

This category covers the following roofing systems, which are composed of varying types of components:

1. Asphalt Felt Systems (Organic, Asbestos or Glass Fiber) with Hot Roofing Asphalt
2. Coal Tar Felt Systems (Organic, Asbestos or Glass Fiber) with Hot Roofing Coal Tar Pitch
3. Cold Application Systems (Asphalt Felts or Ply Sheets with Cold Cements and Coatings)
4. Combination Hot and Cold Systems
5. Fluid-applied Coating Systems
6. Maintenance and Repair Systems

Roofing Systems Certified for Canada (TGFU7)−*Continued*

7. Single-ply Membrane Systems (Includes Modified Bitumen Membranes)
8. Spray-applied Foam and Coating Systems
9. Other systems

The composition of each of these system types is described in the UL Online Certifications Directory.

ADDITIONAL INFORMATION

For additional information, see Roof-covering Materials Certified for Canada (TEVT7) and Roofing Materials and Systems Certified for Canada (AARM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S107, "Methods of Fire Tests of Roof Coverings."

UL MARK

Two methods of labeling are provided for this material: (1) Each bundle, package or container will bear the Classification Mark, (2) a Certificate is issued to the interested parties. This Certificate is prepared for each construction site that the manufacturer supplies. The use of the Certificate is optional when each bundle, package or container bears the Classification Mark but, in all cases, is restricted to material shipped directly from the manufacturer to a construction site.

The Classification Mark of UL on the bundle, package or container is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

+ FOR ROOFING SYSTEMS
AS TO EXTERNAL FIRE EXPOSURE
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA AND UL ROOFING MATERIALS AND SYSTEMS DIRECTORY
Control No.

+ One of the following designations:

1. **CEMENTS AND COATINGS**
2. **TYPE 15 SATURATED FELT, CAP OR BASE/PLY SHEET**
3. **TYPE 30 SATURATED FELT, CAP OR BASE/PLY SHEET**
4. **TYPE G1 COATED BASE/PLY SHEET**
5. **TYPE G2 COATED CAP OR BASE/PLY SHEET**
6. **TYPE G3 MINERAL SURFACED BASE/CAP SHEET**
7. **MINERAL AND FIBER BOARD**
8. **FOAMED PLASTIC**
9. **TILES**
10. **BUILDING UNITS**
11. **MEMBRANE**
12. **FLASHING MATERIAL**
13. **FOAMED PLASTIC INGREDIENT**
14. **BASE/PLY SHEET**
15. **SLIP SHEET**
16. **HOLD DOWN DEVICE**
17. **MEMBRANE SPLICING TAPE**
18. **INSULATION JOINT TAPE**
19. **INSULATION ADHESIVE**

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RIDGE VENTS CERTIFIED FOR CANADA (TGEW7)

USE AND INSTALLATION

This category covers ridge vents intended for use with Prepared Roof-covering Materials (TFWZ7).

These ridge vents have been investigated for resistance to external fire exposure only when installed in accordance with the manufacturer's installation instructions provided with the ridge vents.

Authorities Having Jurisdiction should be consulted as to which class of ridge vent will be acceptable in each location.

FACTORS NOT INVESTIGATED

The corrosion resistance of metal ridge vents has not been investigated.

The ability of these products to provide attic ventilation in accordance with requirements of nationally recognized codes and standards has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Roof-covering Materials Certified for Canada (TEVT7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S107, "Standard Method of Tests of Roof Coverings."

UL MARK

The Classification Mark of UL on the product or package is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RIDGE VENTS – CLASS +
AS TO AN EXTERNAL FIRE EXPOSURE ONLY
WHEN INSTALLED IN ACCORDANCE WITH INSTRUCTIONS PROVIDED WITH RIDGE VENTS
Control No.

+ **A**, **B** or **C**

****

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ROOF DECK CONSTRUCTIONS CERTIFIED FOR CANADA (TGKX7)

Roof deck constructions are illustrated and described in the Roofing Materials and Systems Directory and are identified by a construction number and evaluated as to the spread of fire on the underside.

UL's tunnel furnace normally used to develop Surface Burning Characteristics of individual building materials has been adapted to tests of these assemblies. The limits of flame spread applicable to constructions described in this category were established by analysis of results of tunnel furnace tests of other constructions, which by large scale fire tests and by experience in actual installations were known to have contributed extensively to flame spread or, conversely, were regarded as being eligible for Classification from this standpoint.

The primary construction considered for the purpose of establishing limits was a steel roof deck, without vapor retarder or adhesives, insulated with 1-in. thick plain vegetable fiberboard mechanically attached and covered with a 4-ply built-up roof covering with gravel surfacing. As one requisite of Classification under this category, roof deck constructions shall not develop flame spread on the underside in excess of the limits established in tests of the above assembly. Fire Classified assemblies may be evaluated by either large scale fire testing or using procedures described in CAN/ULC-S126, "Standard Method of Test for Fire Spread under Roof Deck Assemblies."

These Classifications should not be confused with those appearing under either the Surface Burning Characteristics or the Fire Resistance Classification. The Surface Burning Characteristics is a comparative evaluation of materials (occasionally with facings or backing) with respect to flame spread and smoke developed. The Fire Resistance Classification is the time rating of an assembly with respect to resistance to flame passage, heat transfer and maintenance of structural integrity.

Roof deck constructions which are Classified as to fire are various assemblies of materials as illustrated and described in the Roofing Materials and Systems Directory. The assemblies are Classified on the basis of specific requirements for maximum flame spread on the underside of the assembly within definite time limits. These constructions differ from materials Classified with respect to Surface Burning Characteristics in that in the latter, materials are assigned comparative numerical values. They also differ from assemblies Classified with respect to Fire Resistance since temperature transmission through roof deck constructions and structural performance under load are not measured nor are time ratings assigned.

A fire investigation of a roof deck construction primarily determines whether the contribution to an igniting fire by any or all of the materials in the assembly is at a sufficient rate to cause propagation of flame on the underside, in excess of the established limits.

Authorities Having Jurisdiction should be consulted as to which type of deck construction is acceptable for any given location before installation.

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ROOF DECK CONSTRUCTION MATERIALS CERTIFIED FOR CANADA (TGYV7)

Building Units Certified for Canada (TIAR7)

GENERAL

This category covers building units for use in roof deck constructions. The applicable Construction Numbers for these materials are indicated in the individual certifications.

Building units, consisting of proprietary mixes of organic and/or inorganic materials formed into blocks, boards, planks, slabs, or sheets fabricated into various sizes, thicknesses, and shapes, are certified for use in constructions as shown in the individual certifications. The insulating, acoustical, structural, and other properties have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

Properties of the building units other than those relating to their capacity to contribute to the spread of flame on the underside of the construction have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Roof Deck Constructions Certified for Canada (TGKX7) and Roofing Materials and Systems Certified for Canada (AARM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S126, ''Standard Method of Test for Fire Spread Under Roof Deck Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

BUILDING UNITS
AS ROOF DECK CONSTRUCTION MATERIAL
WITH RESISTANCE TO INTERNAL FIRE EXPOSURE
FOR USE IN CONSTRUCTION NO(S). ____
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA
AND UL ROOFING MATERIALS AND SYSTEMS DIRECTORY
Control No.

* *

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Foamed Plastic Certified for Canada (TJBX7)

GENERAL

This category covers foamed plastic material intended for use in roof deck constructions. The applicable Construction Numbers for these materials are indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

Properties of the materials other than their capacity to contribute to the spread of flame on the underside of the construction have not been investigated.

RELATED PRODUCTS

For surface-burning characteristics of foamed plastics, see Foamed Plastic Certified for Canada (BRYX7).

ADDITIONAL INFORMATION

For additional information, see Roof Deck Constructions Certified for Canada (TGKX7) and Roofing Materials and Systems Certified for Canada (AARM7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S126, ''Standard Method of Test for Fire Spread Under Roof Deck Assemblies.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

Foamed Plastic Certified for Canada (TJBX7)−*Continued*

FOAMED PLASTIC
AS ROOF DECK CONSTRUCTION MATERIAL
WITH RESISTANCE TO INTERNAL FIRE EXPOSURE
FOR USE IN CONSTRUCTION NO(S). ____
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA
AND UL ROOFING MATERIALS AND SYSTEMS DIRECTORY
Control No.

* *

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SAFES AND CHESTS CERTIFIED FOR CANADA (TOXV7)

AUTOMATED TELLER SYSTEMS CERTIFIED FOR CANADA (TPEU7)

GENERAL

This category covers automated teller systems, which are generally unattended units designed to dispense currency and may also perform other functions usually handled by a bank teller. They may be accessible 24 hours a day or only during business hours.

The system consists of a customer access panel and a security container combined to provide the intended services and designed to protect against theft of its contents.

A teller's cash dispenser is intended to dispense currency directly to the bank teller only.

ADDITIONAL INFORMATION

For additional information, see Security Equipment Certified for Canada (ALOV7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 950 (1989), ''Safety of Information Technology Equipment Including Electrical Business Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED'', a control number, and the following product names: ''Automated Teller System'', ''Automated Teller Machine'', ''ATM'', or ''Teller's Cash Dispenser'' followed by ''Business Hour Service'' or ''24-Hour Service-Level 1'' or ''24-Hour Service-Level 2'' . Accessory units include the following product names: ''Automated Teller System Accessory'' or ''Automated Teller Machine Accessory'' or ''Teller's Cash Dispenser Accessory'' .

When components are assembled at the point of installation the following shall be used: ''Automated Teller System or Teller's Cash Dispenser When Used With (Company Name) Listed Automated Teller or Teller's Cash Dispenser Enclosure Parts (Part or Model Nos.) and Automated Teller or Teller's Cash Dispenser Modules (Part or Model Nos.)'' followed by: ''Business Hour Service'' or ''24-Hour Service-Level 1'' or ''24-Hour Service-Level 2'' . The enclosure parts and modules shall use: ''Automated Teller or Teller's Cash Dispenser Enclosure Part (Part or Model No.)'' and ''Automated Teller or Teller's Cash Dispenser Module (Part or Model No.)'' .

* *

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SAW CHAIN CERTIFIED FOR CANADA (TSZQ7)

USE

This category covers saw chain intended for use on gasoline-powered chain saws. Two types of saw chain are covered:

Type A reduced-kickback saw chain — For kickback performance requirements of CSA-Z62.3, Clause 4.1.3.1.

Type C low-kickback saw chain — For kickback performance

requirements of CSA-Z62.3, Clause 4.1.3.2.

Replacement saw chain — For kickback performance requirements of CSA-Z62.3, Clause 4.1.2.

RELATED PRODUCTS

Gasoline-powered chain saws are covered under Chain Saws Certified for Canada (JOOW7).

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

These products are investigated to the applicable paragraphs of CSA-Z62.3, "Chain Saw Kickback."

UL MARK

The Classification Mark of UL on the chain reel or the smallest unit container is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*]
IN ACCORDANCE WITH CSA STANDARD Z62.3
Control No.

* **REDUCED-KICKBACK SAW CHAIN**, **LOW-KICKBACK SAW CHAIN** or **REPLACEMENT SAW CHAIN**

****

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SCAFFOLDING CERTIFIED FOR CANADA (TTDZ7)

DEVICES, SCAFFOLDING CERTIFIED FOR CANADA (TTRX7)

USE AND INSTALLATION

This category covers fabricated assemblies, such as (a) decorators' planks usually employed with ladders, (b) scaffold planks for use with scaffolding, (c) stage platforms for suspended scaffolds and (d) modular stage platforms for suspended scaffolds. The devices have been investigated only for their load-carrying capacity.

These devices are intended to be used with other scaffolding components to form a scaffolding system. Other components used in the system, such as hoists, stirrups and end frames are covered under Scaffolding Equipment Certified for Canada (TUFV7).

The installation of these devices is intended to be in accordance with the requirements of Authorities Having Jurisdiction and the manufacturer's instructions.

The investigation of these devices consists of strength tests to determine the ability of the device to carry rated load with a factor of four. The load-capacity rating is as indicated in the individual certifications and is marked on each device.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-Z271-1998, "Safety Code for Suspended Elevating Platforms."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME*]
AS TO LOAD CAPACITY ONLY
Control No.

* **DECORATOR PLANK**, **SCAFFOLD PLANK**, **STAGE PLATFORM**, **MODULAR PLATFORM** or **WORK BASKET**

****

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ELEVATING WORK PLATFORMS CERTIFIED FOR CANADA (TTYW7)

USE

This category covers self-propelled integral chassis aerial platforms having a platform that either rises directly above the base (CAN/CSA-B354.4), or that can move beyond the perimeter of the base (CAN/CSA-B354.2). Aerial platforms are power operated with primary functions, including drive, controlled from the platforms and are used to position personnel, along with their necessary tools and materials, at work locations.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-B354.4 (2002), "Self-Propelled Boom-Supported Elevating Work Platforms," or CAN/CSA-B354.2 (2001), "Self-Propelled Elevating Work Platforms."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY+]
IN ACCORDANCE WITH NATIONAL STANDARD OF CANADA SAFETY REQUIREMENTS FOR ELEVATING WORK PLATFORMS
++
Control No.

\+ **BOOM-SUPPORTED ELEVATED WORK PLATFORM** or **SELF-PROPELLED ELEVATED WORK PLATFORM**

++ **CAN/CSA-B354.4-02** or **CAN/CSA-B354.2-01**

****

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EQUIPMENT, SCAFFOLDING CERTIFIED FOR CANADA (TUFV7)

USE AND INSTALLATION

This category covers hoists intended for use with suspended scaffolds, accessories for use with suspended scaffolds, such as stirrups, work planks, etc., and components, such as end frames, braces, brackets, screw jacks, work planks, etc., which are intended to be used in the erection of a self-supporting scaffold system.

The investigation of these devices consists of strength tests to determine the ability of the device to carry a rated load. The load-capacity rating is as indicated in the individual certifications and is marked on each device. Electric hoists have also been certified as to electrical fire and shock hazards.

These devices are intended to be used with other scaffolding components to form a scaffolding system. Hoists and stirrups are intended for use with modular stage platforms and stage platforms, which are covered under Scaffolding Devices Certified for Canada (TTRX7).

The assembly and erection of a scaffolding system is not inspected by UL, and is intended to be in accordance with the requirements of the Authority Having Jurisdiction and the manufacturer's instructions.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-Z271, "Safety Code for Suspended Elevating Platforms."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME+]
AS TO LOAD CAPACITY (ELECTRICAL FIRE AND SHOCK HAZARDS*) ONLY
Control No.

\+ The appropriate product name as shown in the individual Classifications

* Applies only to electric hoists

****

Equipment, Scaffolding Certified for Canada (TUFV7)−*Continued*

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SCALES AND ACCESSORIES, ELECTRONIC CERTIFIED FOR CANADA (TUTT7)

GENERAL

This category covers equipment, appliances and systems rated 600 V or less normally found in computer/data processing rooms, offices, other business establishments, educational facilities, residences, and other similar environments.

Equipment may be electromechanical or electronic in design or any combination thereof.

This equipment includes counter- and computer-type scales, weighing machines in all capacities, with or without label printers, lighting or remote controls, devices for use with platform scales, and other types of weighing equipment and accessories. This equipment may be cord-and-plug connected or permanently connected. Accessories intended for use with one another or with individual scales are marked to indicate the appropriate combination of use.

The individual units comprising a system installation are designed to be interconnected and installed by one of the wiring methods outlined in CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 950 (1989), "Safety of Information Technology Equipment, Including Electrical Business Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Scales" or "Scale Accessories," or other appropriate product name as shown in the individual Listings.

* *

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SEALING, WRAPPING AND MARKING EQUIPMENT CERTIFIED FOR CANADA (TVOR7)

USE AND INSTALLATION

This category covers sealing machines, wrapping machines, marking machines and accessories, as well as combinations of the preceding products, rated 600 V or less, intended for use in the packaging of foods and other articles in commercial or industrial establishments and in homes. This equipment may be portable, stationary, or permanently installed.

Suitable cautionary or warning markings are provided as indicated in the individual certifications and on the equipment itself to inform the user of a potential risk of fire, electric shock and injury to persons, including equipment that:

is intended to be used with flammable liquids,
is not intended for immersion (or only intended for partial immersion) for cleaning in water,
requires a stabilizing means to be engaged before operation,
requires disassembly by means of a tool for user servicing resulting in the exposure of live parts that are normally enclosed or protected,
attains high surface temperatures during normal use, and
has provisions for permanent connection to multiple power supplies.

The marking informs the user of the specific actions to take to mitigate the potential risk of fire, electrical shock or injury to persons involved.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA C22.2 No. 64 (1991), "Household Cooking and Liquid-Heating Appliances," CAN/CSA C22.2 No. 68 (1992), "Motor-Operated Appliances (Household and Commercial)," C22.2 No. 88 (1958), "Construction and Test of Industrial Heating Equipment," and C22.2 No. 122 (1989), "Hand-Held Electrically Heated Tools."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sealing Equipment," "Wrapping Equipment" or "Marking Equipment," or other appropriate product name as shown in the individual Listings.

* *

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SEWING AND CUTTING MACHINES CERTIFIED FOR CANADA (UBCZ7)

USE

This category covers electric sewing machines, sewing machine appliances, vibrator-powered scissors, and cloth-cutting machines for household and commercial use. This category also covers textile equipment for use in unclassified locations, but does not cover equipment intended for use in hazardous (classified) locations, such as certain textile-processing equipment and yarn-handling equipment.

These products may be provided with attachments, such as a foot controller, presser feet, bobbins, etc., not involving moving or cutting parts. Attachments that perform functions other than intended by the basic design have not been investigated unless specifically noted in the individual certifications and covered in the installation and use instructions.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sewing Machine" or "Cutting Machine," or other appropriate product name as shown in the individual Listings.

* *

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SHIPBOARD CABLE, MARINE CERTIFIED FOR CANADA (UBVZ7)

USE

This category covers distribution (power), control and signal cable for use aboard commercial ships and mobile offshore drilling units (MODUs), in single or multiconductor construction, with or without metal armor and with or without an overall jacket.

The cable covered under this category is distribution cable rated 600 V, 1 kV, 2 kV, 5 kV or 8 kV, control cable rated 600 V, and signal cable rated 300 V.

CABLE MARKINGS

The cable is marked "-35C" and "FT4."

Cable that is considered equivalent but has a continuous corrugated aluminum armor is identified by the marking "CWCMC" in addition to the manufacturer's catalog designation for the cable.

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 245, ''Marine Shipboard Cable.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, coil, reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Marine Shipboard Cable.''

* *

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SHIPBOARD CABLE FITTINGS, MARINE CERTIFIED FOR CANADA (UBWE7)

USE AND INSTALLATION

This category covers fittings intended for use with marine shipboard cable, with and without metal wire armor and with and without nonmetallic jacket over the metal wire armor. No splices of conductors are intended to be made in the fittings. Restrictions on application, position, and/or location of the fittings are indicated in the manufacturer's instructions.

All male threaded fittings have only been investigated for use with locknuts.

These fittings are intended for use on mobile offshore oil rigs and drilling platforms. Investigations of these fittings include an evaluation for conformity to the installation.

Reusability — Fittings have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Shipboard Cable, Marine Certified for Canada (UBVZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 18.3 (2004), ''Conduit, Tubing, and Cable Fittings.''

UL MARK

The UL symbol on the product and the Marine Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Marine Listing Mark for these products includes the UL Mark for Canada symbol with the word ''MARINE'' above the UL symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Shipboard Cable Fitting,'' or other appropriate product name as shown in the individual Listings.

* *

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SHORE-POWER CABLE SETS, MARINE CERTIFIED FOR CANADA (UBWW7)

USE

This category covers shore-power cable sets rated less than 300 V used in supplying ac shore power to boats which are moored to a dock.

They are intended to be stored aboard the boat, where not exposed to sunlight and/or weather while not in use.

Shore-power cable sets comply with the applicable requirements for outdoor-use cord sets and additional requirements to determine their acceptability for supplying power to a boat moored to a dock.

The male and female end fittings of a shore-power cable set are intended to be connected to suitable shore-power outlet and shore-power inlet devices, respectively. The connections to the power inlet and outlet devices are to provide a seal against water.

Shore-power cable sets are commonly furnished in coiled form. If used in this condition, excessive heating may occur. Therefore, when placed into service, all wrappings should be removed and the cord extended for its entire length.

RELATED PRODUCTS

See Cord Sets and Power-supply Cords Certified for Canada (ELBZ7).

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 21 (1990), ''Cord Sets and Power Supply Cords.''

UL MARK

The Marine Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Marine Listing Mark for these products includes the UL Mark for Canada symbol with the word ''MARINE'' above the UL symbol (as illustrated in the Introduction of this Directory), the word ''LISTED,'' a control number, and the product name ''Shore Power Cable Set.''

* *

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SHORE-POWER INLETS, MARINE CERTIFIED FOR CANADA (UBXR7)

GENERAL

The category covers shore-power inlets rated less than 300 V ac. They are intended for installation on boats to provide connection for shore-power-cable sets. These sets are used by boats which are moored to the dock. They are of the grounding type with a terminal provided for the grounding (green or green with yellow strip) conductor. The inlets are supplied with a rain-tight cover.

RELATED PRODUCTS

Shore-power inlets are also covered under Attachment Plugs, Fuseless Certified for Canada (AXUT7).

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/UL 498, ''Attachment Plugs and Receptacles.''

UL MARK

The Marine Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Marine Listing Mark for these products includes the UL Mark for Canada symbol with the word ''MARINE'' above the UL symbol (as illustrated in the Introduction of this Directory), the word ''LISTED,'' a control number, and the product name ''Shore Power Inlet.''

* *

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SIGNAL ALARM EQUIPMENT, MARINE CERTIFIED FOR CANADA (UBXW7)

USE AND INSTALLATION

This category covers signal alarm equipment, including combinations of equipment making up a system, intended for use aboard boats to visually and/or audibly indicate an operating condition or malfunction.

These devices are intended for installation and operation in accordance with the manufacturer's instructions and the applicable requirements of the Canadian Coast Guard's ''Ship Safety Electrical Standards'' (TP 127 E), and the applicable requirements of CSA-C22.2 No. 183.2 (1983), ''DC Electrical Installations on Boats,''or CSA-C22.2 No. 183.1 (1982), ''Alternating-Current (AC) Electrical Installations on Boats,'' as it applies to the product.

PRODUCT MARKINGS

Only those products and components which have been investigated for ignition protection and comply with the requirements are so marked.

ADDITIONAL INFORMATION

For additional information, see Marine Products Certified for Canada (AAMP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/NFPA 302, "Fire Protection Standard for Pleasure and Commercial Motor Craft."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Signal Alarm Equipment."

* *

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SIGNAL APPLIANCES CERTIFIED FOR CANADA (UCEV7)

AUDIBLE-SIGNAL APPLIANCES, GENERAL SIGNAL CERTIFIED FOR CANADA (UCST7)

GENERAL

This category covers electrically operated bells, buzzers, horns and similar signal-sounding appliances intended for general signaling only. These devices may differ from audible-signal appliances intended for fire-protective signaling service in construction, and are not required to be marked with an audibility rating.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Audible Signal Appliance for General Signaling (Nonfire-Alarm) Use" or "Audible Signal Appliance Subassembly for General Signaling (Nonfire-Alarm) Use."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 205 (1983), "Signal Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "General Signaling Equipment" or "General Signaling Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

G – General Signaling Equipment

* *

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SIGNAL SYSTEM UNITS CERTIFIED FOR CANADA (UDTZ7)

USE

This category covers units intended to be used in combinations with related certified equipment to form installed systems for general-utility signaling purposes.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of a specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations (AALZ).

Signal System Units Certified for Canada (UDTZ7)–*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 205 (1983), "Signal Equipment."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "General Signaling Equipment" or "General Signaling Subassembly."

Some of these products are also Listed under other Signaling categories. When applicable, the Signaling Mark is also included. The Signaling Mark consists of the Listing Mark elements detailed above, with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol. When applicable, the product name may include "and Hospital Signaling and Nurse Call," "and Emergency Signaling" or "and Fire Alarm," as appropriate (e.g., "General Signaling and Fire Alarm Equipment").

Some of these products are also Listed under Energy Management, Information Technology or Telephone categories. When applicable, the product name may include "and Enclosed Energy Management," "and Temperature-indicating," "and Temperature-regulating," "and Information Technology" or "and Telephone," as appropriate (e.g., "General Signaling and Telephone Equipment").

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

* *

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SPEAKERS CERTIFIED FOR CANADA (UEAY7)

USE AND INSTALLATION

This category covers speakers investigated for use in general-utility signaling applications with respect to risk of fire and electric shock.

Where a certified product is formed by the assembly of two or more parts and all parts are not provided as a single package, the specific parts are identified in the individual certifications, and each part bears a separate Certification Mark. Marking on each part references installation instructions that show assembly and installation of the parts to form a certified product.

All products covered under this category are intended for indoor use only, unless otherwise specifically identified as suitable for outdoor use by markings on the product and in the individual certifications.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Signaling Speaker," "Signaling Speaker Enclosure" or "Signaling Speaker Accessory."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 205, "Signal Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "General Signaling Equipment" or "General Signaling Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

G – General Signaling Equipment

Speakers Certified for Canada (UEAY7)−*Continued*

* *

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VISUAL-SIGNAL APPLIANCES CERTIFIED FOR CANADA (UEES7)

USE AND INSTALLATION

This category covers visual-signal appliances and accessories intended for use in general-signaling applications. These devices have been investigated with respect to risk of fire and shock.

Accessories, such as enclosures and back boxes, and the products with which they are compatible are identified in the individual certifications.

Where multiple parts are employed to form a complete unit, the specific parts are identified in the individual certifications. The marking on each part references installation instructions which show assembly and installation of the parts to form a certified product.

These products are intended for indoor use only unless otherwise specifically marked.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term ''Visual Signaling Appliance'' or ''Visual Signaling Appliance Accessory.''

RELATED PRODUCTS

Devices intended for use in fire alarm and/or emergency-protective signaling applications are covered under Visual-signal Appliances for Fire Protective Signaling Systems Certified for Canada (UVAV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S526 (1987), ''Visible Signal Devices for Fire Alarm Systems, Including Accessories.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''General Signaling Equipment'' or ''General Signaling Subassembly.''

The product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:

G – General Signaling Equipment

* *

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SIGNAL APPLIANCES, MISCELLANEOUS CERTIFIED FOR CANADA (UEHX7)

GENERAL

This category covers miscellaneous signaling appliance units that have been investigated only for hazard of fire and electric shock and are not associated with property protection and/or life safety. The general-purpose signaling nature of each product is categorized as Type NM (Nonmonitored).

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the phrase ''Type NM'' and a the specific use description as indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 205, ''Signal Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Signal Appliances, Miscellaneous Certified for Canada (UEHX7)−*Continued*

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''General Signaling Equipment'' or ''General Signaling Subassembly.''

Some of these products are also Listed under other Signaling categories. When applicable, the Signaling Mark is also included. The Signaling Mark consists of the Listing Mark elements detailed above, with the word ''SIGNALING'' above the UL symbol and the word ''LISTED'' below the UL symbol. When applicable, the product name may include ''and Hospital Signaling and Nurse Call,'' ''and Emergency Signaling'' or ''and Fire Alarm,'' as appropriate (e.g., ''General Signaling and Fire Alarm Equipment'').

Some of these products are also Listed under Security categories. When applicable, the Security Mark is also included. The Security Mark consists of the Listing Mark elements detailed above, with the word ''SECURITY'' above the UL symbol and the word ''LISTED'' below the UL symbol. When applicable, the product name may include ''and Security'' (e.g., ''General Signaling and Security Equipment'').

Some of these products are also Listed under Energy Management, Information Technology or Telephone categories. When applicable, the product name may include ''and Enclosed Energy Management,'' ''and Information Technology'' or ''and Telephone,'' as appropriate (e.g., ''General Signaling and Telephone Equipment'').

For products also bearing the Signaling Mark, the product name may be abbreviated as follows: The word ''Type:'' followed by the appropriate Type Code (as shown below), additionally followed by ''Subassembly,'' as applicable.

Type Codes:

S – Security Equipment
F – Fire Alarm Equipment
HN – Hospital Signaling and Nurse Call Equipment
G – General Signaling Equipment
E – Emergency Signaling Equipment
EM – Enclosed Energy Management Equipment
IT – Information Technology Equipment
T – Telephone Equipment

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SIGNAL APPLIANCES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UFXR7)

Equipment for use in hazardous locations investigated for fire-protective signaling service also appears under Signal and Fire Alarm Equipment and Services Certified for Canada (SYKJ7).

AUDIBLE-SIGNAL APPLIANCES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UGKZ7)

GENERAL

This category covers audible-signal appliances, such as bells, sirens and horns.

Audible-signal appliances certified for use in any of the groups under Class I hazardous locations have been investigated with respect to safety of operation in the presence of flammable and explosive mixtures of specific vapors and gases with air. Those for use in any of the groups under Class II hazardous locations have been investigated for dust-tightness and have been subjected to operation tests to establish safety of operation in the presence of the specific combustible dusts, and also to establish that they will function as intended with dust accumulated on external parts.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

Audible-signal Appliances for Use in Hazardous Locations Certified for Canada (UGKZ7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Audible Signal Appliance for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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EXTINGUISHING SYSTEM ATTACHMENTS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UGYX7)

GENERAL

This category covers devices having electrical signaling contacts that are designed for attachment to extinguishing system equipment so as to provide (1) alarm signals indicating discharge of extinguishing means, and (2) supervisory signals indicating abnormal conditions of extinguishing system equipment and restoration to normal.

The signal contacts of these attachments may be of the noncoded or coded type.

Devices classed as noncoded types have contacts that perform a switching function and are intended for connection to actuating circuits of a separate electrically operated transmitter or to the signaling line circuit of a separate electrical control unit by which their action is indicated.

Devices classed as coded types have contacts that perform a coded signaling impulse function resulting from the operation of a transmitting mechanism, which is a part of the attachment, and are intended for connection to the signaling line circuit of a separate electrical control unit by which their action is indicated.

ATTACHMENT TYPES

Attachments for automatic sprinkler systems are classed as follows:

Waterflow Alarm Signal Types

Alarm Dry-pipe Valve Attachment — Mechanically operated on lifting of alarm valve clapper or pressure operated by suitable connection to alarm or dry-pipe valve piping trim.

Waterflow Indicator — Paddle operated.

Special Attachment — Type not included by above class.

Supervisory Signal Types

Valve Position Signal Attachment — Operated by mechanical linkage to movable parts of valve.

Water Level Signal Attachment — Operated by tank float.

Pressure Signal Attachment — Operated by pressure change of air, steam or water.

Temperature Signal Attachment — Operated by water or air temperature change.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Extinguishing System Attachment for Use in Hazardous Locations'' or ''Water Flow Indicator for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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FIRE ALARM DEVICES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UHMV7)

USE AND INSTALLATION

This category covers coded and noncoded fire alarm boxes and fire and watch boxes for use with private fire alarm systems.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fire Alarm Box for Use in Hazardous Locations'' or ''Fire and Watch Box for Use in Hazardous Locations.''

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FLAME-AUTOMATIC FIRE DETECTORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UIAZ7)

USE AND INSTALLATION

This category covers fire detectors designed to detect flames, either in infrared or ultraviolet regions.

Each detector provides signaling contacts for connection to a signal-indicating appliance, electrically actuated transmitters, or a system control unit to form a fire alarm system as indicated by the installation wiring diagram supplied with the unit.

Each unit is intended to be installed in accordance with the manufacturer's control drawing, the Authority Having Jurisdiction, ANSI/NFPA 72, ''National Fire Alarm Code,'' or other NFPA standards that may apply, and CAN/ULC-S524 (1991), ''Installation of Fire Alarm Systems.''

Detector Location

The location of flame detectors should be based on an engineering survey of the conditions to be anticipated in service and the principle of operation. Detectors should be installed only after a thorough study has been made of the area or premises to be protected (whether in planning or construction stage) and of the life and property values involved. Prior to engineering, a layout of an installation and a copy of the manufacturer's technical bulletin should be obtained and reviewed to determine recommended detector locations. Consideration should be given to all features which could have a bearing on the location and sensitivity of the detectors, including such pertinent factors as coverage in partitioned sections, ceiling heights, and overlapping of areas of cone coverage to provide maximum protection. Test flames should be employed to check proper detector location.

Environmental Considerations

Where indicated in the individual certifications, detectors are intended for indoor and/or outdoor use. For indoor use, detectors should be located in areas where normal ceiling temperatures prevail. For outdoor use, detectors should be located such that an accumulation of snow, dirt, or road film is not likely to occur on the lens. Accordingly, detectors should be located under a building overhang or positioned on a downward angle to minimize the occurrence of such conditions.

Detectors should not be installed where unwanted false alarms are likely to occur, such as other sources of ultraviolet or infrared radiation.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standards used to investigate products in this category are ULC/ORD-C386 (1990), ''Flame Detectors,'' and CAN/ULC-S529 (1987), ''Smoke Detectors for Fire Alarm Systems.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

Flame-automatic Fire Detectors for Use in Hazardous Locations Certified for Canada (UIAZ7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Flame-automatic Fire Detector for Use in Hazardous Locations.''

* *

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GROUND INDICATORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UIOR7)

GENERAL

This category covers electronic-type ground indicators, the ratings of which are given on the individual product. These devices indicate by audible or visible signals whether an adequate connection to gasoline tank trucks, tank cars, or drums has been established for dissipation of static electricity.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Ground Indicator for Use in Hazardous Locations.''

* *

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HEAT-ACTUATED DEVICES FOR SPECIAL APPLICATION FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UIPV7)

USE AND INSTALLATION

This category covers fixed-temperature, heat-actuated-type detectors employing a special construction different from conventional thermostats and designed to detect an abnormal increase in air temperature.

These detectors are intended to be installed adjacent to the equipment being protected as identified in the installation instructions, and in accordance with the Authority Having Jurisdiction and CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' The temperature rating of the detector should be taken into consideration with regard to installation in the ambient temperature of the equipment to be protected under operating conditions to guard against false alarms. The detectors are intended to be connected to the initiating-device circuits of certified control units that provide audible-alarm signals or employed as part of an extinguishing system.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic ordinary locations standard used to investigate products in this category is CAN/ULC-S530 (1991), ''Heat Actuated Fire Detectors for Fire Alarm Systems.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

Heat-actuated Devices for Special Application for Use in Hazardous Locations Certified for Canada (UIPV7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Heat-actuated Device for Special Application for Use in Hazardous Locations.''

* *

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HEAT-AUTOMATIC FIRE DETECTORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UIRV7)

USE AND INSTALLATION

This category covers thermostat-type automatic fire detectors (known as thermostats), which are integral assemblies of heat-responsive elements and noncoded electrical contacts that function automatically under conditions of increase in air temperature. These thermostats consist of detection heads intended for mounting to compatible component bases having electrical functions, or self-contained units for mounting to standard electrical utility boxes.

Thermostats are of the fixed temperature (F), combination fixed temperature and rate-of-rise (C), or rate compensation (R) type. There are basically two types: (1) A spot-pattern-type thermostat is one in which the thermally sensitive element is a compact unit of small area; (2) a line-pattern-type thermostat is one in which the thermally sensitive element is continuous along a line.

The possible contact configurations of these thermostats are as follows: One-pole, normally open-circuit type (1PNO); one-pole, normally closed-circuit type (1PNC); two-pole open-circuit type (2PNO); two-pole, normally closed-circuit type (2PNC); two-pole, normally open-circuit and closed-circuit type (2PNO/NC). Thermostats with normally open contacts are suitable for use as initiating devices of a fire-protective signaling system. Thermostats with normally closed contacts are suitable for use as the heat-responsive portion of a releasing device system.

These thermostats have been investigated for indoor use only unless otherwise indicated in the individual certifications. Ordinarily, thermostats are intended for locations where normal ceiling temperatures prevail (below 38°C). Locations where temperatures at ceiling are likely to be unduly high (from sources of heat other than fire conditions, such as boiler rooms, dry kilns, etc.) demand special consideration and selection of thermostats operating normally at higher temperatures, and which are capable of withstanding high temperatures for long periods of time. Care should be exercised to select thermostats having the proper temperature rating to guard against false alarms from premature operation:

For ceiling temperatures not exceeding 38°C, install 71°C or equivalent (ordinary) rating thermostats

For ceiling temperatures exceeding 38°C, but not 66°C, install 100°C or equivalent (intermediate) rating thermostats

For ceiling temperatures exceeding 66°C, but not 107°C, install 141°C or equivalent (high) rating thermostats

For ceiling temperatures exceeding 107°C, but not 149°C, install 182°C or equivalent (extra high) rating thermostats

The response sensitivity of thermostats to standard test fires is indicated by the ''spacing'' rating. The spacing rating is the maximum distance between adjacent thermostats installed on a symmetrical layout with the maximum right-angle distance to any wall or partition one-half the distance between thermostats. The fire tests conducted on thermostats are based on only one set of conditions, typically a 5-m high smooth ceiling, no air movement, and no physical obstructions between the fire source and the thermostat. Under other conditions and forms of ceiling construction, reduced spacing may be required to obtain equivalent performance.

The placement and spacing of thermostatic devices should be based on consideration of the ceiling construction, ceiling height, room space area, space subdivisions, the normal room temperature, possible exposure of the devices to abnormal heat, such as may be produced by manufacturing processes or equipment, and to draft conditions likely to be encountered at the time of the fire.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

Heat-automatic Fire Detectors for Use in Hazardous Locations Certified for Canada (UIRV7)−*Continued*

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/ULC-S530 (1991), "Standard for Heat Actuated Fire Detectors for Fire Alarm Systems."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Fire Detection Heat Detector for Use in Hazardous Locations."

* *

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SIGNAL SYSTEM UNITS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UJFT7)

GENERAL

This category covers units intended to be used in combinations with related certified equipment to form installed systems for general-utility-signaling purposes.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Signal System Unit for Use in Hazardous Locations" or "Signal System Unit (Associated Apparatus)," or other appropriate product name as shown in the individual Listings.

* *

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SIGNAL APPLIANCES, MISCELLANEOUS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UJPX7)

USE

This category covers miscellaneous signal appliances and equipment intended for use in signaling systems.

RELATED PRODUCTS

Equipment that has been investigated for use only in the classified locations of automotive and marine service stations appears under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Signal Appliances, Miscellaneous for Use in Hazardous Locations Certified for Canada (UJPX7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Magnetic-operated Contact for Use in Hazardous Locations," "Signal Relay for Use in Hazardous Locations" or "Monitor Unit (Associated Apparatus)," or other appropriate product name as shown in the individual Listings.

* *

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SIGNALING EQUIPMENT ACCESSORIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UJQO7)

USE

This category covers retrofit devices in kits consisting of parts and/or subassemblies, installation/instruction manuals, and retaining means, intended for field installation in UL-certified audible-signaling appliances for use in hazardous locations. These products have been investigated to determine that when used in accordance with the manufacturer's instructions they do not adversely affect the operation of the complete unit.

PRODUCT MARKINGS

Retrofit devices are marked with electrical and environmental ratings as specified in the individual Reports.

ADDITIONAL INFORMATION

For additional information, see Signal Appliances for Use in Hazardous Locations Certified for Canada (UFXR7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

AUDIBLE SIGNAL RETROFIT KIT
FOR USE WITH LISTED [model number(s)] ONLY
Control No.

* *

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VISUAL-SIGNAL APPLIANCES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UJTK7)

GENERAL

This category covers visual-signal appliances, such as rotating beacons and strobe lights, intended for use in general-signal applications, and subassemblies of visual-signal appliances intended for final assembly into visual-signal appliances.

Subassemblies, such as mounting bodies, globes and guards, and the products with which they are compatible are identified in the individual certifications.

Where multiple parts are employed to form a complete unit, the specific parts are identified in the individual certifications. Marking on each part references installation instructions which show assembly and installation of the parts to form a certified product.

Visual-signal appliances certified for use in any of the groups under Class I hazardous locations have been tested with respect to safety of operation in the presence of flammable and explosive mixtures of specific vapors and gases with air. Those for use in any of the groups under Class II hazardous locations have been tested for dust-tightness and have been subjected to operation tests to establish safety of operation in the presence of the specific combustible dusts and also to establish that they will function as intended with dust accumulated on external parts.

Visual-signal Appliances for Use in Hazardous Locations Certified for Canada (UJTK7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Visual-signal Appliance for Use in Hazardous Locations'' or ''Visual-signal Appliance Subassembly for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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SIGNAL APPLIANCES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UXUQ7)

AUDIBLE-SIGNAL APPLIANCES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UXVF7)

GENERAL

This category covers audible-signal devices, such as bells, sirens and horns.

Audible-signal devices certified for use in any of the zones under Class I hazardous locations have been tested with respect to safety of operation in the presence of flammable and explosive mixtures of specific vapors and gases with air.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Audible Signal Appliance for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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VISUAL-SIGNAL APPLIANCES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UXVU7)

GENERAL

This category covers visual-signal devices, such as rotating beacons and strobe lights.

Visual-signal Appliances for Use in Zone Classified Hazardous Locations Certified for Canada (UXVU7)−*Continued*

Visual-signal devices Listed for use in any of the zones under Class I hazardous locations have been tested with respect to safety of operation in the presence of flammable and explosive mixtures of specific vapors and gases with air.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7)

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Visual Signal Appliance for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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SIGNALING APPLIANCES AND EQUIPMENT FOR THE HEARING IMPAIRED FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UXWC7)

GENERAL

This category covers visual-signaling appliances, vibrators or other sensory apparatus and associated equipment investigated for fire-protective-signaling services to alert hearing-impaired persons, and subassemblies of signaling appliances intended for final assembly into signaling appliances.

Subassemblies, such as mounting bodies, globes and guards, and the products with which they are compatible are identified in the individual certifications.

Where multiple parts are employed to form a complete unit, the specific parts are identified in the individual certifications. Marking on each part references installation instructions that show assembly and installation of the parts to form a certified product.

These signaling appliances are intended to be used in conjunction with certified compatible fire-alarm-control units, alarm-initiating devices and the like. The interconnection, use and installation requirements of the products are intended to be in accordance with CAN/ULC-S540 (1986), ''Installation of Residential Fire Warning Systems,'' or CAN/ULC-S524 (2001), ''Installation of Fire Alarm Systems.''

The signaling appliances in this category have been investigated as to their ability to alert most hearing-impaired persons. However, since the ability of signal recognition varies among individuals, the effectiveness of alerting a person can only be ensured by actual testing of that person with the installed signaling appliance.

This category does not cover signaling devices for the hearing impaired that are an integral part of other alarm-initiating or alarm-indicating devices. When such a combination exists, suitability as a signaling appliance for the hearing impaired will be noted in the individual certifications of the primary product.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/ULC-S526 (2002), ''Visible Signal Devices for Fire Alarm Systems.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

SIGNALING APPLIANCES AND EQUIPMENT FOR THE HEARING IMPAIRED FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (UXWC7)

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The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Signaling Appliance for the Hearing Impaired for Use in Hazardous Locations,'' ''Signaling Appliance Accessory for the Hearing Impaired for Use in Hazardous Locations'' or ''Signaling Appliance Subassembly for the Hearing Impaired for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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SIGNS CERTIFIED FOR CANADA (UXYT7)

USE AND INSTALLATION

This category covers electric portable and stationary signs and displays employing incandescent lamps, LEDs (light emitting diodes), electroluminescent panels, neon tubing, fluorescent lamps, high intensity discharge lamps or combinations thereof for installation in accordance with the ''Canadian Electrical Code, Part I.''

Signs or sections of a sign forming a complete enclosure intended for permanent connection to a source of supply are provided with permanent means for attachment to a building, to a support or to a hanging rig. The mounting hardware, poles and other structural components of a sign have not been evaluated with respect to local variable conditions such as wind and snow loading or soil conditions.

Electric signs, of such size that shipment in one carton or fully assembled is impractical, may be divided into sections. Each major subassembly bears an ''Electric Sign Section'' Certification Mark. Sign faces, trim and mounting hardware are not considered major subassemblies. Each sign will have suitable installation instructions describing or illustrating the proper assembly, mounting and connection of the numbered sign sections. The acceptability of the assembled sections in the field rests with the Authority Having Jurisdiction.

PRODUCT MARKINGS

Signs intended for permanent installation and which have been investigated for indoor use only are so marked. Cord-connected signs investigated for outdoor use are marked ''Outdoor.'' Signs for outline lighting are marked ''Outdoor Sign for Outline Lighting.''

REBUILT PRODUCTS

This category also covers signs that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt signs are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt signs are subject to the same requirements as new signs.

RELATED PRODUCTS

Accessories intended for use in certified signs are covered under Sign Accessories Certified for Canada (UYMR7).

Retrofit conversions intended to be field installed in certified electric signs are covered under Sign Conversions, Retrofit Certified for Canada (UYWU7).

Changing message center signs may contain integral controllers or may be intended for use with externally connected controllers. Externally connected controllers are covered under Sign Controllers, Message Centers Certified for Canada (UYTQ7).

This category does not cover billboard illumination, exit lights, skeletal neon tubing for show windows, or illuminated clocks rated 600 V or less.

Field-assembled neon systems used in display windows, outline lighting, or skeletal neon signs are covered under Skeletal Neon Sign and Outline Lighting Systems, Field Assembled Certified for Canada (UZBL7).

Field-assembled cold cathode electric discharge lighting systems that provide general illumination are covered under Electric Discharge Lighting Systems, Cold Cathode Certified for Canada (IFAY7).

Field-installed neon outline lighting systems that outline or call attention to architectural details of a room or building are covered under Field-installed Neon Outline Lighting Systems Certified for Canada (UYAM7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207 (1989), ''Portable and Stationary Electric Signs and Displays.''

Electric signs that comply with the requirements in CAN/CSA-C22.2 No. 12, ''Portable Luminaires,'' may also be certified as Portable Luminaires Certified for Canada (QOWZ7).

SIGNS CERTIFIED FOR CANADA (UXYT7)

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names, as appropriate: ''Indoor Electric Sign,'' ''Electric Sign'' or ''Electric Sign Section.''

For rebuilt signs the word ''Rebuilt'' precedes the product name.

* *

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FIELD-INSTALLED NEON OUTLINE LIGHTING SYSTEMS CERTIFIED FOR CANADA (UYAM7)

GENERAL

This category covers neon outline lighting systems that incorporate neon tubing with ferrule-type end caps which are electrically connected to the output of a transformer, power supply or ballast by ferrule-type lampholders. Each transformer or power supply in the system has a maximum output current rating of 300 mA. These systems are for installation in accordance with Section 34 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These lighting systems outline or call attention to architectural details of a room or building.

Neon outline lighting systems are provided as a system of parts that are field installed. These systems are installed using tools and techniques available only to an electrician. The systems are provided with installation instructions that define the scope of the system and method for installation. It is intended that the system installation instructions be retained with the installation to which they apply.

The certification of an outline lighting system does not constitute approval of the design, which is the responsibility of the manufacturer and the Authority Having Jurisdiction, nor approval of the installation. The final acceptance of the field-installed neon outline lighting system is the responsibility of the Authority Having Jurisdiction.

These systems are intended for permanent installation indoors unless marked ''Suitable for Outdoor Locations.''

RELATED PRODUCTS

This category does not cover neon tubing for display windows or signs; see Signs Certified for Canada (UXYT7).

This category does not cover field-assembled neon systems in display windows, outline lighting, or skeletal neon signs; see Skeletal Neon Sign and Outline Lighting Systems, Field Assembled Certified for Canada (UZBL7)

This category does not cover cold cathode electric-discharge lighting systems for general illumination; see Electric-discharge Lighting Systems, Cold Cathode Certified for Canada (IFAY7).

Outline lighting of the incandescent, HID or fluorescent type fabricated in factory-built sections is covered under Signs Certified for Canada (UXYT7).

Lighting systems operating at 1000 V or less are covered under Fluorescent Surface-mounted Luminaires Certified for Canada (IEUZ7), High-intensity-discharge Surface-mounted Luminaires Certified for Canada (IEXT7) and Incandescent Surface-mounted Luminaires Certified for Canada (IEZR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207 (1989), ''Portable and Stationary Signs and Displays.''

UL MARK

The Listing Mark of UL on each transformer and transformer enclosure, and the containers in which the remaining neon outline lighting system parts are packaged, or on the remaining neon outline lighting system parts themselves, referencing a specific field-installed neon outline system number is the only method provided by UL to identify neon outline lighting systems manufactured under its Listing and Follow-Up Service. The Listing Mark for these systems includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Field Installed Neon Outline Lighting System Part,'' and the statement ''The Listing of this neon outline lighting system is contingent upon installation according to the specifications of [Listee's Name], System No. ____ and the Canadian Electrical Code.''

Field-installed Neon Outline Lighting Systems Certified for Canada (UYAM7)−*Continued*

* *

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SIGNS, CHANGING MESSAGE CERTIFIED FOR CANADA (UYFS7)

GENERAL

This category covers illuminated and nonilluminated changing-message signs intended to be installed and connected to an electrical supply source in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Illuminated changing-message signs include incandescent, fluorescent, HID (high intensity discharge), electric discharge tubing (including neon) LED (light emitting diode), and other sources of illumination.

Nonilluminated changing-message signs include scrolling, flipper, LCD (liquid crystal display), and similar types that are generally motor operated or electronically controlled.

Sign Section — The changing-message signs may be divided into sections. Each section of the sign bears a ''Changing Message Sign Section'' Certification Mark that states in combination with the Certification Mark ''Section ____ of ____.'' The first blank space identifies the number of the section, and the second blank space identifies the total number of sections required to constitute a complete changing-message sign. Suitable installation instructions describing or illustrating the proper assembly, mounting, and connection of the numbered sign sections are provided.

SIGN INSTALLATION MARKINGS

Indoor/Outdoor Use — Permanently connected changing-message signs are investigated and intended for use outdoors unless marked ''For Indoor Use Only.'' Cord-connected changing-message signs are investigated and intended for use indoors unless marked ''Portable Outdoor Changing Message Sign.''

Trailer Mounted — Changing-message signs intended to be trailer mounted are marked ''Trailer On Which Sign May Be Mounted Has Not Been Investigated.''

Orientation Marking — A changing-message sign intended for outdoor use that is not provided with construction features to ensure proper orientation is marked to indicate the proper mounting position.

Wall Mounted — A changing-message sign for outdoor use, wall mounting and provided with drain holes along the bottom edge of the back of the sign, and marked ''Maintain 1/2 Inch Clearance Between All Drain Openings And The Mounting Surface'' is intended to be installed so that the drain holes are not covered by the building surface.

REBUILT PRODUCTS

This category also covers rebuilt changing-message signs which have been reconditioned or rebuilt. Such changing-message signs have been factory reconditioned to the extent necessary by disassembly and reassembly using new or reconditioned component parts. Reconditioned or rebuilt changing-message signs are subject to the same requirements as new changing-message signs.

RELATED PRODUCTS

Components and parts intended for use on or with changing-message signs are covered under Sign Accessories Certified for Canada (UYMR7).

Changing-message signs may also be covered under Signs Certified for Canada (UXYT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207 (1989), ''Portable and Stationary Electric Signs and Displays.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products include the UL Mark for Canada Symbol (as illustrated in the introduction of this directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Indoor Changing Message Sign,'' ''Changing Message Sign'' or ''Changing Message Sign Section.''

For rebuilt products, the word ''Rebuilt'' precedes the product name.

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SIGN ACCESSORIES CERTIFIED FOR CANADA (UYMR7)

USE

This category covers sign components such as combinations of frame plastic panels with metal or plastic characters; sign-rotating equipment and sign-lift mechanisms for use in electric signs where weather protection and electrical enclosure are provided by the sign; ballast lead covers or enclosures intended to provide weather and mechanical protection to leads of outdoor ballasts; fluorescent U-tube and lampholder assemblies consisting of lampholders in sheet-metal brackets with spring and loaded rod and hook assemblies with or without ballast; insulating caps for use on electrode receptacles to provide electrical insulation; low-voltage power supplies consisting of assemblies of Class 2 transformers, an enclosure and a power-supply cord; and kickback bases intended for indoor use and provided with a receptacle for connection of a related display and provided with a power-supply cord.

RELATED PRODUCTS

Lampholders and electrode receptacles are covered under Lampholders, Electric Discharge, More Than 1000 Volts Certified for Canada (OJOV7).

ADDITIONAL INFORMATION

For additional information, see Signs Certified for Canada (UXYT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207 (1989), ''Portable and Stationary Electric Signs and Displays.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Sign Accessory.''

* *

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SIGN CONTROLLERS, MESSAGE CENTERS CERTIFIED FOR CANADA (UYTQ7)

GENERAL

This category covers control panels or units for changing-message signs.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207 (1989), ''Portable and Stationary Electric Signs and Displays.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Sign Controller,'' or other appropriate product name.

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SIGN CONVERSIONS, RETROFIT CERTIFIED FOR CANADA (UYWU7)

USE AND INSTALLATION

This category covers retrofit sign conversions consisting of subassemblies or kits intended for field installation in certified signs. There are several types of sign conversions as specified below.

Scrolling units (motor-operated message assemblies), devices to change the type of illumination (such as from incandescent to fluorescent), or combinations thereof consist of subassemblies intended for field installation in specific certified permanently connected electric signs. The conversion identifies the catalog number (or other description) and company name of the sign in which it is intended to be used.

Sign Conversions, Retrofit Certified for Canada (UYWU7)−*Continued*

Light-emitting-diode (LED) kits consist of the power source, the LEDs and the LED mounting means necessary to change the type of illumination originally contained in the sign to LED illumination. The kit installation instructions specify the type of sign in which the kit is intended to be installed.

These conversions have been investigated to determine that, when used in accordance with the manufacturer's instructions provided with the retrofit device, they do not adversely affect the operation of the complete electric sign.

ADDITIONAL INFORMATION

For additional information, see Signs Certified for Canada (UXYT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207, ''Portable and Stationary Electric Signs and Displays.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

RETROFIT SIGN CONVERSION
FOR USE ONLY WITH SIGN
MODEL ___ MANUFACTURED BY ___
Control No.
or

RETROFIT SIGN CONVERSION LED KIT
FOR USE ONLY IN ACCORDANCE WITH KIT INSTRUCTIONS
Control No.

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SIGN FLASHERS CERTIFIED FOR CANADA (UYZZ7)

USE AND INSTALLATION

This category covers flashing devices intended to control incandescent lamps or gas-tube-sign transformers.

The installation of open-type flashing devices in electric signs is intended to be in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' as follows: (a) within a standard cutout box or cabinet, or (b) within an enclosed compartment, accessible and weatherproof, of metal at least as thick as that of the sign itself and located in or on the body or structure of the sign.

Flashing devices of the thermostatic type are intended to control incandescent lamps and are for indoor use only.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207, ''Portable and Stationary Electric Signs and Displays.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED'', a control number and one of the following product names as appropriate: ''Sign Flasher,'' ''Blinker,'' ''Winker,'' ''Flasher,'' or other appropriate product name.

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SKELETAL NEON SIGN AND OUTLINE LIGHTING SYSTEMS, FIELD ASSEMBLED CERTIFIED FOR CANADA (UZBL7)

GENERAL

The presence of the Listing Mark (''Field Assembled Skeletal Neon Sign System'' or ''Field Assembled Skeletal Neon Outline Lighting System'') is evidence that the installation of the skeletal neon sign or outline lighting system (1) has been assembled and installed by an installer who is authorized by UL to apply UL Listing Marks described below and who subscribes to UL Follow-Up Service; (2) employs materials and components certified for Canada and (3) is subject to a field inspection program covering proper installation of the system.

These systems are field assembled for permanent installation in accordance with Section 34 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These systems are intended for outdoor use unless marked for indoor use.

The Listing of a system does not constitute approval of the completed assembly and installation which is the responsibility of the installer and the Authority Having Jurisdiction.

RELATED PRODUCTS

Field-assembled cold cathode electric-discharge lighting systems that provide general illumination are covered under Electric-discharge Lighting Systems, Cold Cathode, Certified for Canada (IFAY7).

Field-installed neon outline lighting systems that outline or call attention to architectural details of a room or building are covered under Field-installed Neon Outline Lighting Systems Certified for Canada (UYAM7).

Factory-assembled neon signs and outline lighting or sectional signs that require some field assembly are covered under Signs Certified for Canada (UXYT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 207, ''Portable and Stationary Electric Signs and Displays.''

UL MARK

The Listing Mark on the transformer or power-supply enclosure is the only method provided by UL to identify that a field-assembled skeletal neon sign or outline lighting system is covered under its Listing and Follow-Up Service. The Listing Mark for these systems includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product identity ''Field Assembled Skeletal Neon Sign System'' or ''Field Assembled Skeletal Neon Outline Lighting System,'' the installing company name or logo, date of installation, and location.

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SNOW MOVERS CERTIFIED FOR CANADA (UZNX7)

USE

This category covers battery-powered snow movers and motor-operated portable snow movers intended for outdoor use on nominal system voltages of 250 V or less, designed to be used in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

SPECIAL CONSIDERATIONS

These products have been investigated from the standpoint of risk of personal injury, electric shock and fire.

Some products in this category have cutting or moving parts, presenting certain inherent hazards related to risk of injury that cannot be wholly eliminated by practical design features. The products are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of injury where consideration has been given to the required utility of the product. Such risks have been reduced to an acceptable degree in the certified equipment.

Attachments that perform functions other than intended by the basic design have not been investigated unless specifically mentioned in the individual certifications and covered in the installation and use instructions.

Except for snow movers marked ''Double Insulated,'' all snow movers are provided with means for grounding. Double-insulated appliances require normal care in handling.

FACTORS NOT INVESTIGATED

Any potential health effects that may be associated with the use of snow movers, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 147 (1990), ''Motor-Operated Gardening Appliances.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Snow Mover.''

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SOLAR ENERGY SYSTEMS EQUIPMENT CERTIFIED FOR CANADA (UZST7)

The products covered in this category are intended for use in systems involving direct utilization of solar energy. The type of product and limitations of use, if any, are indicated in the individual Listings and/or by the marking on the product. Unless outdoor use is evident by the type of product, or unless marked ''outdoor use'' or ''rain tight,'' products Listed in this category are for indoor use only.

Conventional products which may be used in solar systems but which are not specifically designed for such applications are not covered under this category.

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CONTROLLERS, ELECTRICAL, SOLAR CERTIFIED FOR CANADA (UZVY7)

GENERAL

This category covers electrical controllers intended for use as components of solar energy systems. They are responsive to change in temperature or differential temperature and are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

RELATED PRODUCTS

Electrical temperature controllers covered under Temperature-indicating and Regulating Equipment, Electrical Certified for Canada (XATJ7) may also be suitable for use in solar systems but are not specifically investigated for such use.

ADDITIONAL INFORMATION

For additional information, see Solar Energy Systems Equipment Certified for Canada (UZST7) and Heating, Cooling, Ventilating and Cooking Equipment (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-F378 (1987), ''Solar Collectors.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Solar Electrical Controller.''

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SOLENOIDS FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VAMH7)

USE

This category covers solenoids for installation on valves. The solenoids are incomplete devices inasmuch as the plungers or pistons are intended to actuate an external valve or other equipment. This category covers the solenoid only and not the valve or other equipment to which the solenoids are mounted.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 139, ''Electrically Operated Valves.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Solenoid for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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SOLENOIDS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VAPT7)

USE

This category covers solenoids intended for connection to threaded rigid conduit. These solenoids may include the plungers or pistons intended to actuate an external valve or other equipment. This category covers the solenoid only and not the valve or other equipment to which the solenoids are mounted.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 139, ''Electrically Operated Valves.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Solenoid for Use in Hazardous Locations.''

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SOUND-METERING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VBYC7)

GENERAL

This category covers equipment that measures and stores the ambient noise levels in industrial areas.

RELATED PRODUCTS

Equipment that has been investigated for use only in the classified locations of automotive and marine service stations appears under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Noise Dosimeter'' or ''Sound Level Meter,'' or other appropriate product name as shown in the individual Listings.

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SOUND-METERING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VBYX7)

USE AND INSTALLATION

This category covers sound-metering equipment that measures and stores the ambient noise levels in industrial areas.

Certain products in this category are associated apparatus and are intended for installation in unclassified locations. They are provided with intrinsically safe circuits as indicated on the product, for extension into a hazardous (classified) location.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are identified in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Noise Dosimeter for Use in Hazardous Locations,'' ''Sound Level Meter for Use in Hazardous Locations'' or ''Sound Level Meter (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

* *

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SOUND-RECORDING AND -REPRODUCING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VCSV7)

USE

This category covers speakers and similar equipment intended for use in sound-recording and -reproducing systems.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Sound-recording Equipment for Use in Hazardous Locations'' or ''Sound-reproducing Equipment for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

* *

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SPRINKLER SYSTEM AND WATER SPRAY SYSTEM DEVICES CERTIFIED FOR CANADA (VDGT7)

The following Standards of the National Fire Protection Association relate to the devices and equipment covered under this category: NFPA 13, ''Standard for the Installation of Sprinkler Systems,'' NFPA 15, ''Standard for Water Spray Fixed Systems for Fire Protection'' and NFPA 16, ''Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems.''

Authorities Having Jurisdiction should be consulted regarding use of these devices and equipment before installation.

AIR COMPRESSORS, SPECIAL TYPE CERTIFIED FOR CANADA (VDUR7)

USE

This category covers air compressors that are special units intended for use with sprinkler equipment of special designs.

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Air Compressor, Special Type.''

* *

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DRAIN FITTINGS, SPECIAL TYPE CERTIFIED FOR CANADA (VEHZ7)

USE AND INSTALLATION

This category covers special-type drain fittings that may consist of a (1) sight glass; (2) ball-, angle-, plug- or globe-type shutoff valve in combination with either a sight glass or simulated sprinklers orifice; or (3) combination of a sight glass, drain valve and simulated sprinkler orifice as indicated in the individual certifications. These fittings may also be equipped with a relief valve intended for use in gridded wet-pipe sprinkler systems as indicated in the individual certifications.

These special-type fittings are intended for use in the drain piping or as a system test connection in sprinkler systems in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," or ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes." These devices are rated for a maximum pressure of 1210 kPa unless otherwise indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Sprinkler Systems and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C258 (2003), "Shutoff Valves for Trim and Drain Purposes for Fire Protection Service".

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Drain Fitting, Special Type."

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FLEXIBLE SPRINKLER HOSE WITH FITTINGS CERTIFIED FOR CANADA (VENF7)

USE AND INSTALLATION

This category covers devices flexible sprinkler hose with fittings intended for use in sprinkler systems between the branch line and sprinkler when installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," or ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes," and the manufacturer's installation instructions.

As indicated in the individual certifications, these products may have high flexibility or limited flexibility. Products having high flexibility are intended for use in applications where frequent movement between the two ends of the hose is expected after installation. Products having limited flexibility are intended for use in applications where little or no movement between the two ends is expected after installation.

A flexible sprinkler hose assembly consists of a flexible hose, inlet fitting for connection to the branch line, and an outlet fitting for connection to the sprinkler. These flexible hose with fittings are intended to be installed using the anchoring devices referenced in the manufacturer's installation instructions. Flexible sprinkler hose length is limited to a maximum of 1828.8 mm (6 ft) to minimize the potential for hose kinking and undesirable movement of a sprinkler after installation. The manufacturer's installation instructions include additional information relative to proper use, such as anchoring device installation, allowable number of bends, minimum bend radii, pressure loss, sprinklers to be attached to the hose, flexibility and maximum temperature rating. Bending of the flexible hose to a radius less than the minimum value referenced in the manufacturer's installation instructions may cause structural damage that could adversely impact the pressure retention and hydraulic performance.

These products are intended for use in hydraulically designed sprinkler systems. The hydraulic pressure loss associated with these devices needs to be included in the hydraulic design calculations. Pressure loss is published in equivalent length, in meters of 1-in. diameter Schedule 40 steel pipe (where the Hazen-Williams coefficient of friction is C equals 120).

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

Flexible Sprinkler Hose with Fittings Certified for Canada (VENF7)−*Continued*

Unless certified for such use, the impact of a flexible sprinkler hose assembly on a ceiling-grid system used to provide fire-resistance performance in a floor-ceiling or roof-ceiling assembly has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1474 (2003), "Adjustable Drop Nipples for Sprinkler Systems."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flexible Sprinkler Hose Fitting."

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GAUGES, PRESSURE CERTIFIED FOR CANADA (VEVX7)

USE AND INSTALLATION

This category covers nonrecording, indicating pressure gauges of the elastic-element type. These gauges are intended for installation and use in accordance with applicable NFPA standards, such as ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 14, "Installation of Standpipe and Hose Systems," and ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C393, "Indicating Pressure Gauges for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pressure Gauge for Fire Protection Service."

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GUARDS FOR SPRINKLERS CERTIFIED FOR CANADA (VFJV7)

USE

This category covers guards intended for use with pendent, upright, sidewall, or intermediate-level sprinklers when installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," or ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes," and the manufacturer's installation instructions.

The guards are intended for installation on sprinklers that may be subject to mechanical damage. The use of the guards is intended to be limited to the specific sprinklers indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199D (2003), "Guards for Sprinklers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up

Guards for Sprinklers Certified for Canada (VFJV7)−*Continued*

Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Guard for Sprinkler.''

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HANGERS, PIPE CERTIFIED FOR CANADA (VFXT7)

USE AND INSTALLATION

This category covers pipe-hanger equipment intended for supporting piping in sprinkler systems, water-spray systems and other piping systems used for fire-protection service.

A pipe hanger consists of a unit assembly used singly or in combination with other assemblies for supporting or hanging pipe. This may include equipment which (1) partially or totally encompasses the pipe, (2) attaches to an element of the building, and (3) is interconnected by threaded steel rod with, or without couplings.

Pipe-hanger equipment that partially or totally encompasses the pipe includes solid, split, or swivel rings, clevis hangers, band hangers or the like as described in the individual certifications.

Pipe-hanger equipment that attaches to the elements of the building includes beam, purlin and C-clamps, side-beam attachments, brackets and eyelets, concrete inserts, ceiling flanges, post-installed anchors, or the like as described in the individual certifications.

For pipe hangers that use threaded steel rod, the rod sizes are specified in the individual certifications.

Requirements for the installation and use of these hangers are included in ANSI/NFPA 13, ''Installation of Sprinkler Systems.''

RELATED PRODUCTS

See Fasteners for Pipe Hangers, Powder Driven Certified for Canada (VGLR7) and Sway Brace Devices, Rigid Type for Sprinkler Systems Certified for Canada (VGMY7).

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C203, ''Pipe Hanger Equipment for Fire Protection Service.''

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Pipe Hanger.''

* *

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Fasteners for Pipe Hangers, Powder Driven Certified for Canada (VGLR7)

USE AND INSTALLATION

This category covers fasteners driven into concrete or steel that are intended for the attachment of pipe hangers. This category also covers threaded couplings intended for use with these fasteners. The fasteners and corresponding threaded couplings are tested to determine their suitability for supporting the loads associated with the pipe sizes indicated in the individual certifications. Unless otherwise stated, these fasteners are intended for vertical installation to support the pipe sizes indicated.

Application of these fasteners requires use of the Listee's powder-operated tools, releasing an explosive charge to drive the shank of the fasteners into the receiving material.

Authorities Having Jurisdiction should be consulted regarding use. As a preliminary step to installation of this product in concrete, test of the acceptability of the concrete for the purpose should be made by driving a number of test pins into the concrete and then measuring the load to extract them as outlined in ANSI/NFPA 13, ''Installation of Sprinkler Systems.'' The minimum thickness of steel of building members into which

Fasteners for Pipe Hangers, Powder Driven Certified for Canada (VGLR7)−*Continued*

studs may be driven for support of sprinkler piping should be based on the ability of the steel to support the load without deformation. From corrosion and holding-power standpoints, a minimum steel thickness of 4.7 mm is recommended.

ADDITIONAL INFORMATION

For additional information, see Hangers, Pipe Certified for Canada (VFXT7), Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C203, ''Pipe Hanger Equipment for Fire Protection Service.''

UL MARK

The Listing Mark of UL on the product, or on the smallest unit container in which the product is packaged with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fastener for Pipe Hanger.''

* *

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Sway-brace Devices, Rigid Type for Sprinkler Systems Certified for Canada (VGMY7)

USE AND INSTALLATION

This category covers rigid-type sway-brace devices intended to be installed as part of a sprinkler system to resist horizontal lateral or longitudinal movement of sprinkler piping. These devices are intended to resist forces in tension and compression. Requirements for the installation and use of sway-brace assemblies are described in ANSI/NFPA 13, ''Installation of Sprinkler Systems,'' and the manufacturer's installation and design manual.

These devices are intended to be used in addition to the required pipe hangers specified in ANSI/NFPA 13, and include the following:

1. Sway-brace fittings used to attach the sprinkler system piping to a sway brace.
2. Sway-brace attachment fittings used to attach the sway brace to a building structure.

This category does not cover the sway brace, which is a rigid structural member intended to be attached to the building structure with a structure attachment fitting at one end, and attached to the sprinkler system piping with a sway-brace fitting at the other end. The sway braces intended to be used with these devices are specified in the manufacturer's installation instructions.

The maximum rated load indicated in the individual certifications is referenced for those situations when the use of other horizontal loads is required or permitted by the Authority Having Jurisdiction. These maximum rated loads should be reduced as specified in ANSI/NFPA 13 for loads that are less than 90 degrees from the vertical. The maximum sway-brace spacing specified in ANSI/NFPA 13 should not be exceeded. A sway-brace assembly is not intended to be installed to sustain a load greater than the load rating for any individual element of the assembly.

Authorities Having Jurisdiction should be consulted before installation of these devices.

ADDITIONAL INFORMATION

For additional information, see Hangers, Pipe Certified for Canada (VFXT7), Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C203A (1998), ''Sway Brace Devices for Sprinkler System Piping.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Sway Brace Fitting'' (or ''SB Fitting'') or ''Structure Attachment Fitting'' (or ''SA Fitting'').

* *

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Sway-brace Devices, Rigid Type for Sprinkler Systems Certified for Canada (VGMY7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

NOZZLES, SPRAY TYPE, FIXED CERTIFIED FOR CANADA (VGYZ7)

USE AND INSTALLATION

This category covers spray nozzles that discharge water in a specific spray pattern as defined by the manufacturer. Spray nozzles consist of the automatic or nonautomatic (open) type, and are intended for installation in fixed piping systems as specified in ANSI/NFPA 13, ''Installation of Sprinkler Systems,'' and ANSI/NFPA 15, ''Water Spray Fixed Systems for Fire Protection.''

Automatic Type

Automatic-type spray nozzles are intended to operate when the temperature of the heat-responsive element exceeds its thermal-response temperature.

Standard temperature ratings of automatic spray nozzles, the maximum ambient temperatures, and frame and glass heat-responsive element (glass bulb) color coding are as follows:

Temperature Class	Temperature Rating, °C	Frame Color Code+	Glass Bulb Color	Max Temp at Point of Installation, °C
Ordinary	57 to 77	Uncolored++	Orange or Red	38
Intermediate	79 to 107	White	Yellow or Green	66
High	121 to 149	Blue	Black	107
Extra High	163 to 191	Red	Purple	149
Very Extra High	207 to 246	Green	Black	191
Ultra High	260 to 302	Orange	Black	246

+ Corrosion-resistant spray nozzles are marked with either a dot on top of the deflector, color of the coating, or colored frame arms

++ The 57°C spray nozzles may be color coded black

Nonautomatic (Open) Type

Nonautomatic (open) type nozzles do not incorporate heat-responsive elements or operating parts and are intended to be installed in water-spray systems when water flow is controlled by devices other than the spray nozzle.

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C2351 (2003), ''Spray Nozzles for Fire-Protection Service.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Automatic Fixed Nozzle'' or ''Nonautomatic Fixed Nozzle.''

* *

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NOZZLES, FIXED SPRAY, FOAM CERTIFIED FOR CANADA (VIHU7)

GENERAL

This category covers nozzles that produce and distribute foam when foam solution is discharged through them, and will distribute over the same area in the absence of foam concentrate. Foam solution-nozzle combinations will produce foam blankets which provide burnback resistance and protection from reflash under standard test conditions.

These nozzles are of the nonautomatic (open) type and do not incorporate heat-responsive elements or operating parts and are intended to be installed in water spray systems when water flow is controlled by devices other than the spray nozzle.

Fixed foam-spray nozzles are intended to be installed in accordance with the applicable requirements of ANSI/NFPA 16, ''Installation of Foam-Water Sprinkler and Foam-Water Spray Systems.''

Nozzles, Fixed Spray, Foam Certified for Canada (VIHU7)−*Continued*

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC-S564 (2006), ''Standard for Categories 1 and 2 Foam Liquid Concentrates,'' and ULC/ORD-C199 (2003), ''Automatic Sprinklers for Fire-Protection Service.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Fixed Foam Nozzle.''

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AIR-PRESSURE-MAINTENANCE DEVICES, AUTOMATIC CERTIFIED FOR CANADA (VIOT7)

USE AND INSTALLATION

This category covers automatically controlled air- or nitrogen-supply valves intended to maintain desired pressure in dry-pipe sprinkler systems and in special sprinkler systems needing supervising air or nitrogen pressure, by feeding air or nitrogen as needed from a pressure source. These products are intended for installation in accordance with ANSI/NFPA 13, ''Installation of Sprinkler Systems.''

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, ''Guide for the Investigation of Dry Pipe, Deluge, and Pre-Action Valves for Fire-Protection Service.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Air Pressure Maintenance Device.''

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PIPING, SPRINKLER SYSTEM CERTIFIED FOR CANADA (VIVS7)

Chlorinated Polyvinyl Chloride Sprinkler Pipe and Fittings Certified for Canada (VIWT7)

USE AND INSTALLATION

This category covers chlorinated polyvinyl chloride (CPVC) pipe and fittings intended for use in sprinkler systems in the following types of occupancies:

1. Light Hazard occupancies as defined in ANSI/NFPA 13, ''Installation of Sprinkler Systems.''
2. Residential occupancies as defined in ANSI/NFPA 13R, ''Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.''
3. Residential occupancies as defined in ANSI/NFPA 13D, ''Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.''

CPVC pipe and fittings are intended to be installed in accordance with the requirements specified in the manufacturer's installation instructions,

Chlorinated Polyvinyl Chloride Sprinkler Pipe and Fittings Certified for Canada (VIWT7)−*Continued*

ANSI/NFPA 13, 13R or 13D, and the "National Building Code of Canada." Special installation and design criteria relative to pipe hanger spacings, piping and sprinkler restraint, sprinkler temperature rating, piping location, testing procedures and friction loss characteristics are specified in the manufacturer's installation instructions provided with the pipe.

As the performance of plastic pipe and fittings can be adversely affected by elevated temperatures, it is important that they not be installed where ambient temperatures normally exceed the maximum temperature ratings specified in the individual certifications. These pipe and fittings are not intended to be installed in outdoor applications.

The CPVC pipe and fittings are intended for use in wet-pipe systems only and have not been investigated for use in dry-pipe systems. Their use in ceiling spaces above nonsprinklered areas has not been investigated.

The manufacturer's installation instructions should be reviewed and authorities having jurisdiction consulted before installation.

PROTECTION

When used with standard response sprinklers, protection is intended to be provided for CPVC pipe and fittings by ceilings, walls or soffits consisting of, at a minimum, lath and plaster, 9.5 mm thick gypsum board, 13 mm thick plywood or a suspended membrane ceiling with lay-in panels or tiles, classified with respect to surface burning characteristics having a mass of not less than 1.7 kg/sq m and installed in steel suspension grids. The effectiveness of this protection can be impaired if penetrated by openings such as ventilation grills, exhaust fans connected to metal ducts serving washrooms excepted. Where such penetration is present, individual openings exceeding 0.03 sq m but not exceeding 0.71 sq m in area should be located so that the distance from the edge of the opening to the nearest sprinkler does not exceed 300 mm. This piping is not intended to be used where such openings exceed 0.71 sq m in area.

The effect of the presence of nonrated recessed lighting fixtures, public address speakers, and other interruptions of the protective membrane has not been investigated.

As an alternative to the protection requirements, CPVC pipe and fittings may be installed without protection (exposed) when subject to the following additional limitations:

1. Exposed piping is to be installed below a smooth, flat, horizontal, fixed ceiling construction.
2. Certified quick-response or certified residential sprinklers with a maximum temperature rating of 77°C.

During remodeling or ceiling repair, appropriate precautions should be implemented to properly shield the piping from the protected occupancy.

FACTORS NOT INVESTIGATED

Compatibility for this pipe material with other components in fire sprinkler systems has not been investigated. Information obtained from field installations of this piping indicates certain materials or chemicals that come into contact with either the internal or external sprinkler system piping may cause the piping to degrade. The pipe manufacturer should be consulted to obtain any information available relating to material or chemical compatibility. These products have not been investigated for their effect on the potability of the water supply.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199P (2002), "Combustible Piping for Sprinkler Systems."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "CPVC Sprinkler Pipe" or "Sprinkler Pipe," "CPVC Sprinkler Fitting" or "Sprinkler Pipe Fitting."

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Support Devices for Thermoplastic Sprinkler Piping Certified for Canada (VIXH7)

USE AND INSTALLATION

This category covers devices intended for use with certified thermoplastic piping installed in sprinkler systems in the types of occupancies specified in Chlorinated Polyvinyl Chloride Sprinkler Pipe and Fittings Certified for Canada (VIWT7).

Support Devices for Thermoplastic Sprinkler Piping Certified for Canada (VIXH7)−*Continued*

These support devices are intended to be installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes," or ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height."

Unless otherwise indicated in the individual certifications, these support devices have not been investigated for use in air-handling spaces.

INSTALLATION INSTRUCTIONS

Special installation and design criteria relative to pipe-support spacings, piping restraint and piping location are specified in the manufacturer's installation instructions provided with the pipe.

The manufacturer's installation instructions should be reviewed and Authorities Having Jurisdiction consulted before installation.

PROTECTION

An optional decorative cover may be provided with the support devices as indicated in the individual certifications. The decorative cover is not an acceptable means of providing protection for CPVC piping when a protective membrane is required in accordance with the certification of the CPVC pipe and the installation instructions.

ADDITIONAL INFORMATION

For additional information, see Chlorinated Polyvinyl Chloride Sprinkler Pipe and Fittings Certified for Canada (VIWT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199P, "Combustible Piping for Sprinkler Systems."

UL MARK

The Listing Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Support System Part for CPVC Piping" or "Pipe Hanger for CPVC Piping," or other appropriate product name as shown in the individual Listings.

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Cross-linked Polyethylene Sprinkler Pipe and Fittings Certified for Canada (VIXR7)

USE AND INSTALLATION

This category covers cross-linked polyethylene (PEX) pipe and fittings intended for use in multi-purpose piping systems of residential occupancies as defined in ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes."

PEX pipe and fittings are intended to be installed in accordance with the requirements specified in the manufacturer's installation instructions, ANSI/NFPA 13D, and the "National Building Code of Canada." Special installation and design criteria relative to pipe-hanger spacing, piping and sprinkler restraint, sprinkler temperature rating, piping location, testing procedures and friction loss characteristics are specified in the manufacturer's installation instructions provided with the pipe.

PEX pipe and fittings are not intended to be installed in combustible concealed spaces where sprinklers are required by ANSI/NFPA 13D.

PEX pipe and fittings are intended for use in areas where the maximum ambient temperature does not exceed 48°C. If the ambient temperature is expected to exceed this limitation, refer to the manufacturer's installation instructions for additional information on methods to reduce the pipe exposure temperatures. These pipe and fittings are not intended to be installed in outdoor applications.

PEX pipe and fittings are intended for use in wet-pipe systems only and have not been investigated for use in dry-pipe systems.

The manufacturer's installation instructions should be reviewed and Authorities Having Jurisdiction consulted before installation.

PROTECTION

Protection is intended to be provided for PEX pipe and fittings unless otherwise indicated in the individual certifications. The minimum protection should consist of either (1) one layer of 9.5-mm gypsum wallboard, (2) a suspended membrane ceiling with lay-in panels or tiles having a weight of not less than 1.7 kg/sq m when installed with metallic support grids, (3) 13-mm plywood soffits, or (4) one layer of 13-mm plywood.

During remodeling or ceiling repair, appropriate precautions should be implemented to properly shield the piping from the protected occupancy.

ADDITIONAL INFORMATION

Cross-linked Polyethylene Sprinkler Pipe and Fittings Certified for Canada (VIXR7)−*Continued*

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199P (2002), "Combustible Piping for Sprinkler Systems."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "PEX Sprinkler Pipe" or "PEX Sprinkler Fitting."

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Sprinkler Pipe Fittings Certified for Canada (VIYW7)

Fittings, Accessory Certified for Canada (VIYY7)

USE AND INSTALLATION

This category covers flexible joint fittings, union arm fittings, steel flanges and other accessory fittings intended for aboveground water-supply piping systems and fire-suppression systems.

These fittings are intended to be installed in accordance with the manufacturer's installation instructions. Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C213, "Preliminary Standard for Rubber Gasketed Fittings for Fire Protection Service."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Union Arm Fitting," or other appropriate product name as shown in the individual Listings.

* *

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Fittings, Grooved and Plain End Certified for Canada (VIZA7)

USE AND INSTALLATION

This category covers fittings consisting of cast, ductile or malleable iron or steel material intended for use with certified rubber-gasketed fittings in fire-service systems.

Unless otherwise indicated in the individual certifications, grooved-end and plain-end fittings are for use with rubber-gasketed fittings covered under Fittings, Rubber Gasketed Certified for Canada (VIZM7), and are intended to be installed in accordance with the individual rubber-gasketed fitting manufacturer's installation instructions.

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in ULC/ORD-C213, "Rubber Gasketed Fittings for Fire Protection Service."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged with or without the UL symbol on the product is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Grooved Fitting" or "Plain End Fitting" or other appropriate product name as shown in the individual Listings.

Fittings, Grooved and Plain End Certified for Canada (VIZA7)−*Continued*

* *

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Fittings, Malleable Iron Certified for Canada (VIZI7)

USE AND INSTALLATION

This category covers malleable-iron threaded fittings intended for use in fire-service systems and connections to such systems where the working pressure does not exceed the maximum rated pressure indicated on the fitting. These fittings comply with the dimensional requirements specified in ANSI/ASME B16.3 (1998), "Malleable Iron Threaded Fittings Classes 150 and 300," unless otherwise indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI/ASME B16.3 (1998), "Malleable Iron Threaded Fittings Classes 150 and 300."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Malleable-Iron Fitting" (or "MI").

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Fittings, Rubber Gasketed Certified for Canada (VIZM7)

USE AND INSTALLATION

This category covers fittings consisting of couplings and fittings having various configurations such as elbows, tees and outlets containing rubber gaskets, intended for joining sections of metallic pipe, including steel, ductile iron, and copper piping or other piping indicated in the individual certifications. Fittings have grooved or plain ends for use in fire-service systems located aboveground and underground, unless otherwise indicated in the individual certifications.

The pipe joints formed with these fittings may or may not need to be restrained, depending on the design and construction of the fitting. Grooved-type rubber-gasketed fittings are intended for use only with pipe, fittings and valves that have been grooved to the specifications of the rubber-gasketed fitting.

Fittings intended for installation with cut grooved steel pipe should be used with pipe having a minimum wall thickness in accordance with Schedule 20 (in sizes greater than 16 in.), Schedule 30 (in sizes 8 in. to 16 in.) or Schedule 40 (in sizes less than 8 in.) pipe.

Fittings intended for installation with rolled grooved steel pipe should be used with pipe having a minimum wall thickness in accordance with Schedule 10, unless otherwise indicated in the individual certifications. When Schedule 5 or 10 pipe is referenced in the individual certifications, the wall thickness should be as specified in ASTM A53, "Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless," or ASTM A795, "Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use."

Fittings intended for installation with cut grooved iron pipe shall be used with certified ductile-iron pipe (AWWA C151/A21.51, "Ductile-Iron Pipe, Centrifugally Cast, for Water").

Fittings intended for installation with plain-end pipe should be used with the type of pipe material and minimum wall thickness specified in the manufacturer's instructions. All bolts should be tightened to torque values or the bolt-tightening specifications contained in the manufacturer's installation instructions.

The size and position of the cut or rolled grooves should be as specified by the manufacturer's installation instructions.

Fittings, Rubber Gasketed Certified for Canada (VIZM7)−*Continued*

The rolled grooves located at pipe ends should be formed by the grooving machine specified by the individual manufacturer's installation instructions.

The rated pressures for the fittings are indicated in the individual certifications. The fittings are not intended to be used for pressures exceeding the pressure rating of the adjoining pipe or the allowable pressure of the adjoining pipe as specified in the applicable installation standard, such as ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 14, "Installation of Standpipe and Hose Systems," and ANSI/NFPA 15, "Water Spray Fixed Systems for Fire Protection."

These fittings are intended for use with a maximum ambient temperature of 49°C (120°F) unless otherwise indicated in the individual certifications.

Unless otherwise indicated in the individual certifications, rubber-gasketed fittings are unsuitable for use in dry-pipe systems.

FACTORS NOT INVESTIGATED

These products have not been investigated for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C213, "Rubber Gasketed Fittings for Fire Protection Service."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Rubber-gasketed Pipe Fitting."

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Fittings, Welded Outlet Certified for Canada (VIZU7)

USE AND INSTALLATION

This category covers fittings consisting of steel outlets intended to be welded to Schedule 5, 10, 30, 40 and certified steel sprinkler pipe having the same outside diameter as Schedule 40 pipe with the outlet pipe having wall thickness the same as or less than the run pipe. These fittings are also suitable for use with Schedule 10 as the run pipe and Schedules 40 as the branch pipe. Other combinations of run and outlet pipes are indicated in the individual certifications. Fitting outlets less than 1-in. diameter are intended for direct connection to sprinklers only. These welded outlets are intended for use with piping for fire-service systems when installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems."

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C213B, "Welded Outlet Fittings."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Welded Fitting", "Welded Outlet" or "Welded Outlet Fitting."

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Steel Sprinkler Pipe Certified for Canada (VIZY7)

USE AND INSTALLATION

This category covers steel sprinkler pipe intended for use in water-based fire-protection systems for water-distribution or trim applications. This pipe may be used in wet, preaction, deluge or dry-pipe-type sprinkler systems when installed in accordance with the following:

- ANSI/NFPA 13, "Installation of Sprinkler Systems"
- ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes"
- ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height"

In accordance with the referenced NFPA Standards, the size of steel pipe installed to distribute water to the sprinklers shall be not less than 2.54 cm (1 in.) nominal.

As indicated in the individual certifications, Schedule 10, Schedule 40 and other steel pipe having lesser wall thicknesses than unthreaded Schedule 40 pipe is covered under this category. Cut grooved, roll grooved and plain-end pipe is intended to be joined by certified rubber-gasketed fittings (see VIZM7) or welded outlet fittings (see VIZU7), which have been investigated for compatibility with the specific pipe. Plain-end pipe may also be joined by welding end-to-end or welding to flanges.

Schedule 10 and 40 pipe incorporates dimensions and materials specified in ASTM A53, "Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless," ASTM A135, "Standard Specification for Electric-Resistance-Welded Steel Pipe," or ASTM A795, "Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use." Schedule 40 pipe ends are intended to be threaded, roll grooved, cut grooved, or plain. Schedule 10 pipe ends are intended to be roll grooved or plain.

Steel pipe having lesser wall thicknesses than unthreaded Schedule 40 pipe may be threaded, roll grooved, or plain end as indicated in the individual certifications. Threading requires the use of thread gauges conforming to the dimensions of ASME B1.20.1, "Pipe Threads, General Purpose." This pipe has been investigated for both mechanical strength and relative corrosion resistance expressed in terms of a corrosion resistance ratio (CRR). This ratio for each size pipe is defined as follows:

$$CRR = \left(\frac{X}{X_{40}} \right)^3$$

Where: X_{40} = Thickness of Schedule 40 pipe under the first exposed thread. The "first exposed thread" is the minimum pipe thickness exposed to both interior and exterior corrosion and occurs at the threaded joint assembly at a line defined by the thread width, just before the pipe engages the fitting.

X = Thickness of the certified pipe measured either under the first exposed thread for threaded pipe or at the thinnest wall section for unthreaded pipe.

The CRR will be greater than 1.00 when the wall thickness of the certified pipe is greater than the wall thickness of Schedule 40 pipe under the first exposed thread, and less than 1.00 when the certified pipe wall is thinner than the wall thickness of Schedule 40 pipe under the first exposed thread.

The corrosion performance of steel pipe can vary depending on the composition of the steel of which it is formed, the composition of the water(s) to which it is exposed and related service conditions.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

Pipe materials have not been investigated for potability unless indicated in the individual certifications.

Coatings, platings or other surface treatments on the interior or exterior of the pipe have not been investigated for the ability to protect the pipe from corrosion, potability, or the effects of the coatings, platings or other surface treatments on components of the water-distribution system.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199S, "Light Wall Steel Pipes for Sprinkler Systems for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Steel Sprinkler Pipe" or "Sprinkler Pipe for Fire Service."

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Steel Sprinkler Pipe Certified for Canada (VIZY7)−*Continued*

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QUICK-OPENING DEVICES, ACCELERATORS AND EXHAUSTERS CERTIFIED FOR CANADA (VJPZ7)

USE AND INSTALLATION

This category covers auxiliary attachments and associated accessories intended for installation on dry-pipe valves designed to reduce time delay in operation of the valve after the opening of one or more sprinklers. These devices are intended for use on sprinkler systems having a capacity not greater than 750 gal unless indicated otherwise in the individual certifications.

These devices are intended for installation in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems."

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATON

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260 (1975), "Guide for the Investigation of Dry Pipe, Deluge, and Pre-Action Valves for Fire-Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Quick Opening Device," "Accelerator," "Accessory for Quick Opening Devices" or "Exhauster."

* *

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RESIDENTIAL AUTOMATIC SPRINKLERS CERTIFIED FOR CANADA (VKKW7)

GENERAL

This category covers residential automatic sprinklers that have been investigated for installation in fire protection systems in accordance with the manufacturer's installation instructions and ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Mobile Homes," ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," and ANSI/NFPA 13, "Installation of Sprinkler Systems" where residential sprinklers are permitted.

Residential sprinklers are intended for use at the minimum design densities specified in ANSI/NFPA 13D, 13R or 13, as applicable, but in no case are the minimum flow rates to be less than those indicated in the individual Listings. The temperature ratings of residential sprinklers and the maximum ceiling temperatures are as follows:

Temp Rating, °C	Max Ceiling Temp, °C
57-77	38
79-107	66

Sprinklers have been investigated for maximum system working pressures of 1200, 1725 or 2068 kPa. Sprinklers are limited to 1200 kPa maximum system working pressure unless otherwise indicated in the individual Listings.

Sprinkler orifice sizes are described below are in terms of "k" in metric units of l/min/kPa^{½} unless specifically noted.

A four- to six-character Sprinkler Identification Number (SIN) is marked on each sprinkler to assist in identifying the sprinkler manufacturer, k-factor, deflector characteristic, pressure rating and thermal sensitivity.

These sprinklers have been investigated for installation in occupancies having smooth, flat, horizontal ceilings unless otherwise indicated in the individual Listings. Sprinklers indicated for installation in sloped ceilings have been investigated for use in smooth, flat ceilings that do not extend into or serve as a ceiling for an upper level floor in the structure.

Recessed and concealed sprinklers having provisions for venting through the escutcheon have not been investigated for installation in ceilings below positive-pressure plenums. In addition, blocking of the escutcheon vents may adversely impact sprinkler sensitivity and performance.

Authorities Having Jurisdiction should be consulted regarding installation, temperature rating, and approval of plans.

The following abbreviations are used in the individual Listings:

Conc. – Concealed
HSW – Horizontal Sidewall
Rec. – Recessed

Residential Automatic Sprinklers Certified for Canada (VKKW7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1626-2003, "Residential Sprinklers for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Residential Sprinkler" (or "Res Spkr").

For ceiling-type residential sprinkler escutcheons not shipped with the sprinkler by the sprinkler manufacturer, the Listing Mark of UL on the product is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory), together with the word "LISTED," a control number, and the product name "Sprinkler Part." If the first three elements of the Listing Mark appear on a label that also clearly identifies the SIN of sprinklers for which the escutcheon is to be used, the product name can be omitted from the Listing Mark.

* *

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SPECIAL SYSTEM WATER CONTROL VALVES AND SYSTEM ACCESSORIES CERTIFIED FOR CANADA (VKRV7)

The Special System Water Control Devices listed herein are intended for installation in accordance with the National Fire Protection Association Standards for the Installation of Sprinkler Systems, NFPA 13; Deluge Foam - Water Sprinkler and Spray Systems, NFPA 16; and Water Spray Fixed Systems, NFPA 15.

Residential Automatic Domestic Water Shutoff Valves Certified for Canada (VKVI7)

USE AND INSTALLATION

This category covers automatic domestic water shutoff valves, which provide a means to isolate the domestic water supply during sprinkler operation and devote all incoming water to the residential sprinkler system.

These valves are intended for installation in residential fire sprinkler systems in one- and two-family dwellings and mobile homes in accordance with ANSI/NFPA 13D, "Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes," or in residential occupancies up to four stories in height in accordance with ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," as indicated in the individual certifications, and intended for working pressures not exceeding 1206 kPa.

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, "Dry Pipe and Deluge Valves for Fire-Protection Service."

Residential Automatic Domestic Water Shutoff Valves Certified for Canada (VKVI7)−*Continued*

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Domestic Shutoff Valve.''

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Special System Water Control Valves, Assembled Units Certified for Canada (VKYL7)

GENERAL

This category covers units comprised of electronic control and signaling equipment, fire main control valve, water-flow control valve (deluge type), electrically operated solenoid valves, check valve, trim and drain valves, gauges, supervisory devices and special system accessories as indicated in the individual certifications, which are provided from the factory as an assembled unit.

These units are rated for a maximum pressure of 1207 kPa unless otherwise indicated in the individual certifications.

In addition to other certified products indicated in the individual certifications, these units may incorporate products covered under:

Check Valves Certified for Canada (HMER7)
Extinguishing System Attachments Certified for Canada (USQT7)
Gauges, Pressure Certified for Canada (VEVX7)
Special System Water Control Valves, Deluge Type Certified for Canada (VLFT7)
Accessories for Special Systems Certified for Canada (VLTR7)
Switches, Pressure Certified for Canada (VOXZ7)
Valves, Trim and Drain Certified for Canada (VQGU7)

These units are intended to be installed with the cabinet in the upright position for connection to wet-pipe, dry-pipe, preaction or double-interlock automatic sprinkler systems as indicated in the individual certifications.

These units are intended to be installed in accordance with the manufacturer's installation instructions and the applicable requirements of ANSI/NFPA 13, ''Installation of Sprinkler Systems,'' and ANSI/NFPA 15, ''Water Spray Fixed Systems for Fire Protection.''

Authorities Having Jurisdiction should be consulted regarding installation, operational programming and approval of working plans before installation of the units.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQURIEMENTS

The basic standards used to investigate products in this category are ULC/ORD-C260, ''Guide for the Investigation of Dry Pipe, Deluge, and Pre-Action Valves for Fire-Protection Service,'' and ULC-S527 (1987), ''Control Units for Fire Alarm Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Special System Water Control Valves – Assembled Units.''

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Special System Water Control Valves, Deluge Type Certified for Canada (VLFT7)

USE AND INSTALLATION

This category covers valves intended for use in controlling water flow to deluge, pre-action, and foam-water sprinkler systems and water-spray systems.

Deluge valves are intended to be installed in the vertical position only, unless otherwise indicated in the individual certifications.

Special System Water Control Valves, Deluge Type Certified for Canada (VLFT7)−*Continued*

These valves are provided by the manufacturer with all the necessary trim accessories (e.g., shutoff valves, drains, fittings) and assembly drawings. The valves are required to be installed as specified by the individual manufacturer's installation instructions.

RELATED PRODUCTS

See Accessories for Special Systems Certified for Canada (VLTR7) .

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, ''Dry Pipe, Deluge and Pre-Action Valves for Fire-Protection Service''.

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Deluge Valve,'' ''Water Control Valve'' or ''Flooding Valve.''

* *

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Special System Water Control Valves, Double-interlock Type Certified for Canada (VLJH7)

USE AND INSTALLATION

This category covers special double-interlock, preaction-type sprinkler system water-control valves. These valves include special features to prevent unintentional valve operation that would fill system piping with water. They are intended for use in areas requiring special consideration relative to unintentional valve operation which may cause pipe damage due to freezing conditions or water damage. Valve operation requires the actuation of two separate devices: (1) a certified fire detection device which is interconnected to the valve, and (2) a minimum of one automatic sprinkler.

Authorities Having Jurisdiction should be consulted before installation. The installation of these valves will result in a delay in the discharge of water. Special consideration should be provided regarding the need to increase system design area similar to the guidance provided in ANSI/NFPA 13, ''Installation of Sprinkler Systems,'' or dry-pipe systems.

These valves are intended to be installed in the vertical position only, unless otherwise indicated in the individual certifications.

These valves are provided by the manufacturer with all the necessary trim accessories (e.g., shutoff valves, drains, fittings) and assembly drawings. The valves are required to be installed as specified by the individual manufacturer's installation instructions.

RELATED PRODUCTS

See Accessories for Special Systems Certified for Canada (VLTR7).

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in ULC Subject C260, ''Dry Pipe, Deluge and Pre-Action Valves for Fire-Protection Service.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged or the Listing Mark on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Water Control Valve – Double Interlock Type.''

* *

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Special System Water Control Valves, Pressure-reducing and Pressure-control Type Certified for Canada (VLMT7)

USE AND INSTALLATION

This category covers valves intended for use as wet-pipe pressure reducing, pressure control, water-flow control, or combination pressure and water-flow control valves in water-based fire-suppression systems, including sprinkler and standpipe systems.

Valves suitable for use as indicating valves are noted in the individual certifications.

These valves are intended to be installed and maintained in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," ANSI/NFPA 14, "Installation of Standpipe and Hose Systems," ANSI/NFPA 25, "Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," and the manufacturer's installation instructions.

The manufacturer's installation instructions include a description of the performance characteristics of these valves for both flowing and nonflowing (static) conditions.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Valves intended for standpipe hose connection use are covered under Pressure-reducing and -Restricting Devices Certified for Canada (VUTX7).

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C312, "Check Valves for Fire Protection Service."

UL MARK

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pressure Reducing Valve," "Pressure Control Valve" or "Pilot Operated Pressure Control Valve."

* *

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Accessories for Special Systems Certified for Canada (VLTR7)

USE AND INSTALLATION

This category covers accessory units intended for use with special system water-control valves (VLFT7 or VLMT7), including electrically operated valves and thermostatic releases. Heat-responsive devices and their accessories used with these special systems are covered under Accessories, Releasing Device Certified for Canada (SYSW7), Control Units, Releasing Device Certified for Canada (SYZV7) and Releasing Devices Certified for Canada (SZNT7). These devices are intended to be installed in accordance with the manufacturer's installation instructions for special system water-control valves.

FACTORS NOT INVESTIGATED

These products have not been investigated for use in potable water systems.

ADDITIONAL INFORMATION

For additional information, see Special System Water-control Valves and System Accessories Certified for Canada (VKRV7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, "Guide for the Investigation of Dry Pipe, Deluge, and Pre-Action Valves for Fire-Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Actuating Valve," "Dry Pilot-Line Actuator" or "Remote Control Valve," or other appropriate product name as shown in the individual Listings.

* *

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Accessories for Special Systems Certified for Canada (VLTR7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

SPRINKLERS, AUTOMATIC AND OPEN CERTIFIED FOR CANADA (VNIV7)

GENERAL

This category covers automatic and open sprinklers that have been investigated for their ability to control fires when installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," and ANSI/NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height."

Sprinklers investigated for special service conditions are indicated in the individual Listings. In addition, extended coverage, ceiling, sidewall, high temperature wax coated, flow control, specific application, and dry-type sprinklers have been investigated for installation in accordance with the manufacturer's installation and design parameter instructions.

Automatic sprinklers are intended to operate when the temperature of the heat-responsive element exceeds its thermal-response temperature. Sprinkler response characteristics, either Standard Response (SR) or Quick Response (QR), are specified in the individual Listings.

The standard temperature ratings of automatic sprinklers and the maximum ceiling temperatures and color-coding are as follows:

Temperature Class	Temperature Rating, °C	Frame Color Code +	Color Code for Glass Bulb Sprinklers	Max Ceiling Temp, °C
Ordinary	57 to 77	No Color ++	Orange or Red	38
Intermediate	79 to 107	White	Yellow or Green	66
High	121 to 149	Blue	Blue	107
Extra High	163 to 191	Red	Purple	149
Very Extra High	204 to 246	Green	Black	191
Ultra High	260 to 302	Orange	Black	246
Ultra High	343	Orange	Black	329

+ The color code for non-decorative sprinklers is on the frame arms except for corrosion-resistant sprinklers. Corrosion-resistant sprinklers are marked with either a dot on top of the deflector, color of coating, or colored frame arms.

++ The 57°C sprinklers may be color-coded black.

Open sprinklers are automatic sprinklers without heat-responsive operating parts.

Sprinklers have been investigated for system working pressures of 48 to 1200, 48 to 1725, or 48 to 2400 kPa. Sprinklers are limited to 48 to 1200 kPa system working pressure unless otherwise indicated in the individual Listings. Sprinklers intended for use with foam liquid concentrates are indicated in the individual Listings under Foam Liquid Concentrates Certified for Canada (GFGV7).

Sprinkler orifice sizes are described below are in terms of a discharge coefficient, "k," in metric units of $l/min./kPa^{1/2}$ unless specifically noted.

A four- to six-character Sprinkler Identification Number (SIN) is marked on each sprinkler to assist in identifying the sprinkler manufacturer, k-factor, deflector characteristic, pressure rating and thermal sensitivity.

Authorities Having Jurisdiction should be consulted regarding installation, temperature rating, and approval of working plans before sprinklers are installed.

The following abbreviations are used in the individual Listings:

Conc. – Concealed
HSW – Horizontal Sidewall
QR – Quick Response
Rec. – Recessed
SR – Standard Response
VSW – Vertical Sidewall

SPRINKLER TYPES

Automatic and open sprinklers consist of the following types:

Upright and Pendent Standard Spray Sprinklers

Nominal 8 k-factor

These sprinklers have a nominal 80 k-factor (nominal 12.7-mm size orifice) and their deflectors are designed to discharge water in a parabolic pattern 4.9 m in diameter, measured 1.22 m below the plane of the deflector at a flow rate of 57 lpm, with little or no water discharged upward to wet the ceiling. These sprinklers have 1/2-in. NPT inlet threads unless noted in the individual Listings.

Nominal 2 to 6 k-factors

These sprinklers have nominal k-factors of 2, 2.7, 4 or 6 (nominal orifice sizes 6.4, 7.9, 9.5 and 11.1 mm, respectively) and they discharge 75, 67, 50 and 25% less water, respectively, at the same inlet pressure than nominal 8 k-factor (nominal 12.7-mm orifice) sprinkler.

Sprinklers, Automatic and Open Certified for Canada (VNIV7)−*Continued*

These sprinklers have been investigated for installation in light hazard occupancies only. These sprinklers have 1/2-in. NPT inlet threads unless noted in the individual Listings.

Nominal 11.5 k-factor

These sprinklers discharge approximately 40% more water, at the same inlet pressure, than nominal 8 k-factor sprinklers. These sprinklers have 3/4-in. NPT inlet threads unless noted in the individual Listings.

Standard Sidewall Spray Sprinklers

Sidewall spray sprinklers have been investigated for installation near a wall and near the ceiling. They consist of the horizontal and vertical types and are intended to discharge water on the back wall and outward in a quarter-spherical pattern. Sidewall sprinklers have been investigated for installation in either the upright, pendent or horizontal positions as indicated in the individual Listings. Sidewall sprinklers have been investigated for installation in light hazard occupancies unless otherwise indicated in the individual Listings that they have also been investigated for use in ordinary hazard occupancies. Sidewall sprinklers with nominal k-factors of 2, 2.7, 4 or 6 (nominal orifice sizes 6.4, 7.9, 9.5 and 11.1 mm, respectively) have been investigated for installation in light hazard occupancies only.

Horizontal and vertical sidewall sprinklers are intended for installation at minimum distances between sprinklers of 1.8 m or as specified in the manufacturer's installation and design parameter instructions.

Flush, Recessed and Concealed Types

These decorative-type sprinklers are intended for use with a concealed piping system and have been investigated for installation in a pendent or horizontal sidewall orientation (HSW). Flush types are constructed with an operating element, which extends a short distance from the ceiling or wall. Upon actuation, the sprinkler deflector extends beyond the plane of the ceiling or wall.

Recessed types consist of a pendent or sidewall sprinkler installed in a decorative escutcheon, which minimizes protrusion of the sprinkler into the room without adversely affecting water distribution. Concealed types incorporate a cover plate, which is released prior to sprinkler operation. Recessed concealed sprinklers having provisions for venting through the escutcheon have not been investigated for installation in ceilings below positive-pressure plenums. In addition, blocking of escutcheon vents may adversely impact sprinkler sensitivity and performance.

Concealed-type sprinklers with cover plates are intended to be installed in accordance with the temperature rating of the sprinkler and not the rating of the cover plate. Concealed-type sprinklers are available with nominal k-factors ranging from 2 through 16.1. The SIN is located in a visible location when the cover plate is removed.

Dry Sprinklers

Dry sprinklers have been investigated for installation on dry-pipe systems or wet systems where the sprinkler may be subject to freezing temperatures. As noted in the individual Listings, these sprinklers are intended for installation in the pendent, upright, or horizontal sidewall orientation.

Dry-type sprinklers consist of a sprinkler permanently secured to an extension nipple, which has a seal at the inlet end to prevent water from entering the nipple, until the sprinkler operates. The inlet end of the nipple is intended to be installed into the fittings referenced in the manufacturer's installation instructions. Dry-type sprinklers may be of the flush, recessed and concealed type.

Listings are for dry pendent types only unless otherwise indicated in the individual Listings.

Conventional (Old Style) Sprinklers

Conventional sprinklers may be installed in either the upright or pendent positions. They are designed to direct 40% to 60% of the total water initially discharged in a downward direction.

These sprinklers have 1/2-in. NPT inlet threads unless noted in the individual Listings.

Flow Control (On-Off) Sprinklers

These sprinklers are designed to control water flow by automatically cycling on and off within a specified temperature range.

Standard Response (SR)-Extended-coverage Sprinklers – Light Hazard

Extended-coverage (EC) sprinklers are intended for installation in light hazard occupancies having ceiling constructions as specified in ANSI/NFPA 13, unless other ceiling constructions are indicated in the individual Listings.

EC sidewall sprinklers have been investigated for installation with their deflectors located from 10.1 to 15.2, 15.2 to 30.5, or 30.5 to 45.7 cm (or any combination) below the ceiling as indicated in the individual Listings. EC upright and pendent sprinklers have been investigated for installation with their deflectors located 2.5 to 30.5 cm below the ceiling unless otherwise indicated in the individual Listings. EC sprinklers have been investigated for installation in accordance with the information indicated in the individual Listings and the manufacturer's installation and design parameter instructions. The maximum installation width and length dimensions, minimum flow rate and nominal k-factor are specified in the individual Listings.

Sprinklers, Automatic and Open Certified for Canada (VNIV7)−*Continued*

Quick Response (QR)-Extended-coverage Sprinklers – Light Hazard

These are EC sprinklers that have demonstrated quick response characteristics at the specified coverage areas, QR-EC upright and pendent sprinklers have been investigated for installation with their deflectors located 2.5 to 30.5 cm below the ceiling unless otherwise indicated in the individual Listings. QR-EC sidewall sprinklers have been investigated for installation with their deflectors located from 10.1 to 15.2, 15.2 to 30.5, or 30.5 to 45.7 cm (or any combination) below the ceiling. QR-EC sprinklers have been investigated for installation in light hazard occupancies having smooth, flat, horizontal ceilings unless otherwise indicated in the individual Listings. The maximum installation width and length dimensions, minimum flow rate and nominal k-factor are specified in the individual Listings.

Standard Response (SR)-Extended-coverage Sprinklers – Ordinary Hazard

These extended-coverage ordinary hazard occupancy (ECO) sprinklers are intended for installation in Ordinary Hazard Groups 1 and 2 occupancies.

These sprinklers are intended for installation in occupancies having ceiling constructions referenced for extended-coverage sprinklers specified in ANSI/NFPA 13 unless additional ceiling constructions are indicated in the individual Listings. The maximum installation width and length dimensions, minimum flow rate for each occupancy and nominal k-factor are specified in the individual Listings.

Quick Response (QR)-Extended-coverage Sprinklers – Ordinary Hazard

These are ECO sprinklers that have demonstrated quick response characteristics at the specified coverage areas. These sprinklers are intended for installation in Ordinary Hazard Groups 1 and 2 occupancies.

These sprinklers are intended for installation in occupancies having ceiling constructions referenced for extended-coverage sprinklers specified in ANSI/NFPA 13 unless additional ceiling constructions are indicated in the individual Listings. The maximum installation width and length dimensions, minimum flow rate for each occupancy and nominal k-factor are specified in the individual Listings.

Corrosion-resistant Sprinklers

Corrosion-resistant sprinklers have been investigated for installation in corrosive atmospheres.

These sprinklers are protected from the corrosive atmosphere by coating the entire sprinkler or operating parts with protective coatings such as wax, lead, wax over lead, enamel, or by fabricating the sprinklers from corrosion-resistant parts.

High-temperature, Wax-coated Sprinklers

These sprinklers have been investigated for installation where corrosion-resistant, high-temperature-rated sprinklers are required and the maximum ambient temperature does not exceed 66°C. The maximum ambient temperature is based on the thermal exposure limitations of the wax coating.

Intermediate-level Sprinklers (Water Shielded)

These sprinklers are equipped with a disc or canopy mounted above the heat-responsive element to protect it from retarded operation due to water discharge from sprinklers at higher elevations. These sprinklers have been investigated for installation in the upright or pendent positions as indicated in the individual Listings.

Sprinklers for Storage Protection (Area/Density)

These upright and pendent sprinklers have nominal k-factors of 16.1 and larger. They are intended for protection of stored commodities using the design requirements for area and density as specified in ANSI/NFPA 13. In addition, upright and pendent spray sprinklers having nominal k-factor of 11.2 may be used for storage applications where the design density does not exceed 14 mm/min.

Extended-coverage Sprinklers for Storage Protection (Area/Density)

These upright and pendent extended-coverage sprinklers for storage applications have nominal k-factors of 16.1 and larger. They are intended for protection of stored commodities using design requirements for area and density as specified in ANSI/NFPA 13 for coverage areas having maximum width and length dimensions of 3.7 x 3.7 m or 4.3 x 4.3 m. Unless otherwise indicated in the manufacturer's installation and design parameter instructions, the clearance between the top of the stored commodity and the sprinkler deflector is intended to be at least 91 cm.

The sprinkler coverage area dimensions are specified in the individual Listings.

Sprinklers for Storage Protection (Control Mode Specific Application)

These upright and pendent sprinklers have nominal k-factors of 16.1 and larger. They are intended for protection of stored commodities using design discharge pressures and areas as specified in the manufacturer's installation and design parameter instructions and ANSI/NFPA 13 if refer-

Sprinklers, Automatic and Open Certified for Canada (VNIV7)−*Continued*

enced therein. Unless otherwise indicated in the manufacturer's installation and design parameter instructions, the clearance between the top of the stored commodity and the sprinkler deflector is intended to be at least 91 cm.

Specific Application Sprinklers

These sprinklers have been investigated for protection of specific fire risks, (except for storage applications) as described in the Listing information and the manufacturer's installation and design parameter instructions.

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C199 (2003), "Automatic Sprinklers for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Automatic Sprinkler" or "Open Sprinkler."

For ceiling-type sprinkler escutcheons not shipped with the sprinkler by the sprinkler manufacturer, the Listing Mark of UL on the product is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sprinkler Part." If the first three elements of the Listing Mark appear on a label that also clearly identifies the SIN of sprinklers for which the escutcheon is to be used, the product name can be omitted from the Listing Mark.

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SPRINKLERS, EARLY SUPPRESSION FAST RESPONSE CERTIFIED FOR CANADA (VNWH7)

GENERAL

This category covers early suppression fast response (ESFR) sprinklers that have been investigated for installation in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems." ESFR sprinklers incorporate a fast-actuating heat-responsive element and are designed to deliver a water discharge intended to suppress fires.

Sprinkler orifice sizes are described in terms of "k" in metric units of $l/min/kPa^{½}$ unless specifically noted. ESFR sprinklers have an orifice with minimum nominal "k" factors as indicated in the individual certifications.

The standard temperature ratings, maximum ceiling temperatures, and color coding of ESFR sprinklers are as follows:

Temperature Class	Temperature Rating, °C	Frame Color Code +	Color Code for Glass Bulb Sprinklers	Maximum Ceiling Temp, °C
Ordinary	57-74	No Color++	Orange or Red	38
Intermediate	93-104	White	Yellow or Green	66
High	121-149	Blue	Blue	107

+ The color code for ESFR sprinklers is on the frame arms except for corrosion-resistant sprinklers. Corrosion-resistant sprinklers are marked with either a dot on top of the deflector, color of coating, or colored frame arms.

++ The 57°C sprinklers may be color-coded black.

High-temperature-rated sprinklers are intended for installation in close proximity to heat sources only, as referenced in ANSI/NFPA 13.

A four- to six-character Sprinkler Identification Number (SIN) is marked on each sprinkler to assist in identifying the sprinkler manufacturer, k-factor, deflector characteristic, pressure rating and thermal sensitivity.

Specific-application ESFR sprinklers have been investigated for specific service pressures, fire risks, building and commodity heights, and installation criteria which may differ from those referenced in ANSI/NFPA 13.

Sprinklers, Early Suppression Fast Response Certified for Canada (VNWH7)−*Continued*

Authorities Having Jurisdiction should be consulted regarding installation, spacing, temperature rating and approval of working plans before sprinklers are installed.

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C1767 (2003), "Early-Suppression Fast-Response Sprinklers."

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Early Suppression Fast Response Sprinkler" (or "ESFR Spkr" or "SPEC APP ESFR").

* *

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SWITCHES, PRESSURE CERTIFIED FOR CANADA (VOXZ7)

USE

This category covers pressure-operated electric switches intended for use in connection with sprinkler equipment, water spray systems, and like protection systems, as a means of initiating electrical alarms upon flow of water in the equipment or for actuation of other auxiliary equipment.

Water flow may also be detected by alarm valves and water-flow indicators, which are covered under Valves, Alarm Certified for Canada (VPLX7) and Extinguishing System Attachments Certified for Canada (USQT7), respectively.

PRODUCT MARKINGS

Each product is marked to indicate its intended use. This consists of the term "Alarm Pressure Switch for Sprinkler Systems" or "Supervisory Pressure Switch for Sprinkler Systems."

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-S548, "Alarm Initiating and Supervisory Devices for Water Type Extinguishing Systems."

UL MARK

The Signaling Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Signaling Listing Mark for these products includes the UL Mark for Canada symbol with the word "SIGNALING" above the UL symbol and the word "LISTED" below the UL symbol (as illustrated in the Introduction of this Directory), a control number, and the product name "Fire Alarm Equipment" or "Fire Alarm Subassembly."

The product name may be abbreviated as follows: The word "Type:" followed by the appropriate Type Code (as shown below), additionally followed by "Subassembly," as applicable.

Type Codes:

F – Fire Alarm Equipment

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VALVES, ALARM CERTIFIED FOR CANADA (VPLX7)

USE AND INSTALLATION

This category covers automatic alarm valves intended for use in automatic wet-pipe sprinkler systems. Valves may be installed without a retarding chamber when steady pressures exist and with a retarding chamber when variable supply pressures exist. Unless otherwise indicated

Valves, Alarm Certified for Canada (VPLX7)−*Continued*

in the individual Listings, these alarm valves may be installed either vertically or horizontally. These valves are provided with either a pressure switch (electric circuit closer) for initiating electrical alarms, or water motor and gong for mechanical alarms, or both.

These valves are provided by the manufacturer with all the necessary trim accessories (e.g., shutoff valves, drains, fittings) and assembly drawings. The valves are required to be installed as specified by the individual manufacturer's installation instructions.

Requirements for the installation and use of these valves are included in ANSI/NFPA 13, "Installation of Sprinkler Systems."

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C193, "Guide for the Investigation of Alarm Valves for Fire-Protection Service," and ULC/ORD-C753, "Guide for the Investigation of Alarm Accessories for Automatic Water-Supply Control Valves for Fire-Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Alarm Valve," "Retarding Chamber" or "Water Motor and Gong."

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VALVES, DRY PIPE CERTIFIED FOR CANADA (VPZV7)

GENERAL

This category covers dry-pipe valves intended for use as an automatic means of controlling water flow to automatic dry-pipe sprinkler systems. These valves range in size from 1 in to 12 in.

This category also covers valves known as cold-weather valves and air-check valves, which are small-size dry-pipe valves for special uses.

The manufacturer provides the necessary trim accessories (e.g., shutoff valves, drains, fittings) and installation instructions. Accessories used in the trim, such as gate and check valves, are not specifically tested unless they have a specific effect on the operation of the valve. Accessories such as alarm devices, alarm-line strainers, etc., which are of importance to proper operation may be investigated as part of an alarm valve. See Valves, Alarm Certified for Canada (VPLX7).

The valves are required to be installed as specified by the manufacturer's installation instructions. Requirements for the installation and use of these valves are included in ANSI/NFPA 13, "Installation of Sprinkler Systems."

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C260, "Guide for the Investigation of Dry Pipe, Deluge, and Pre-Action Valves for Fire-Protection Service."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Dry Pipe Valve."

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VALVES, TRIM AND DRAIN CERTIFIED FOR CANADA (VQGU7)

USE AND INSTALLATION

Valves, Trim and Drain Certified for Canada (VQGU7)−*Continued*

This category covers trim and drain valves, which consist of ball-, plug-, angle- or globe-type shutoff valves for use in air- or water-supply piping in conjunction with dry pipe, deluge or alarm valves on sprinkler systems. These valves are rated for a maximum pressure of 1200 kPa unless otherwise indicated in the individual certifications. These products are intended to be installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems."

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices Certified for Canada (VDGT7) and Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C258 (2003), "Shutoff Valves for Trim and Drain Purposes for Fire Protection Service."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Drain Valve," "Trim Valve" or "Trim and Drain Valve."

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HOSE VALVES CERTIFIED FOR CANADA (VTSR7)

GENERAL

This category covers hose valves for working pressures not exceeding 1210 or 2075 kPa. They consist of angle-pattern and straightway-pattern valves intended for use on standpipes, fire pumps, and hydrants supplying water for fire-protection service.

Hose valves include the following patterns and sizes:

Angle (90 Degree) Patterns — For standpipes with inlet and outlet openings of the same size or with the inlet larger than the outlet. Openings have nominal diameters of 1 in. (25 mm), 1-1/2 in. (38 mm), 2-1/2 in. (63 mm) or 3 in. (76 mm).

Angle (90 and 120 Degree) Patterns — For wet-pipe sprinkler equipment with 1-in. inlets (25 mm) and 1-1/2-in. (38 mm) outlets.

Straightway Patterns — For fire pumps and hydrants with inlet and outlet openings of the same size, having nominal diameters of 2-1/2 in. (63 mm).

Straightway Patterns — For standpipes with inlet and outlet openings of the same size or with the inlet larger than the outlet. Openings have nominal diameters of 1 in. (25 mm), 1-1/2 in. (38 mm), 2-1/2 in. (63 mm) or 3 in. (76 mm).

Requirements for the installation and use of these valves are included in ANSI/NFPA 14, "Installation of Standpipe and Hose Systems," ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection," and ANSI/NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances."

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C668, "Guide for the Investigation of Hose Valves for Fire-Protection Service."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Fire Hose Valve."

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SPRINKLER SYSTEM AND WATER SYSTEM DEVICES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VQNT7)

USE AND INSTALLATION

This category covers devices and equipment for use in sprinkler systems and water spray systems.

These devices and equipment are intended to be installed in compliance with NFPA 13, "Sprinkler Systems," NFPA 15, "Water Spray Systems for Fire Protection" and NFPA 16, "Foam-Water Sprinkler and Spray Systems." Authorities Having Jurisdiction should be consulted regarding use of these Listed devices and equipment before installation.

SWITCHES, PRESSURE FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VRBR7)

USE

This category covers pressure-operated switches intended for connection with sprinkler equipment, water-spray systems and like protection systems, as a means of initiating electrical alarms upon flow of water in the equipment or the actuation of other auxiliary equipment.

ADDITIONAL INFORMATION

For additional information, see Sprinkler System and Water Spray System Devices for Use in Hazardous Locations Certified for Canada (VQNT7) and Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pressure Switch for Use in Hazardous Locations."

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STANDPIPE EQUIPMENT CERTIFIED FOR CANADA (VROZ7)

PRESSURE-REDUCING AND -RESTRICTING DEVICES CERTIFIED FOR CANADA (VUTX7)

USE AND INSTALLATION

This category covers devices intended for use in wet-pipe systems and intended to be installed in the supply piping of standpipe systems or at the hose outlets as a means of reducing existing high pressure in the piping system to a level that the fire hose nozzle can be managed by an operator.

Pressure-restricting devices are designed to reduce outlet pressures under flowing (residual) conditions only and are intended to be used in situations where the inlet pressure does not exceed 1200 kPa. Pressure-reducing devices are designed to reduce outlet pressures under both flowing (residual) and nonflowing (static) conditions. The type of device is indicated in the individual certifications.

These devices are intended to be installed in accordance with ANSI/NFPA 13, "Installation of Sprinkler Systems," and ANSI/NFPA 14, "Installation of Standpipe and Hose Systems," and maintained in accordance with ANSI/NFPA 25, "Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," and the manufacturer's installation instructions. The manufacturer's instructions include a description of the performance characteristics of these devices under flowing (residual) and nonflowing (static) conditions.

Pressure-reducing or -restricting devices having a 1-1/2 NPS outlet are intended to be used in Class II standpipe systems, and devices having a 2-1/2 NPS outlet are intended for use in Class I or III standpipe systems.

Pressure-reducing and -Restricting Devices Certified for Canada (VUTX7)–*Continued*

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Valves intended for use in sprinkler systems are covered under Special System Water-control Valves, Pressure-reducing and Pressure-control Type Certified for Canada (VLMT7).

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C668, "Guide for the Investigation of Hose Valves for Fire Protection Service," and ANSI/UL 1468, "Direct Acting Pressure Reducing and Pressure Restricting Valves."

The following requirements from ANSI/UL 1468 supersede or are added to the applicable requirements in ULC/ORD-C668: ANSI/UL 1468 section or paragraph reference, 7.2, 8.1, 8.2, 9, 9A, 10.2, 17, 19, 20, 21, 22, 23, 27, 28, 30.1 e), f), 30.4, 30.5, 31.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Pressure Reducing Device," "Pressure Reducing Valve," "Pressure Restricting Device" or "Pressure Restricting Valve."

* *

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STATIC NEUTRALIZING EQUIPMENT CERTIFIED FOR CANADA (VWWZ7)

USE AND INSTALLATION

This category covers high-voltage power-supply units with or without static discharge bars, high-voltage ionizers and related products. This type of equipment is designed for individual installation on equipment where static charges are generated during operation, or as stand-alone units for direct installation in the field.

Due to the nature of these installations, high-voltage parts are necessarily exposed and cannot be completely shielded from contact.

Care should be taken to follow the instructions provided with the equipment regarding the installation of the static neutralizers, including proper grounding of the equipment, and operating personnel should be carefully constructed regarding its correct operation and maintenance.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate stand-alone products and products intended to be used with equipment other than Information Technology Equipment (ITE) are CAN/CSA-C22.2 No. 0.4, "Bonding and Grounding of Electrical Equipment," and CAN/CSA-C22.2 No. 187, "Electrostatic Air Cleaners." These products are identified for "general" use in the individual certifications.

The basic standard used to investigate products intended to be used with Information Technology Equipment (ITE) is CAN/CSA-C22.2 No. 950 / CAN/CSA-C22.2 No. 60950, "Safety of Information Technology Equipment." High-voltage parts that may be accessible after installation have been found to comply with requirements of LIMITED CURRENT CIRCUITS. High-voltage components are investigated using the applicable requirements in CAN/CSA-C22.2 No. 0.4, "Bonding and Grounding of Electrical Equipment," and CAN/CSA-C22.2 No. 187, "Electrostatic Air Cleaners." These products may be marked "ITE" and are identified for "ITE" use in the individual certifications. They are also suitable for general use.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Static Neutralizing Equipment," "Static Neutralizing Bar," "Static Eliminator" or "Static Eliminator Bar," or the name of the specific type of product as shown in the individual Listings.

* *

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STATIC NEUTRALIZING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VXDY7)

USE AND INSTALLATION

This category covers high-voltage power units and discharge bars designed for individual installation on equipment in hazardous locations where static charges are generated during operation.

Due to the nature of these installations, high-voltage parts are necessarily exposed and cannot be completely shielded from contact.

Certain products in this category are associated apparatus and intended for installation in unclassified locations. They are provided with intrinsically safe circuit(s) as indicated on the product, for extension into a hazardous location.

Care should be taken to follow the instructions provided with the equipment regarding the installation of the static neutralizers, including proper grounding of the equipment. Operating personnel should be carefully instructed regarding its correct operation and maintenance.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ‘‘Static Neutralizing Equipment for Use in Hazardous Locations’’ or ‘‘Antistatic Bar for Use in Hazardous Locations,’’ or other appropriate product name as shown in the individual Listings.

* *

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STATION OUTLETS CERTIFIED FOR CANADA (VXHT7)

USE AND INSTALLATION

This category covers station outlets intended for use in health care facilities for distribution of nonflammable medical gas in rigid piping systems or manufactured assemblies.

Each outlet is equipped with a female quick-coupler of the noninterchangeable type for the specified gas. Where the back body of a station outlet is shipped separately from the front body, the back body is marked with the statement ‘‘Assembly Consisting of Back Body [No.] Only For Use With [Listee’s Name] Front Body [No.].’’

RATINGS

The gas and working pressure of these station outlets are specified in the individual Listings.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-Z305.5 (1986), ‘‘Medical Gas Terminal Units,’’ and/or CAN/CSA-Z9170-1 (2011), ‘‘Terminal Units for Medical Gas Pipeline Systems – Part 1: Terminal Units for Use with Compressed Medical Gases, Vacuum, and Anaesthetic Gas Scavenging Systems.’’

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ‘‘Station Outlet’’ or ‘‘Station Outlet for *.’’

* indicates the gas service

* *

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SPILL CONTAINMENT FOR STATIONARY LEAD-ACID BATTERY SYSTEMS CERTIFIED FOR CANADA (VXMB7)

GENERAL

This category covers spill containment for stationary lead-acid battery systems used in telecommunications battery rooms and similar locations. These systems are intended to provide a reliable means of containment for hazardous-material liquids in the event of electrolyte leakage from stationary lead-acid or similar battery systems.

INSTALLATION

These systems are field assembled and require complete written installation instructions to ensure proper assembly.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic requirements used to investigate products in this category are the containment requirements for electrolyte spill as outlined in 4.3.8 of CAN/CSA-C22.2 No. 60950-1 (2007), ‘‘Information Technology Equipment – Safety – Part 1: General Requirements.’’

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ‘‘Spill Containment for Stationary Lead-Acid Battery Systems,’’ or other appropriate product name as shown in the individual Listings.

* *

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STRAINERS CERTIFIED FOR CANADA (VXYV7)

USE

This category covers strainers for use in the assembly of appliances or in piping handling the gases or liquids and at the pressures indicated in the individual certifications.

RELATED PRODUCTS

Strainers for use only by manufacturers in the assembly of oil burners are covered under Heating and Heating-Cooling Appliance Accessories Certified for Canada (LZZX7).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C331, ‘‘Strainers for Flammable Fluids and Anhydrous Ammonia.’’

UL MARK

The UL symbol on the product and the Listing Mark of UL on the smallest unit container in which the product is packaged or the Listing Mark on the product is the only method provided by UL to identify these products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ‘‘LISTED,’’ a control number, the product name ‘‘Strainer,’’ and the state-

ment "For Gasoline, * kPa max," "For Kerosene, * kPa max," "For Anhydrous Ammonia, * kPa max," "For LP-Gas, * kPa max," "For Anhydrous Ammonia and LP-Gas, * kPa max," or other flammable fluid and pressure designation as identified in the individual Listings. The statement "For Use only at Outlet of Flammable Liquid Dispensing Device Hose" is also included if the strainer is so restricted.

* Pressure rating not required if marked elsewhere on the strainer.

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SURGE-PROTECTIVE DEVICES CERTIFIED FOR CANADA (VZCA7)

GENERAL

This category covers surge-protective devices (SPDs) designed for repeated limiting of transient-voltage surges up to 60 Hz power circuits not exceeding 1000 V. SPDs are designated as follows:

Type 1 — Permanently connected SPDs intended for installation between the secondary of the service transformer and the line side of the service equipment overcurrent device, as well as the load side, including meter sockets and intended to be installed without an external overcurrent-protective device.

Type 2 — Permanently connected SPDs intended for installation on the load side of the service equipment overcurrent device, including SPDs located at the branch panel.

Type 3 — Point-of-utilization SPDs, installed at a minimum conductor length of 10 m (approximately 30 ft) from the electrical service panel to the point of utilization, e.g., cord-connected, direct-plug-in, receptacle-type and SPDs installed at the utilization equipment being protected. The distance (10 m) is exclusive of conductors provided with or used to attach SPDs.

PRODUCT MARKINGS

SPDs are marked with the following:

SPD Type designation, 1, 2 or 3.

Electrical ratings, including the operating voltage rating (volts), ac power frequency (Hz) and number of phases. For a two-port SPD, the ratings include the load current rating (amperes).

Voltage Protection Rating (VPR) in volts.

Nominal Discharge Current (I_n) Rating in amps or kA (for Type 1 and 2 SPDs).

Maximum Continuous Operating Voltage Rating (MCOV) in volts (for Type 1 and 2 SPDs).

Short-circuit Current Rating (SCCR) in amps or kA (for Type 1 and 2 SPDs).

PV SPDs are marked, "For Use in Photovoltaic Systems Only," or the equivalent.

SPDs investigated for general dc applications may also be marked, "Suitable for Use in Photovoltaic Systems."

FACTORS NOT INVESTIGATED

The effect of the surge protector on connected loads, the effect of the surge protector on harmonic distortion of the supply voltage, and the adequacy of the suppression level to protect connected equipment from damage due to transient-voltage surges has not been investigated.

RELATED PRODUCTS

Cord-connected SPDs employing ground-fault circuit interrupters are covered under Ground-fault Circuit Interrupters Certified for Canada (KCXS7).

Cord-connected and direct plug-in SPDs are not intended for use with medical, dental or health care facilities equipment.

Component SPDs, including discrete components as well as component assemblies, are covered under Surge-protective Devices Certified for Canada (VZCA8).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate Type 2 and 3 SPDs in this category is CSA-C22.2 No. 8 (1986), "Electromagnetic Interference (EMI) Filters," in addition to the requirements contained in CSA Electrical Notice No. 516, "Surge/Transient Voltage Suppressors" (dated 9-2-1986), and the applicable requirements for devices with varistors intended for surge suppression of connected loads in CSA-C22.2 No. 42 (2010), "General Use Receptacles, Attachment Plugs, and Similar Wiring Devices."

The basic standard used to investigate Type 1 SPDs intended for installation in accordance with Article 26-500 (Use and Location of Lightning Arresters) of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," is CAN/CSA-C233.1, "Gapless Metal Oxide Surge Arresters for Alternating

Current Systems," or IEEE C62.1 (1989), "IEEE Standard for Gapped Silicon-Carbide Surge Arresters for AC Power Circuits."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Surge Protective Device" (or "SPD").

The Listing Mark for this category requires the use of a holographic label.

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SURGE PROTECTORS AND ISOLATORS FOR USE ON CATHODICALLY PROTECTED SYSTEMS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (VZQO7)

GENERAL

This category covers surge protectors and isolators used to provide ac grounding and dc blocking for cathodic protection of underground pipelines and similar installations. They may also be used to minimize galvanic corrosion between structures of dissimilar metals.

These devices have been investigated for providing effective grounding-path characteristics and also for providing isolation of objectionable dc ground currents.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Surge Protector for Use in Hazardous Locations," "Overvoltage Protector for Use in Hazardous Locations" or "Polarization Cell Replacement Unit for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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SWIMMING POOL AND SPA EQUIPMENT CERTIFIED FOR CANADA (WABX7)

BLOWERS CERTIFIED FOR CANADA (WAGN7)

USE AND INSTALLATION

This category covers equipment intended to introduce pressurized air into spas and hot tubs to create a hydromassage effect. They are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These products are marked to indicate their suitability for use either indoors or outdoors (Type 3) or indoors only (Type 2). They are provided with an accessible pressure-wire connector for equipotential bonding during installation.

Blowers Certified for Canada (WAGN7)−*Continued*

To avoid water contacting live electrical parts, these products are intended to be installed in accordance with the manufacturer's instructions and permanently mounted at least 304.8 mm (12 in.) above the overflow level of the spa or hot tub.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 113 (1984), "Fans and Ventilators."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Spa Blower," "Hot Tub Blower" or "Spa/Hot Tub Blower."

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CONTROLS CERTIFIED FOR CANADA (WAWU7)

USE

This category covers controllers incorporating timers, temperature-regulating equipment, etc., for control of equipment intended for use with swimming pools, hot tubs and spas. This category also covers control panels for use with equipment intended for water-play fountains and water playground areas, swimming pools and spas, or fountains with water in common with swimming pools.

These products are marked to indicate their suitability for use either indoors or outdoors (type 3) or indoors only (type 2).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 218.1, "Spas, Hot Tubs and Associated Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Spa Controller" or "Swimming Pool Controller," or other appropriate product name as shown in the individual Listings.

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LUMINAIRES AND FORMING SHELLS CERTIFIED FOR CANADA (WBDT7)

USE

This category covers luminaires and forming shells for installation in accordance with Section 68 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

ACCESSORIES

This category also covers accessory devices and kits intended to be field installed for the purpose of modernizing a luminaire, such as to convert the luminaire from incandescent to LED technology. These accessories include instructions that identify the specific luminaire(s) for which the accessory is intended and that do not require special knowledge or skills beyond that normally required for user maintenance activities, such as lamp replacement. After installation of a certified accessory, the installed luminaire is expected to comply with the same requirements and perform in a comparable manner as a new luminaire, relative to safety risks.

REBUILT PRODUCTS

This category also covers dry-niche and wet-niche underwater luminaires for swimming pools that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt dry-niche and wet-niche underwater luminaires for swimming pools are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt dry-niche and wet-niche underwater luminaires for swimming pools are subject to the same requirements as new dry-niche and wet-niche underwater luminaires for swimming pools.

Luminaires and Forming Shells Certified for Canada (WBDT7)−*Continued*

PRODUCT MARKINGS

Luminaires investigated for operation only in contact with water are marked "SUBMERSE BEFORE LIGHTING" or the equivalent, and such marking is visible after installation. Additional markings for specific types of luminaires are described below.

PRODUCT TYPES AND INSTALLATION

Dry-niche Underwater Luminaires for Swimming Pools and Spas — These luminaires have been investigated for permanent installation only in the wall of a swimming pool or field-fabricated spa unless accompanying installation instructions indicate suitability for installation in the bottom of a pool or spa. These luminaires have been investigated for installation with the center of the lens not more than 600 mm (23.6 in.) below the normal water level unless otherwise marked. These luminaires are designed for servicing from the rear in a passageway behind the pool or spa wall or, if mounted in the bottom of a pool or spa, in a tunnel underneath the pool or spa. The luminaire may include (1) a factory-installed length of flexible cord terminating in an attachment plug, and (2) an attachment-plug receptacle for connection of the branch-circuit conductors.

Wet-niche Underwater Luminaires for Swimming Pools and Spas — These luminaires have been investigated for installation only in the wall of a swimming pool or field-fabricated spa unless accompanying installation instructions indicate suitability for installation in the bottom of a pool or spa. These luminaires have been investigated for installation with the center of the lens not more than 600 mm (23.6 in.) below the normal water level unless otherwise marked. These luminaires have been investigated for installation in a permanently installed forming shell (luminaire housing) in which the luminaire will be completely surrounded by water. These luminaires are marked to indicate the proper forming shells with which they have been investigated for use. These luminaires are provided with a factory installed, permanently attached flexible cord with an exposed length of not less than 2.4 m (8 ft). The flexible cord is confined in the forming shell by the luminaire and permits the luminaire to be removed from the forming shell and to be lifted to the pool or spa deck for servicing without lowering the water level or disconnecting the luminaire from the branch-circuit conductors. Luminaires with longer cords are available for installations where the junction box or splice enclosure is so located that a 2.4 m (8 ft) long cord will not permit luminaire removal from the forming shell and placement on the deck for servicing. To reduce the risk of product damage, any cord length in excess of that necessary for servicing should be trimmed from the supply end rather than stored in the forming shell.

Forming Shells (Housing) for Wet-niche Underwater Luminaires for Swimming Pools and Spas — These are structures designed to support a mating wet-niche luminaire, for mounting in a pool structure. Forming shells are marked to indicate the luminaires with which the forming shells have been investigated for use.

Underwater Luminaires for Aboveground Storable Swimming Pools — These luminaires have been investigated for temporary installation only through or on the wall of an above ground storable pool (a pool constructed in such a manner that it may be readily disassembled for storage and reassembled to its original integrity). They include all three of the following factory-provided parts:

1. Lamp assembly for temporary installation on or through the wall of an above ground pool
2. An isolating-type power supply provided with a 0.9 m – 1.8 m (3-6 ft) power-supply cord for connection to a source of supply and for temporary mounting away from the pool (the remote assembly)
3. Jacketed flexible cord of not less than 7.6 m (25 ft) in length connecting the lamp assembly and the remote assembly

If not an integral part of the remote assembly, the power supply is intended to be connected to a receptacle protected by a Class A ground fault circuit interrupter.

These luminaires have been investigated for installation with the top of the lens not less than 200 mm (8 in.) below the top of the pool. A hole through the pool wall may be required for luminaire installation. Unless otherwise indicated in the luminaire's installation instructions, the luminaire design has been investigated for the lower edge of any hole that a luminaire installer must cut in the pool wall to be no more than 360 mm (14 in.) below the top of the pool wall. The pool wall manufacturer may provide, at a greater depth, a properly sized hole or a reinforced wall section designed for field-cutting a properly sized hole for a luminaire or plumbing fitting. Unless otherwise marked for a greater maximum installation depth, these luminaires have been investigated for installation in

Luminaires and Forming Shells Certified for Canada (WBDT7)−*Continued*

such a hole with the center of the lens not more than 600 mm (23.6 inches) below the normal water level and only where the pool installation instructions provide for the deeper hole placement and usage.

Underwater Luminaires for Aboveground Nonstorable Swimming Pools — These luminaires have been investigated for permanent installation through or on the wall of an aboveground nonstorable pool. The information provided above for underwater luminaires for aboveground storable swimming pools regarding installation depth and using an existing hole or cutting a new hole for installation also applies to underwater luminaires for aboveground nonstorable swimming pools.

Convertible Underwater Luminaires for Aboveground Swimming Pools — These luminaires are initially configured as an underwater luminaire for aboveground storable swimming pool for use as described above. They include provisions for the one-time field conversion of the luminaire to an underwater luminaire for aboveground nonstorable swimming pool for use as described above. Once converted, these luminaires are not suitable for being modified back to their original configuration.

Fiber Optic Luminaires for Swimming Pools and Spas — These luminaires consist of a lamp/electrical enclosure that has been investigated for permanent mounting not less than 1.5 m (5 ft) from the pool or spa wall and a fiber optic element and associated fittings to transmit the light to the pool or spa. The lamp/electrical enclosure has been investigated for installation above the level at which water splashed from the pool or spa or from another source may collect.

SUPPLY-CIRCUIT CURRENT RATING

An underwater luminaire for aboveground storable swimming pools has been investigated for connection to the branch circuit specified in the CEC for receptacles having a blade configuration corresponding to the blade configuration of the luminaire attachment plug. For all other luminaires, unless marked to identify a permitted greater or required lower maximum supply-circuit current rating, a luminaire with a voltage and current rating shown in the table below has been investigated for installation on a supply circuit rated not more than as specified in the table. A luminaire with a voltage or current rating not covered by the table is marked to identify the maximum supply-circuit current rating for its installation.

Maximum Current Rating for Supply Circuit (Except as Specified in Preceding Paragraph)

Luminaire Voltage Rating	Luminaire Current Rating	Max Current Rating for Luminaire Supply Circuit
15 V ac or less	25 A or less	25 A
110 V ac – 120 V ac	16 A or less	20 A
110 V ac – 120 V ac	More than 16 A, not more than 24 A	30 A

RELATED PRODUCTS

See Submersible Luminaires Certified for Canada (IFEV7) for underwater luminaires intended for use in fountains and similar water-containing vessels not intended to accommodate the complete or partial immersion of persons.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate wet-niche swimming pool luminaires, forming shells and dry-niche swimming pool luminaires in this category is CAN/CSA-C22.2 No. 89, "Swimming-Pool Luminaires, Submersible Luminaires and Accessories."

The basic standard used to investigate luminaires for aboveground swimming pools and spas is CSA-C22.2 No. 9.0, "General Requirements for Luminaires," including the requirements contained in CSA Technical Information Letter No. B-44, "Interim Certification Requirements for Permanently Connected, Cord-Connected and Direct Plug-In Lighting Systems Incorporating Nicheless Luminaire Assemblies that Employ Extra-Low Voltage Incandescent Lamps for Use in Pools."

The basic standards used to investigate fiber optic luminaires for swimming pools and spas are CSA-C22.2 No. 9.0 and CAN/CSA-C22.2 No. 218.1, "Spas, Hot Tubs and Associated Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate:

- "Dry-niche Underwater Luminaire for Swimming Pool"
- "Rebuilt Dry-niche Underwater Luminaire for Swimming Pool"
- "Wet-niche Underwater Luminaire for Swimming Pool"

Luminaires and Forming Shells Certified for Canada (WBDT7)−*Continued*

- "Rebuilt Wet-niche Underwater Luminaire for Swimming Pool"
- "Forming Shell (or Housing) for Wet-niche Luminaire"
- "Underwater Luminaire for Aboveground Storable Swimming Pool"
- "Underwater Luminaire for Aboveground Nonstorable Swimming Pool"
- "Convertible Underwater Luminaire for Aboveground Swimming Pool"
- "Fiber Optic Luminaire for Swimming Pool"
- "Underwater Luminaire Accessory"

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HEATERS CERTIFIED FOR CANADA (WBRR7)

USE

This category covers heaters intended for permanent installation in or adjacent to swimming pools or spas in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

These products have not been investigated for outdoor use unless they are marked "For Outdoor Use," or equivalent, in which case they are acceptable for both outdoor and indoor use.

RELATED PRODUCTS

Heaters intended for use with hydromassage bathtubs are covered under Hydromassage Bathtubs Certified for Canada (NCHX7).

Heat-pump-type units are covered under Heating and Cooling Equipment Certified for Canada (LZFE7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA B140.12 (1976), "Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools," and CSA-C22.2 No. 64 (1991), "Household Cooking and Liquid-Heating Appliances."

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Swimming Pool Heater" or "Spa Heater."

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HOT TUB AND SPA EQUIPMENT ASSEMBLIES CERTIFIED FOR CANADA (WBYQ7)

USE AND INSTALLATION

This category covers equipment assemblies intended for use with non-self-contained spas and hot tubs, rated 250 V or less, for household or commercial use. These products are marked to indicate their suitability for use either indoors or outdoors (Type 3) or indoors only (Type 2).

This category also covers equipment assemblies that do not contain a water heater and do not contain a water temperature-regulating control or a water temperature-limiting control. A water heater, a temperature-regulating control and a temperature-limiting control should be provided in the final installation and their adequacy determined by the Authority Having Jurisdiction.

Equipment assemblies are prepackaged combinations of various components, such as pumps, filters, heaters, blowers, lights and controls, and are designed for use with field-supplied tubs. Equipment assemblies are designed for installation and use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Equipment assemblies should be installed at least 1.5 m from the inside walls of a spa or hot tub and be connected by nonmetallic pipe only.

Hot Tub and Spa Equipment Assemblies Certified for Canada (WBYQ7)−*Continued*

Equipment assemblies have not been investigated for below-grade installation.

Equipment assemblies have not been investigated for use within an outer enclosure or under the skirt of a spa or hot tub unless so marked.

Equipment assemblies that contain a gas-fired water heater have not been investigated for indoor use, for use within an outer enclosure, or for use under the skirt of a spa or hot tub unless so marked.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 218.1 (1989), ''Spas, Hot Tubs, and Associated Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Equipment Assembly for Spa/Hot Tub,'' ''Hot Tub Equipment Assembly'' or ''Spa Equipment Assembly.''

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DECK BOXES CERTIFIED FOR CANADA (WCEZ7)

USE AND INSTALLATION

This category covers deck boxes (also known as swimming pool junction boxes) intended for direct conduit connection to the forming shells of wet-niche luminaires for pools as described in Section 68 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

Rule 68-000 of the CEC considers a pool to be the following:

1. Permanently installed and storable swimming pools
2. Hydromassage bathtubs
3. Spas and hot tubs
4. Wading pools
5. Baptismal pools
6. Decorative pools

Deck boxes have been investigated for indoor and outdoor installation.

Deck boxes are intended for installation above the normal water level of the pool, with the top of the deck box at or above the finished level of the pool deck, and located in such a manner that any water on the deck will drain away from the deck box.

RELATED PRODUCTS

See Luminaires and Forming Shells Certified for Canada (WBDT7) and Submersible Luminaires Certified for Canada (IFEV7) for wet-niche luminaires intended for use underwater in pools and fountains, respectively.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 89 (1976), ''Swimming-Pool Luminaires, Submersible Luminaires and Accessories,'' and Section 68, ''Pools, Tubs, and Spas,'' of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Deck Box.''

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OZONE GENERATORS CERTIFIED FOR CANADA (WCKA7)

USE AND INSTALLATION

This category covers ozone generators rated 600 V or less, intended for use in the treatment of nonpotable water in swimming pools, and in spas and hot tubs of other than the self-contained type. They have been investigated with respect to risk of electric shock, fire and mechanical injury only.

These products are marked to indicate their suitability for use either indoors or outdoors (marked with ''CSA enclosure 3'') or indoors only (marked with ''CSA enclosure 2'').

Ozone generators involve features of installation and use not ordinarily present in electrical utilization equipment. Such features are covered in the manufacturer's installation instructions. The installation is intended to be in accordance with the manufacturer's instructions furnished with the equipment and the requirements of the Authority Having Jurisdiction.

FACTORS NOT INVESTIGATED

Compliance with any applicable Canadian regulations governing the control of ozone emission from ozone generators under conditions of normal and abnormal operation has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 218.1 (1989), ''Spas, Hot Tubs, and Associated Equipment.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

OZONE GENERATOR
IN ACCORDANCE WITH CANADIAN STANDARDS ASSOCIATION'S STANDARD NO. CAN/CSA C22.2 NO. 218.1-M89 WITH RESPECT TO RISKS OF ELECTRIC SHOCK, FIRE AND MECHANICAL INJURY ONLY
Control No.

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PUMPS CERTIFIED FOR CANADA (WCSX7)

GENERAL

This category covers pumps for circulating the water in swimming pools, hot tubs and spas. These products are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These products are marked for outdoor (weatherproof) or indoor (dripproof) use.

Pumps investigated for permanently installed pools are so identified and are additionally marked ''Insulated Wet End Pump.'' Permanently installed pool pumps are intended to be permanently connected to the water circulation system and are permanently wired. Permanently installed pool pumps are provided with an accessible pressure-wire connector for equipotential bonding.

Cord-and-plug connected poolside pumps (storable pool pumps) are intended to be connected to a water circulation system constructed so that the pump may be readily disassembled from the system for storage and future reassembly to its original integrity. Cord-and-plug-connected poolside pumps (storable pool pumps) are provided with a minimum 25 ft (7.62 m) nondetachable power-supply cord terminating in a grounding-type attachment plug, are double insulated, have no accessible grounded metal parts, have inaccessible noncurrent-carrying metal parts connected to the grounding conductor of the power-supply cord, and do not have an equipotential bonding connector.

These pumps may be provided with integral filters. The suitability of the filters to clean water has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 108, ''Liquid Pumps.''

UL MARK

Pumps Certified for Canada (WCSX7)−*Continued*

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Swimming Pool Pump,'' ''Spa Pump'' or ''Swimming Pool or Spa Pump,'' or other appropriate product name as shown in the individual Listings.

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SELF-CONTAINED SPAS CERTIFIED FOR CANADA (WCZW7)

USE AND INSTALLATION

This category covers self-contained spas for aboveground use and for household or commercial use. These spas are not designed or intended to have the water drained after each use. They are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

A self-contained spa is a continuous-duty appliance in which all control, water-heating and water-circulating equipment is an integral part of the product, located entirely under the spa skirt.

Self-contained spas may be provided with electric or gas heaters. Spas with gas heaters are intended for permanent wiring and permanent installation, and are intended for outdoor use only.

These products are marked to indicate their suitability for use with either indoors or outdoors (type 3) or indoors only (type 2).

Each spa is provided with a marking on the wiring diagram in the field-wiring compartment or in the installation instructions or on a separate configuration sheet, to identify the major components of the spa when manufactured. The configuration sheet and the installation instructions are intended to be available during installation and inspection.

Self-contained spas may be shipped completely assembled or in knockdown form.

Knockdown spas are packaged by major component in multiple cartons to aid in shipping. They consist of a completely assembled and plumbed tub and an equipment package. The skirt may be attached to the tub or it may be provided in prefabricated sections for assembly in the field. The equipment package is completely assembled, pre-wired and plumbed. Connections are made by union fittings or similar quick-disconnect plumbing that does not require tools or special materials. All cartons used to ship a knockdown spa are marked to indicate the contents, the spa model, and the total number of required cartons.

RELATED PRODUCTS

Hydromassage bathtubs are covered under Hydromassage Bathtubs Certified for Canada (NCHX7).

Factory-made assemblies of pumps, heaters, blowers, lights and controls intended for use with field-supplied hot tubs and spas are covered under Hot Tub and Spa Equipment Assemblies Certified for Canada (WBYQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 218.1 (1989), ''Spas, Hot Tubs, and Associated Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Self Contained Spa.''

* *

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SWIMMING POOL AND SPA COVER OPERATORS, ELECTRIC CERTIFIED FOR CANADA (WDDJ7)

USE AND INSTALLATION

Swimming Pool and Spa Cover Operators, Electric Certified for Canada (WDDJ7)−*Continued*

This category covers electrically driven cover operators intended for use with swimming pools and spas, together with controls for use with such operators. The cover operators generally consist of a motor-driven apparatus used to move the covering material. These operators are intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' These products are marked to indicate their suitability for both indoor and outdoor (type 3) use.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 218.1 (1989), ''Spas, Hot Tubs, and Associated Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Swimming Pool Cover Operator,'' ''Spa Cover Operator'' or ''Pool Cover Operator.''

* *

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SWIMMING POOL AND SPA TRANSFORMERS CERTIFIED FOR CANADA (WDGV7)

USE

This category covers enclosed transformers intended for use in residential or commercial spas, hydromassage bathtubs, swimming pools, or other products that involve immersed persons. Spas and hydromassage bathtubs are intended for use in unclassified locations. They are intended to be permanently connected to a plumbing system and building structure, and permanently installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' specifically:

- Permanent connection to a single- or three-phase branch circuit rated 150 V or less to ground; or
- Connection by means of a factory-installed power-supply cord having a 15 A 125 V attachment-plug cap.

These transformers provide either one level or two levels of protection (electrical isolation) in accordance with CSA-C22.2 No. 218.1, ''Spas, Hot Tubs, and Associated Equipment,'' and CAN/CSA-C22.2 No. 218.2, ''Hydromassage Bathtub Appliances.''

These products are provided with a power-supply cord or have provisions for conduit connection to the branch-circuit supply. Transformers not provided with a power-supply cord are provided with leads with a length of 150 mm or more and are not smaller than 18 AWG. Wire connectors for wire terminations comply with the requirements in CAN/CSA-C22.2 No. 65, ''Wire Connectors.''

These products have not been investigated for outdoor use, unless marked ''For Outdoor Use'' or equivalent, in which case they are acceptable for both outdoor and indoor use.

PRODUCT MARKINGS

These transformers are marked with:

1. The primary voltage(s), and frequency (if other than 60 Hz)
2. The number of phases, if other than single-phase
3. All secondary voltages
4. The secondary capacity in amperes or volt-amperes

Special-purpose enclosures, such as drip-tight, weatherproof, water-tight or dust-tight, or enclosures suitable for outdoors are marked as required by CAN/CSA-C22.2 No. 94.2, ''Enclosures for Electrical Equipment, Environmental Considerations.''

RELATED PRODUCTS

See General-purpose Transformers Certified for Canada (XPTQ7) and Transformers, Class 2 Certified for Canada (XOKV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

Swimming Pool and Spa Transformers Certified for Canada (WDGV7)−*Continued*

The basic standards used to investigate products in this category are CSA-C22.2 No. 218.1 (1989), ''Spas, Hot Tubs, and Associated Equipment,'' and CAN/CSA-C22.2 No. 218.2 (1993), ''Hydromassage Bathtub Appliances.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Fountain Transformer,'' ''Swimming Pool Transformer,'' ''Spa Transformer'' or ''Fountain, Swimming Pool or Spa Transformer.''

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WATER TREATMENT EQUIPMENT CERTIFIED FOR CANADA (WDLC7)

USE AND INSTALLATION

This category covers chlorinators, brominators, ozone generators, ion generators, and similar equipment intended to sanitize water in pools, spas and hot tubs. This category also covers equipment designed to monitor water chemistry in pools, spas and hot tubs, with or without the capability of adding chemicals to the water to adjust water chemistry. These products are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These products are marked to indicate their suitability for use either indoors or outdoors (type 3) or indoors only (type 2). They are provided with an accessible pressure-wire connector for equipotential bonding during installation.

FACTORS NOT INVESTIGATED

The ability of this equipment to sanitize pool and spa water has not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 108 (1989), ''Liquid Pumps.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Swimming Pool Chlorinator,'' ''Spa Chlorinator'' or ''Swimming Pool and Spa Chlorinator,'' or other appropriate product name as shown in the individual Listings.

* *

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SWIMMING POOL AND SPA EQUIPMENT, MISCELLANEOUS CERTIFIED FOR CANADA (WDUT7)

GENERAL

This category covers accessory equipment for swimming pools, hot tubs and spas, such as valves, pool cover operators, and pool cover drain pumps. These products are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These products are marked to indicate their suitability for use either indoors or outdoors (weatherproof, Type 3) or indoors only (drip-proof, Type 2).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Swimming Pool and Spa Equipment, Miscellaneous Certified for Canada (WDUT7)−*Continued*

The basic standards used to investigate products in this category are CSA-C22.2 No. 218.1, ''Spas, Hot Tubs, and Associated Equipment,'' and C22.2 (Series) standards applicable to the type of accessory.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Pool Cover Operator,'' ''Pool Valve Actuator'' or ''Pool Freeze Protector,'' or other appropriate product name as shown in the individual Listings.

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SUCTION FITTINGS FOR SWIMMING POOLS, WADING POOLS, SPAS AND HOT TUBS CERTIFIED FOR CANADA (WEBS7)

USE AND INSTALLATION

This category covers suction fittings intended for use in swimming pool, wading pool, spa, hot tub, and hydromassage (whirlpool) bathtub installations.

These fittings have been investigated for resistance to hair, body, finger and limb entrapment.

Suction fittings have been investigated for both indoor and outdoor use unless marked for indoor use only. They are intended to be installed following the instructions that are packaged with each fitting.

Self-contained spa fittings are intended only for installation in self-contained, factory-produced spas. They are intended for plumbing with at least two fittings per pump.

RATINGS

Each suction fitting is marked with a waterflow rate in gallons per minute. This rate should equal or exceed the maximum flow rate of the pump(s) used in the water circulating system.

PRODUCT MARKINGS

These fittings are marked with the intended installation position: ''Wall Only,'' ''Floor Only'' or ''Wall or Floor.'' They may additionally be marked with the statement, ''For Single or Multiple Drain Use,'' ''For Single Drain Use'' or ''For Multiple Drain Use Only.''

Self-contained spa fittings are marked ''For Use in Self-Contained Factory Manufactured Spas Only'' and ''For Multiple Outlet Use Only.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standards used to investigate products in this category are ANSI/APSP-16 (2011), ''Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs,'' CSA B125 (1993), ''Plumbing Fittings,'' and CSA-C22.2 No. 218.2 (1993), ''Hydromassage Bathtub Appliances.''

Note: Fittings complying with ANSI/APSP-16 are also considered to comply with ANSI/ASME A112.19.8b (2009), ''Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Swimming Pool Suction Fitting'' (or ''Sw Pool Sctn Ftn'').

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SWITCHBOARDS CERTIFIED FOR CANADA (WEIR7)

SWITCHBOARDS, DEAD-FRONT CERTIFIED FOR CANADA (WEVZ7)

GENERAL

This category covers dead-front switchboards rated 600 V or less. Switchboards are large single panels, structural frames or assemblies of panels or structural frames on which may be mounted, on the face or back or both: switches, overcurrent, and other protective devices, buses, and instruments. Switchboards may be accessible from the rear as well as from the front and are not intended to be installed in cabinets.

A **switchboard section** is that portion of a switchboard which is prevented by the structural framework from being physically separated into smaller units. Framework that is welded or joined with steel rivets over 6.4 mm in diameter is considered to constitute a single section.

A **switchboard enclosure** is intended to enclose one or more switchboard sections or switchboard interiors, or is intended to provide auxiliary wiring space for an adjacent switchboard section.

A **switchboard interior** is intended to be field installed in a switchboard enclosure to become the equivalent of a dead-front switchboard section.

USE, INSTALLATION AND RATINGS

Electrical Ratings

Each switchboard section is marked with the current rating of the supply bus. Within a group of sections, a through or splice bus is not required to be marked with its rating. The ampacity of the through bus and supply bus supplying the next section may be reduced but should not be less than the supply rating of the next section. The current rating of the through and splice bus in the last section of a group (which might be used in the future to supply an additional section) is shown in the switchboard section marking if the through or splice bus rating is less than the supply rating of that section. The current rating of the section bus is also included in the marking. The adequacy of the supply, through, splice, or section bus current rating with respect to the calculated load current using the appropriate diversity factors noted in Section 8 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), can only be determined by the Authority Having Jurisdiction (AHJ) at the final installation.

Short-circuit Ratings

Dead-front switchboard sections or interiors are marked with their short-circuit-current rating in rms symmetrical short-circuit current rating in amps. The marking states that short-circuit ratings are limited to the lowest short-circuit rating of (1) any switchboard section connected in series, or (2) the lowest interrupting rating of any device installed or intended to be installed therein. However, for combination series-connected devices, the short-circuit-current rating marked on the switchboard may be higher than the interrupting rating of a specific circuit breaker installed or intended to be installed in the switchboard. This higher rating is valid only if the specific overcurrent devices identified in the marking are used within or ahead of the switchboard in accordance with the marked instructions. In many cases the short-circuit ratings are associated with instructions for securing supply wiring within the switchboard.

Service Equipment

The marking "Suitable for Use as Service Equipment" appears on each switchboard section or switchboard interior containing one or more service disconnects optionally intended for use at a service.

A switchboard section or interior marked for use at services as indicated above may also be used to provide the main control and means of cutoff for a separately derived system or a separate building.

Some switchboard sections or interiors incorporate neutrals factory bonded to the enclosure. Such units are marked "Suitable only for Use as Service Equipment."

Ground-fault Protection

Some switchboard sections may be provided with ground-fault protection for services or major feeders. The circuit(s) so protected are identified by a marking such as on a wiring diagram or on the relaying equipment. Instructions are provided for on-site testing of the ground-fault protection at the time of installation.

Overcurrent Protection

Where in normal operation the load will continue for three hours or more, molded-case circuit breakers and fused switches other than fused power circuit devices should not be loaded to exceed 80% of their current rating unless the device is otherwise marked. Low-voltage ac power switching devices (see PAPU7) and fused power circuit devices (see IYSR7) used in switchboards are suitable for continuous use at 100% of their rating.

Field-installed Equipment

A switchboard section or interior may have provision for field installation of additional suitable equipment such as branch, splice or through buses, meter socket bases, circuit breakers, switches, panelboards, and terminal connectors. The switchboard section or interior is marked with the name or trademark of the manufacturer and the catalog number or

Switchboards, Dead-front Certified for Canada (WEVZ7)−*Continued*

equivalent of such equipment that is intended to be installed in the field. A switchboard section or interior may also have provision for utility-installed current transformers and metering equipment.

Installation

A switchboard section or enclosure investigated to determine that it is rainproof is marked "Type 3R" and may also be marked "Rainproof."

A section or enclosure suitable for connection to a busway is marked to indicate the manufacturer and type of busway.

The acceptability of conduit stubs serving unit sections, with respect to wiring space and spacing from live parts, can be determined only by the AHJ at the final installation.

In some cases, field drilling of holes in the ground bus may be needed to add additional grounding terminals.

Field Terminations

Dead-front switchboard sections covered under this category are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Aluminum conductors may be used if such marking is independent of any marking on terminal connectors and if it appears on a wiring diagram or other readily visible location.

Unless the equipment is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14–1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger, as specified in Tables 2 and 4 of the CEC. Termination provisions are determined based on values provided in Tables 2 and 4, with no adjustment made for correction factors.

RELATED PRODUCTS

Single panels or groups of panel units designed for assembly in the form of a single panel, including buses and automatic overcurrent devices, and equipped with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall, partition, or other support; and accessible only from the front are covered under Panelboards Certified for Canada (QEUY7).

Theater switchboards, incandescent lighting switchboards with dimmers, and laboratory switchboards are covered under Switchboards, Special Purpose Certified for Canada (WFJX7).

Distribution equipment, the sole function of which is the automatic or nonautomatic transferring of one or more load conductor connections from one power source to another, is covered under Transfer Switches Certified for Canada (WPTZ7).

Factory-wired assemblies of industrial control equipment intended to control industrial processes are covered under Industrial Control Panels Certified for Canada (NITW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 244, "Switchboards."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Dead Front Switchboard Section," "Switchboard Interior" or "Switchboard Enclosure." The Listing Mark for dead-front switchboard sections includes the statement "____ of ____." The first space is stamped with a number indicating the position that the section occupies in the series of sections constituting the switchboard. The second space is stamped with the total number of sections in the switchboard (including sections not bearing a UL Listing Mark).

The Listing Mark covers only the section so marked; it does not cover other sections included in the complete switchboard.

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SWITCHBOARDS, SPECIAL PURPOSE CERTIFIED FOR CANADA (WFJX7)

USE, INSTALLATION AND MARKINGS

This category covers theater switchboards, incandescent lighting switchboards with dimmers, and laboratory switchboards rated 600 V or less.

These switchboards are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum

Switchboards, Special Purpose Certified for Canada (WFJX7)−*Continued*

conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Unless the equipment is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14–1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger, as specified in Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Termination provisions are determined based on values provided in Table 310.16, with no adjustment made for correction factors.

Short-circuit Rating

Special purpose switchboards are marked with their short-circuit-current rating in rms symmetrical amps. The marking states that short-circuit ratings are limited to the lowest interrupting rating of any device installed or intended to be installed therein. However, for combination series-connected devices, the short-circuit-current rating marked on the switchboard may be higher than the interrupting rating of a specific circuit breaker installed or intended to be installed in the switchboard. This higher rating is valid only if the specific overcurrent devices identified in the marking are used within or ahead of the switchboard in accordance with the marked instructions. In the case of rack-type theater-dimming switchboards with removable modules, the rating may depend on the use of specific dimming modules. These dimming modules are marked on the switchboard. In many cases the short-circuit ratings are associated with instructions for securing supply wiring within the switchboard.

Duty Rating

Theater-dimming switchboards have been investigated to operate continuously at 100% of their marked input rating.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, "Industrial Control Equipment," and CSA-C22.2 No. 29, "Panelboards and Enclosed Panelboards."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Laboratory Switchboard," "Theater Switchboard" or "Incandescent Lighting Switchboard," or other appropriate product name as shown in the individual Listings.

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SWITCHES CERTIFIED FOR CANADA (WFXV7)

PULLOUT SWITCHES, DETACHABLE TYPE CERTIFIED FOR CANADA (WGEU7)

USE AND INSTALLATION

This category covers enclosed switches having detachable pullout heads, with or without fuseholders, for cartridge fuses. These switches may be enclosed or nonenclosed.

Nonenclosed switches are intended for use in other assemblies, such as panelboards or the like.

Enclosed pullout switches that are rain-tight or rainproof are marked accordingly.

These pullout switches are intended for use with copper conductors unless marked to indicate that certain terminals are suitable for use with aluminum conductors. Such markings are independent of any marking on the terminal connectors and appear on a wiring diagram or other readily visible location.

Unless a switch is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14 – 1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Termination provisions are determined based on values provided in these tables, with no adjustment made for correction factors.

RATINGS

Ratings of enclosed or nonenclosed pullout switches are limited to 600 V or less, 400 A or less.

Pullout Switches, Detachable Type Certified for Canada (WGEU7)−*Continued*

Switches without fuseholders (unfused) have been tested to determine their acceptability for continuous operation at their marked rated load.

Fused pullout switches are marked "Continuous load current not to exceed 80 percent of the rating of fuses employed in other than motor circuits."

Pullout switches with horsepower ratings in addition to amp ratings are suitable for use in motor circuits as well as for general use. Pullout switches with amp ratings only are suitable for general use only.

Pullout switches rated higher than 100 hp are restricted to use as motor disconnecting means and are not intended for use as motor controllers.

Motor-circuit pullout switches are intended for use only in motor circuits and are marked "Enclosed Motor-Circuit Pullout Switch."

Horsepower ratings are associated with particular voltages and number of phases. A horsepower-rated switch is not intended for use with motors on circuits having voltages or number of phases different from that shown on the marking.

Some pullout switches have dual horsepower ratings, the larger of which is based on the use of fuses with time delay appropriate for the starting characteristics of the motor. Switches with such horsepower ratings are marked to indicate this limitation and are tested at the larger of the two ratings.

Switches marked "Suitable For Use On A Circuit Capable of Delivering Not More Than ___ Amps, RMS, Symmetrical, ___ Volts Maximum: Use Class ___ Fuses" have been investigated for the additional rating indicated.

RELATED PRODUCTS

Products with similar uses are covered under Switches, Enclosed Certified for Canada (WIAX7), Motor Controllers, Manual Certified for Canada (NLRV7), Switches, Dead-front Certified for Canada (WHXS7) and Switches, Open Type Certified for Canada (WHTY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 29, "Panelboards and Enclosed Panelboards."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Pullout Switch," "Enclosed Pullout Switch," "Motor Circuit Pullout Switch" or "Enclosed Motor Circuit Pullout Switch."

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SWITCHES, AUTOMATIC CERTIFIED FOR CANADA (WGLT7)

Switches, Clock Operated Certified for Canada (WGZR7)

GENERAL

This category covers clock-operated switches. They may be marked with the following:

- Manufacturer's name, trademark or identifier (visible after installation)
- Model number (visible after installation)
- Factory code (if the device is produced at more than one location)
- Electrical ratings, including: volts, hertz, amps, load type (visible after installation)
  - Lamp load maximum ratings are indicated or is one-tenth of the full amp rating
- Electrical loads, when applicable, are indicated as follows:
  - "Tungsten " (or "T") for tungsten-filament-lamp loads
  - "Resistance only" (or "R") for noninductive resistance loads
  - "Inductive" (or "H") for inductive loads, such as IT equipment and appliances
  - "Pilot duty" (or "PD") for magnet-coil loads
- Clock-operated switches marked "Replace with Type HPN cord only" are suitably rated for SP-2 replacement cord

Permanently connected devices may be marked as follows:

Switches, Clock Operated Certified for Canada (WGZR7)−*Continued*

Terminals are identified so that it is obvious how to connect the conductors or correspond to the wiring diagram (provided with the device).

"For supply connections, use ____ AWG or larger wires suitable for at least ____°C (____°F)," or equivalent. If no wire size is provided, 14 AWG was used; if no temperature is provided, 60°C wire was used.

"AL" or "Use aluminum wire only" identifies terminals for aluminum supply wire only.

"CU" or "Use copper wire only" identifies terminals for copper supply wire only.

"CU-AL" or "AL-CU" or "Use copper or aluminum wire" identifies terminals for copper or aluminum supply wire.

"Use copper wire only except at terminals ____" identifies a specific terminal wired to a conductor other than copper. Identification of specific terminals is required.

RATINGS

Clock-operated switches are rated for ac, dc, or both, and may be rated up to 600 V.

RELATED PRODUCTS

Appliance switches investigated to CAN/CSA-C22.2 No. 61058-1, "Switches for Appliances – Part 1: General Requirements," and special-use switches investigated to CSA-C22.2 No. 55, "Special Use Switches," are covered under Switches, Appliance and Special Use Certified for Canada (WOYR8).

General-use snap switches or flush-mounted switches installed in a wiring system per CAN/CSA-C22.1, "Canadian Electrical Code, Part I," are covered under Switches, Flush Certified for Canada (WMUZ7).

Manual motor controllers are covered under Motor Controllers, Manual Certified for Canada (NLRV7).

Switches for industrial applications are covered under Power Circuit and Motor-mounted Apparatus Certified for Canada (NMTR7).

Nonindustrial photoelectric switches for lighting control and/or motion-sensitive switches intended for nonindustrial applications are covered under Switches, Photoelectric Certified for Canada (WJCT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 14, "Industrial Control Equipment," and CAN/CSA-C22.2 No. 177, "Clock-Operated Switches."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Clock Operated Switch" or "Timer Switch."

The Listing Mark for this category requires the use of a holographic label.

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SWITCHES, OPEN TYPE CERTIFIED FOR CANADA (WHTY7)

USE AND INSTALLATION

This category covers open-type switches without an enclosure that are provided with a handle operator. These switches may be provided with fuseholders for plug- or cartridge-type fuses. These switches are intended for installation in a panelboard, switchboard, motor control center, industrial control panel or the like, or for installation in a certified cabinet or a cutout box in accordance with the switch installation instructions or without an enclosure where acceptable.

These switches are intended to be mounted in enclosures such that they are manually operable by means of an external handle without opening the enclosure. Externally operated handles mounted to the sidewall of an enclosure or through the cover of an enclosure are intended to be installed in accordance with the switch installation instructions.

These switches are intended or use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Unless a switch is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14 – 1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in

Switches, Open Type Certified for Canada (WHTY7)−*Continued*

Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Termination provisions are determined based on values provided in these tables, with no adjustment made for correction factors.

RATINGS

Switches without fuseholders (unfused) have been tested to determine their acceptability for continuous operation at their marked rated load.

Fused switches are marked "Continuous load current not to exceed 80 percent of the rating of fuses employed in other than motor circuits."

Ratings of certified open-type switches are limited to 4000 A, 500 hp, 600 V. Open-type switches rated at more than 1200 A at 250 V or less, and switches rated at more than 600 A at more than 250 V are available in two classes, one intended for general use and the other intended for isolating use only. Switches intended for isolating use only are marked "For Isolating Use Only – Do Not Open Under Load."

Open-type switches with horsepower ratings in addition to ampere ratings are suitable for use in motor circuits as well as for general use. Open-type switches with ampere ratings only are intended for general use only. Open-type motor circuit switches are intended for use only in motor circuits and are marked "Motor-Circuit Switch."

Open-type switches rated higher than 100 hp are restricted to use as motor disconnecting means and are not for use as motor controllers.

Ratings of certified open-type motor circuit switches are limited to 500 hp, 600 V.

Horsepower ratings are associated with particular voltages and number of phases. A switch is not intended for use with motors on circuits having voltages or number of phases different from that shown on the marking.

Some open-type switches have dual horsepower ratings, the larger of which is based on the use of fuses with a time delay appropriate for the starting characteristics of the motor. Switches with such horsepower ratings are marked to indicate this limitation and are tested at the larger of the two ratings.

Switches are marked with their short-circuit current rating(s) in rms symmetrical amps.

RELATED PRODUCTS

Products with similar uses are covered under Switches, Enclosed Certified for Canada (WIAX7), Switches, Molded Case Certified for Canada (WJAZ7), Motor Controllers, Manual Certified for Canada (NLRV7), Pull-out Switches, Detachable Type Certified for Canada (WGEU7) and Switches, Dead-front Certified for Canada (WHXS7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 4 (2004), "Enclosed and Dead-Front Switches."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Open Type Switch" or "Open Type Motor-Circuit Switch."

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SWITCHES, DEAD-FRONT CERTIFIED FOR CANADA (WHXS7)

USE AND INSTALLATION

This category covers dead-front switches having all current-carrying parts enclosed when mounted in an enclosed panelboard, dead-front switchboard or the like. These switches may be provided with fuseholders for plug- or cartridge-type fuses. These switches are manually operable by means of external handles without opening the enclosure or are hinged pullout switches.

Switches without fuseholders (unfused) have been tested to determine their acceptability for continuous operation at their marked rated load.

Fused switches are marked "Continuous load current not to exceed 80 percent of the rating of fuses employed in other than motor circuits."

These dead-front switches are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Unless a switch is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14 – 1 AWG,

Switches, Dead-front Certified for Canada (WHXS7)−*Continued*

and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Termination provisions are determined based on values provided in these tables, with no adjustment made for correction factors.

RATINGS

Ratings of certified dead-front switches are limited to 4000 A, 500 hp, 600 V. Dead-front switches rated at more than 1200 A at 250 V or less, and switches rated at more than 600 A at more than 250 V are available in two classes, one intended for general use and the other intended for isolating use only. Switches intended for isolating use only are marked "For Isolating Use Only – Do Not Open Under Load."

Dead-front switches with horsepower ratings in addition to ampere ratings are suitable for use in motor circuits as well as for general use. Dead-front switches with ampere ratings only are intended for general use only.

Some hinged pullout switches achieve an "off" position only by leaving the door open. These switches are restricted to use only as a single main in a panelboard or the like and are rated not higher than 200 A and 250 V.

Dead-front switches rated higher than 100 hp are restricted to use as motor disconnecting means and are not for use as motor controllers.

Enclosed motor-circuit switches are intended for use only in motor circuits and are marked "Motor-circuit Switch."

Ratings of certified dead-front motor-circuit switches are limited to 500 hp, 600 V.

Horsepower ratings are associated with particular voltages and number of phases. A switch is not intended for use with motors on circuits having voltages or number of phases different from that shown on the marking.

Some dead-front switches have dual horsepower ratings, the larger of which is based on the use of fuses with a time delay appropriate for the starting characteristics of the motor. Switches with such horsepower ratings are marked to indicate this limitation and are tested at the larger of the two ratings.

Switches are marked with their short-circuit current rating(s) in rms symmetrical amps.

RELATED PRODUCTS

Products with similar uses are covered under Enclosed Switches Certified for Canada (WIAX7), Motor Controllers, Manual Certified for Canada (NLRV7), Pullout Switches, Detachable Type Certified for Canada (WGEU7) and Switches, Open Type Certified for Canada (WHTY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 4 (2004), "Enclosed and Dead-Front Switches."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Dead-front Switch," "Dead-front Motor-circuit Switch" or "Hinged Pullout Switch."

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SWITCHES, ENCLOSED CERTIFIED FOR CANADA (WIAX7)

USE AND INSTALLATION

This category covers enclosed switches and enclosed motor-circuit switches that are externally operable without opening the enclosure. These switches may be provided with fuseholders for plug- or cartridge-type fuses and may be electrically tripped.

These switches are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Unless a switch is marked to indicate otherwise, the termination provisions are based on the use of 60°C ampacities for wire sizes 14 – 1 AWG, and 75°C ampacities for wire sizes 1/0 AWG and larger as specified in Tables 2 and 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Termination provisions are determined based on values provided in these tables, with no adjustment made for correction factors.

RATINGS

Switches without fuseholders (unfused) have been tested to determine their acceptability for continuous operation at their marked rated load.

Switches, Enclosed Certified for Canada (WIAX7)−*Continued*

Enclosed switches identified with an Enclosure Type designation are intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Fused enclosed switches are marked "Continuous load current not to exceed 80 percent of the rating of fuses employed in other than motor circuits."

Ratings of certified enclosed switches are limited to 4000 A, 500 hp, 600 V. Enclosed switches rated at more than 1200 A at 250 V or less, and switches rated at more than 600 V at more than 250 V are available in two classes, one intended for general use and the other intended for isolating use only. Switches intended for isolating use only are marked "For Isolating Use Only – Do Not Open Under Load."

Enclosed switches with horsepower ratings in addition to amp ratings are suitable for use in motor circuits as well as for general use. Enclosed switches with amp ratings are intended for general use. Enclosed motor-circuit switches are intended for use only in motor circuits and are marked "Motor-Circuit Switch."

Enclosed switches rated higher than 100 hp are restricted to use as motor disconnecting means and are not for use as motor controllers.

Ratings of certified enclosed motor-circuit switches are limited to 500 hp, 600 V.

Horsepower ratings are associated with particular voltages and number of phases. A switch is not intended for use with motors on circuits having voltages or number of phases different from that shown on the marking.

Some enclosed switches have dual horsepower ratings, the larger of which is based on the use of fuses with a time delay appropriate for the starting characteristics of the motor. Switches with such horsepower ratings are marked to indicate this limitation and are tested at the larger of the two ratings.

Switches are marked with their short-circuit current rating(s) in rms symmetrical amps.

Enclosed switches may also be suitable for use as service switches. Such switches are marked "Suitable for Use as Service Equipment."

RELATED PRODUCTS

Products with similar uses are covered under Switches, Dead-Front Certified for Canada (WHXS7), Motor Controllers, Manual Certified for Canada (NLRV7), Pullout Switches, Detachable Type Certified for Canada (WGEU7) and Switches, Open Type Certified for Canada (WHTY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 4 (2004), "Enclosed and Dead-Front Switches."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Enclosed Switch" or "Enclosed Motor-Circuit Switch."

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SWITCHES, LOAD INTERRUPTER AND ISOLATING, OVER 600 VOLTS CERTIFIED FOR CANADA (WIQG7)

GENERAL

This category covers enclosed medium-voltage load-interrupter and isolating (disconnect) switches and switchgear having nominal ac voltage ratings above 600 V through 46 kV. These switches and switchgear are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Load-interrupter switches are rated up to 3000 A and may be provided with or without fuses. Switches with no load-current-interrupting rating are isolating only. These switches are available in either stationary or draw-out versions.

These switches are generally three-pole devices; however, some switches may be one- or two-pole.

Enclosures may be either ventilated or nonventilated.

An enclosure investigated to determine that it is rainproof is marked "Rainproof," "Outdoor" or "3R."

Unless specifically marked otherwise, this equipment is intended for use on three-phase circuits where the nominal voltage to ground is 0.58 times the line-to-line voltage.

Switches, Load Interrupter and Isolating, Over 600 Volts Certified for Canada (WIQG7)−*Continued*

Each switch or section containing a switch is marked with the rated maximum voltage, rated impulse withstand voltage, rated low-frequency withstand voltage, rated frequency, rated continuous current, momentary current rating and short-time current rating. A load-interrupter switch is also marked with a load-current-interrupting rating.

Load-interrupter switches are marked with a fault close rating. They should not be used on circuits having available fault currents in excess of the fault close rating. When provided with some fuses it may be necessary for the supply circuit to have an available fault current that is less than the fault close rating of the switch due to the limited interrupting ability of the fuses.

Switches provided with fuseholders are marked to indicate the maximum fuse ratings, and may also be marked to indicate the specific type fuse to be used.

This equipment may consist of a single freestanding vertical section or it may consist of several abutting vertical sections intended for interconnection by a horizontal bus. When provided with a horizontal bus, each vertical section is marked with the ampacity of the horizontal bus in amps. Switches intended to be part of such a line-up are provided with a "___ of ___" marking, where the second blank indicates the total number of vertical sections provided (including sections not bearing a UL Listing Mark) and the first blank indicates the position (reading from left to right) of the vertical section bearing the marking. An enclosure which is part of a line-up may be provided as an enclosure only, without switches or bus. These enclosures are intended for the addition of control equipment in the field and are marked as a metal-enclosed switchgear enclosure.

This equipment is investigated for use with bus or 90°C insulated wire at 90°C ampacity.

ARC-RESISTANT LOAD-INTERRUPTER SWITCHGEAR

Switchgear specially designed to provide some degree of protection to an operator, or other personnel in the vicinity of the equipment, from the effects of an internal arc occurring in atmospheric air within the enclosure when the doors and covers are secured as intended may additionally be Classified as arc-resistant switchgear.

Arc-resistant switchgear may be designed to vent overpressure gases either into the surrounding area or through an exhaust duct outside of the building.

Where overpressure gases are vented in the surrounding areas, the arc-resistant switchgear has been investigated for installation in buildings that have sufficient overhead space and minimum distance from adjacent walls to permit venting without reflecting arc products, as specified in the installation instructions provided by the manufacturer.

When provided with an exhaust duct, overhead space and minimum distance from adjacent walls are not specified. Exhaust ducts provided in the installation are intended to be as specified in the installation instructions provided by the manufacturer.

Arc-resistant switchgear is marked with one of the Accessibility Type designations noted below based upon the construction of the switchgear investigated.

Type 1 designates switchgear with arc-resistant construction at the front only.

Type 1B designates switchgear with arc-resistant construction at the front, and the low-voltage control or instrument compartment(s).

Type 2 designates switchgear with arc-resistant construction at the front, sides and rear.

Type 2B designates switchgear with arc-resistant construction at the front, sides, rear and the low-voltage control or instrument compartment(s).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 193 (1983), "High Voltage Full-Load Interrupter Switches," CSA-C22.2 No. 58 (1989), "High-Voltage Isolating Switches," and CSA-C22.2 No. 31 (2010), "Switchgear Assemblies."

Metal-enclosed switchgear Classified as "arc resistant" has additionally been investigated to CSA-C22.2 No. 0.22 (2011), "Evaluation Methods for Arc Resistance Ratings of Enclosed Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Isolating Switch," "Metal-Enclosed Interrupter Switchgear," "Metal Enclosed Switchgear," "Load Interrupter Switch," "Load Interrupter Switchgear," "Metal Enclosed Interrupter Switchgear Enclosure" or "Metal Enclosed Switchgear Enclosure."

Switches, Load Interrupter and Isolating, Over 600 Volts Certified for Canada (WIQG7)−*Continued*

In an assembly of products, the Listing Mark is applied to each vertical section eligible for Listing. The Listing Mark covers only the section so marked; it does not cover other sections included in the complete assembly.

Classification Mark for Arc-resistant Switchgear

The Classification Mark of UL on metal-enclosed switchgear investigated as arc resistant is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark consists of the Listing Mark noted above and the following additional information:

ARC-RESISTANT SWITCHGEAR
ALSO CLASSIFIED IN ACCORDANCE WITH CSA-C22.2 NO. 0.22

The Classification Mark appears on the front of each vertical section eligible for Classification. The Classification Mark covers only the vertical section to which it is affixed; it does not cover other vertical sections included in the assembly, or removable units. Each vertical section of a line-up of abutting vertical sections is provided with a "_____ of _____" marking, where the first blank indicates the position (from left to right) of the vertical section bearing the UL Mark, and the second blank indicates the total number of vertical sections (including sections not bearing the UL Mark).

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SWITCHES, MOLDED CASE CERTIFIED FOR CANADA (WJAZ7)

GENERAL

This category covers fused and unfused molded-case switches, with a maximum voltage rating of 750 V.

The unfused switches are tested to determine their acceptability for continuous operation at their marked rated load.

Unfused switches are tested under overload conditions at six times amp rating to cover motor circuit applications and are suitable for use as motor circuit disconnects per Section 28-602 of CAN/CSA -C22.1, "Canadian Electrical Code, Part I."

Fused switches are tested for interrupting capacity at rated voltage and at six times motor full-load running current for alternating-current ratings, and at four times motor full-load running current for direct-current ratings.

USE AND INSTALLATION

Unfused two-pole molded-case switches marked to indicate suitability for use on 3-phase circuits have been investigated and found suitable for controlling 3-phase, corner-grounded delta circuits.

These switches are for use with copper conductors, unless marked to indicate which terminals are suitable for use with aluminum conductors. Such markings are independent of any markings on terminal connectors and are readily visible.

Unless the device is marked to indicate otherwise, the wiring space and current-carrying capacity are based on the use of 60°C wire where wire sizes 14-1 AWG are used, and 75°C wire where wire sizes 1/0 AWG and larger are used.

Molded-case switches without enclosures are intended for use in certified circuit breaker enclosures, or as a part of other certified equipment or where open type molded-case switches are acceptable.

Some unfused switches have a release mechanism that causes the switch to open automatically to protect itself in the event of a short-circuit current fault. Such switches are marked to indicate that they may open.

Some enclosed molded-case switches may be provided with ground-fault protection for services or major feeders. The circuit(s) so protected will be identified by a marking, such as on a wiring diagram.

Molded-case switches may be mounted in any position.

Line-and-load markings on a molded-case switch are intended to limit the connections to those as marked.

Molded-case switches may be equipped with factory-installed accessories, such as alarm and auxiliary switches, remotely energized electrically operated trip mechanisms and electrical operators.

PRODUCT MARKINGS

No overcurrent protection is provided by the unfused switches and they are marked with a short-circuit current withstand rating.

The fused switches have one or more replaceable fuses to provide overcurrent protection and they are marked with a short-circuit current interrupting rating.

Fused switches are marked "Continuous load current not to exceed 80 percent of the rating of fuses employed."

Switches, Molded Case Certified for Canada (WJAZ7)−*Continued*

Some enclosed molded-case switches are marked as suitable for use as service equipment.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 5 (2002), ''Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Molded-case Switch'' (or ''M.C.S.'') or ''Fused Molded-case Switch'' (or ''Fused M.C.S.'').

* *

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SWITCHES, PHOTOELECTRIC CERTIFIED FOR CANADA (WJCT7)

GENERAL

This category covers photoelectric switches and motion detectors (light-sensitive or presence-sensitive types) intended for use in nonindustrial locations, rated maximum 347 V ac, and protected by branch-circuit protection not to exceed 20 A.

Switches investigated for the control of tungsten-filament-lamp loads are marked ''Tungsten.'' Switches investigated for the control of the applicable ballast loads (such as fluorescent) are marked ''Magnetic Ballast'' or ''Electronic Ballast.''

The investigation of devices identified as ''Raintight'' or ''Rainproof'' includes a test designed to simulate exposure to beating rain to determine that such exposure will not result in the entrance of water. Devices marked ''Raintight'' or ''Rainproof'' are also suitable for wet locations. Devices marked ''Indoor Use Only'' are suitable for indoor dry locations only.

These switches have been tested to determine their acceptability for continuous operation at their marked load rating.

RELATED PRODUCTS

Photoelectric switches and motion detectors designed to provide protection for mercantile premises, stock rooms, safes, vaults, etc., are covered under Intrusion-detection Units Certified for Canada (ANSR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 205 (1983), ''Signal Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Photoelectric Switch'' or ''Motion Detector Switch.''

The Listing Mark for this category requires the use of a holographic label.

* *

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Photocontrols, Plug-in, Locking Type Certified for Canada (WJFX7)

USE

This category covers plug-in, locking-type photocontrols for use on outdoor-type electric lighting fixtures used for both street lighting and area lighting (lighting of parking lots and similar applications).

Unless marked specifically ''Tungsten'' or ''Ballast,'' these products are suitable for use with either type of fixture, at 480 V ac maximum.

Photocontrols, Plug-in, Locking Type Certified for Canada (WJFX7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are:

CAN/CSA-C22.2 No. 4 (1989), ''Enclosed and Dead-Front Switches''
CSA-C22.2 No. 21 (1995), ''Cord Sets and Power Supply Cords''
CSA-C22.2 No. 55 (1986), ''Special Use Switches''
CAN/CSA-C22.2 No. 94 (1991), ''Special Purpose Enclosures''
CSA-C22.2 No. 182.2 (1987), ''Industrial Locking Type, Special Use Attachment Plugs, Receptacles and Connectors''
CAN/CSA-C239 (1994), ''Performance Standard for Dusk-to-Dawn Luminaires''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Photocontroller,'' ''Photocontroller Shorting Plug'' or ''Photocontroller Open Circuit Plug.''

* *

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SNAP SWITCHES CERTIFIED FOR CANADA (WJQR7)

GENERAL

This category covers general-use snap switches, which are so constructed that they can be installed in flush device boxes or on outlet box covers or otherwise used in connection with wiring systems recognized by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

Door switches are investigated for use only in combination with a specific switch, special switch box and cover.

Flush snap switches investigated for use without separate outlet boxes with nonmetallic-sheathed cable, Types NM, NMC, NM-B and NMC-B cable in accordance with the CEC, are so identified by a specific marking on the carton in which they are packed.

Snap switches have not been investigated for switching a load between two alternate sources of supply. Double-throw enclosed switches (see Switches, Enclosed Certified for Canada [WIAX7]) or switches Listed as transfer switches (see Switches, Transfer Certified for Canada [WPTZ7] and Emergency Lighting and Power Equipment Certified for Canada [FTBR7]) should be used for this purpose.

Multi-pole, general-use snap switches have not been investigated for more than single-circuit operation unless marked ''2-circuit'' or ''3-circuit.''

Snap switches without a grounding connection are intended for replacement use only in accordance with the CEC.

General-use snap switches are classified into two categories: AC-DC general use and AC general use. AC general-use switches are marked ''AC,'' ~, or equivalent to limit their use to alternating current circuits. AC-DC general-use switches are not so limited; no such marking is required or generally provided.

AC-DC GENERAL-USE SNAP SWITCHES

The standard amp and voltage ratings for an AC-DC general-use snap switch for controlling direct- or alternating-current circuits are given in Table I. While many of these snap switches will operate successfully on circuits that have some reactance, in general, for inductive loads, the switch should have an amp rating of twice the amp rating of the load except for a snap switch that has been tested for the control of an electric discharge lamp load and marked with the letter ''F'' as part of the electric lamp load rating of 10 A, 125 V. Such a switch may be used without derating where the inductive load is AC and the power factor is between 75% and unity. However, some of these snap switches are marked with additional horsepower ratings at one or more voltages, which indicate that the switch has been tested for the control of a motor of the horsepower and voltage rating indicated. An AC-DC general-use snap switch tested for the control of tungsten-filament lamp loads is marked with the letter ''T'' as part of the suitable tungsten-filament lamp load rating at 125 V.

Table I
Snap Switch Ratings in Amperes Corresponding to Direct-Current Potentials

Snap Switches Certified for Canada (WJQR7)−*Continued*

125 V	250 V	600 V	125 V	250 V	600 V
—	—	1	—	10	—
3*	1*	—	20	10	—
—	—	2	—	20	10
5*	2*	—	—	—	20
—	—	3	—	20	—
5 or 6	3	—	30	20	—
—	5	3	40	20	—
—	—	5	—	30	20
—	5	—	—	—	30
10	5	—	—	30	—
—	10	5	60	30	—
—	—	10	—	60	—

The above ratings apply equally when these switches are used on alternating-current circuits. For two-circuit and three-circuit switches the amp rating applies to the maximum current carried under any combination of circuits.

* These dual ratings may be assigned only to three-way, four-way, two-circuit, or three-circuit switches.

AC GENERAL USE SNAP SWITCHES

An AC general-use snap switch has a marked current and voltage rating only for alternating current, which is one of the ratings given in Table II, and is intended for installation in a flush device box (flush snap switch), mounting on an outlet box cover, or surface mounting (surface snap switch).

AC general-use snap switches are tested for the control of resistive, inductive (including electric discharge lamp) and tungsten-filament lamp loads at 120 V up to the full current rating of the switch.

Table II
AC Snap Switch Ratings in Amperes Corresponding to Alternating-Current Potentials

120 V AC	120 – 277 V AC*	277 V AC	347 V AC
15	—	—	—
20	—	—	—
30	—	—	—
—	15	—	—
—	20	—	—
—	30	—	—
20	—	15	—
30	—	15	—
30	—	20	—
—	—	—	15
—	—	—	20
—	—	—	30

* Switches rated 120 – 277 V AC are acceptable for use on motor circuits up to the amp ratings shown, at any voltage between 120 and 277 V AC.

Snap switches rated 240 or 250 V that are intended for use on circuits involving a nominal potential to ground of 120 or 125 V, respectively, are tested on such circuits and are marked with the voltage rating 240 or 250 (no underlining). Snap switches rated 240 or 250 V that are suitable for use at full potential to ground are marked with the voltage rating $\underline{\underline{240}}$ or $\underline{\underline{250}}$ (double underlining). Snap switches having voltage ratings other than 240 or 250 V are tested on circuits involving full rated potential to ground.

Terminals of 15 A and 20 A switches not marked "CO/ALR" are intended for use with copper conductors only. Terminals marked "CO/ALR" are for use with aluminum and copper conductors.

Terminals of the wire-binding screw, setscrew, or screw-actuated back-wired clamping types are suitable for use with solid building wires unless otherwise indicated either on the device or in the installation instructions.

Screwless terminal connectors of the conductor push-in type (also known as "push-in terminals") are restricted to 15 A branch circuits and are intended for connection with 14 AWG solid copper wire only. They are not intended for use with aluminum wire, 14 AWG stranded copper wire, or 12 AWG solid or stranded copper wire.

Terminals of switches rated 30 A and above not marked "AL-CU" are intended for use with copper conductors only. Terminals of switches rated 30 A and above marked "AL-CU" are for use with aluminum and copper conductors.

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Switches, Fixture, Socket and Special Mechanism Types Certified for Canada (WMHR7)

USE

This category covers fixture, socket and special-mechanism-type switches intended for use in appliances, electric fixtures and portable lamps.

PRODUCT MARKINGS

The devices are marked as follows:

a. Listee's name or identification on device.
b. Catalog number or equivalent on device or carton.
c. Complete electrical rating on device.
d. Switches intended for control of tungsten filament lamps on both direct and alternating current are marked with the letter "T," located to indicate that it applies only to the rating at 125 V. AC/DC switches intended for the control of electric discharge lamps are marked with the letter "F." A switch may be marked with both letters to indicate both uses.
e. Switches intended for appliance use are marked "FOR APPLIANCE USE."

ADDITIONAL INFORMATION

For additional information, see Snap Switches Certified for Canada (WJQR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 111, "General-Use Snap Switches."

UL MARK

The Listing Mark of UL on the product, or the UL symbol stamped or molded into the product and the Listing Mark on the smallest unit packaging is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Switch," "Fixture Snap Switch" or "Fixture Switch."

In lieu of the UL symbol stamped or molded into the product, "UNDERWRITERS LABORATORIES INC. LISTED" (or "UND. LAB. INC. LIST.") may be stamped or molded into the product. When marked as such, the Listing Mark shall appear on the smallest unit packaging.

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Switches, Flush Certified for Canada (WMUZ7)

USE

This category covers switches designed for mounting in outlet boxes or on an outlet box cover and intended for connection to branch-circuit wiring, including combinations of switches on a single yoke.

This category does not cover dimmer switches.

PRODUCT MARKINGS

The devices are marked as follows:

a. Listee's name or identification on device
b. Catalog number or equivalent on device or carton
c. Complete electrical ratings on device
d. Date code or equivalent on general-purpose ac switches on device or carton

ADDITIONAL INFORMATION

For additional information, see Snap Switches Certified for Canada (WJQR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 111, "General-Use Snap Switches."

UL MARK

The Listing Mark of UL on the product, or the UL symbol stamped or molded into the product and the Listing Mark on the smallest unit packaging is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Switch."

In lieu of the UL symbol stamped or molded into the product, "UNDERWRITERS LABORATORIES INC. LISTED" (or "UND. LAB. INC. LIST.") may be stamped or molded into the product. When marked as such, the Listing Mark shall appear on the smallest unit packaging.

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Switches, Flush Certified for Canada (WMUZ7)−*Continued*

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Switches, Pendant Certified for Canada (WNIX7)

GENERAL

This category covers pendant switches, through-cord switches, and combination pendant switches with outlet.

PRODUCT MARKINGS

The devices are marked as follows:

a. Listee's name or identification on device
b. Catalog number or equivalent on device or carton
c. Complete electrical ratings on device

ADDITIONAL INFORMATION

For additional information, see Snap Switches Certified for Canada (WJQR7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 55, "Special Use Switches."

UL MARK

The Listing Mark of UL on the product, or the UL symbol stamped or molded into the product and the Listing Mark on the smallest unit packaging is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Switch."

In lieu of the UL symbol stamped or molded into the product, "UNDERWRITERS LABORATORIES INC. LISTED" (or "UND. LAB. INC. LIST.") may be stamped or molded into the product. When marked as such, the Listing Mark shall appear on the smallest unit packaging.

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TRANSFER SWITCHES CERTIFIED FOR CANADA (WPTZ7)

This category covers automatic and nonautomatic transfer switches, including associated control devices, with maximum ratings of 600 V ac.

Transfer switches and bypass switches which have been investigated without regard to the enclosure in which they are mounted have the Listing Mark applied to the switch panel. When the Listing Mark is applied to the enclosure of an enclosed transfer switch or bypass switch it indicates the Listing of the complete enclosed assembly.

Transfer switches which have been investigated for their suitability for use as service equipment are marked, "SUITABLE FOR USE AS SERVICE EQUIPMENT."

Transfer switches are required to be designed so that the load cannot remain simultaneously disconnected from both the normal and alternative sources when either or both sources are available, except that transfer switches marked, "SUITABLE FOR USE AS SERVICE EQUIPMENT" are provided with accessible means to independently disconnect both the normal and alternate sources.

Automatic transfer switches transfer a common load from a normal supply to an on site generated supply in the event of failure of the normal supply, and automatically return the load to the normal supply when the normal supply is reestablished.

Additional sensing devices which may initiate or delay transfer have been evaluated in accordance with the manufacturer's marked operating values.

Automatic transfer switches may have a switching contact to initiate the starting of an engine generator set.

Transfer Switches have been investigated for load switching and inrush capability and for a number of cycles of operation based on their intended use which in the case of an automatic transfer switch is expected to include scheduled test operations switching full load.

Listed transfer switches without enclosures are for use as part of other equipment or where open type devices are acceptable.

Transfer switches without integral overcurrent protective devices are suitable for continuous use at 100% of rated current. Transfer switches incorporating integral overcurrent protective devices are suitable for continuous use at 100% of rated current unless restricted to use at 80% of rated current as indicated by the marking, "CONTINUOUS LOAD CURRENT NOT TO EXCEED 80 PERCENT OF SWITCH RATING," on the switch.

Transfer Switches Certified for Canada (WPTZ7)−*Continued*

Transfer switches are rated in amps and are generally considered to be suitable for total system transfer, which includes control of motors, electric discharge lamps, electric heating loads, and tungsten-filament lamps within the amp rating marked on the nameplate.

Unless marked otherwise, transfer switches rated 100 A or less are suitable for use on circuits having available fault currents not greater than 5000 A rms symmetrical. Transfer switches rated more than 100 A are suitable for use on circuits having an available fault current of 10,000 A rms symmetrical or 20 times the transfer switch rating, whichever is greater.

Transfer switches having manual operators accessible only by opening the enclosure, are not intended to be manually operated under load.

Some transfer switches may be provided with ground-fault protection for services or major feeders. The circuit(s) so protected are identified by a marking such as on a wiring diagram.

Transfer switches without integral overcurrent protection, are marked to indicate the maximum rating of overcurrent protection to be provided ahead of the transfer switch.

Transfer switches as Listed herein are for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is indicated on a wiring diagram or other readily visible location.

Unless the device is marked otherwise, the wiring space and current carrying capacity are based on 60°C wire for switches rated 100 A or less and 75°C for switches rated more than 100 A.

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Accessories, Transfer Switch Certified for Canada (WPVQ7)

USE

This category covers accessories intended for use with transfer switches rated 600 V or less, including bypass/isolation switches and other accessories intended solely for use with certified transfer switches. These accessories are intended for use in conjunction with transfer switches, but are not intended to modify the function or construction of the transfer switch itself.

This category covers bypass switches, which permit testing and maintenance of emergency system components that could not be otherwise maintained without disruption of important functions. The bypass switching sequence is manually initiated.

ADDITIONAL INFORMATION

For additional information, see Transfer Switches Certified for Canada (WPTZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 178, "Automatic Transfer Switches."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Transfer Switch Accessory," "Transfer and By-Pass/Isolation Switch," "By-Pass/Isolation Switch" or "By-Pass/Transfer Switch."

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Automatic Transfer Switches for Use in Emergency Systems Certified for Canada (WPWR7)

USE

This category covers automatic transfer switches, rated 600 V or less, intended for use in emergency systems in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." These switches are also suitable for use in standby systems.

ADDITIONAL INFORMATION

Automatic Transfer Switches for Use in Emergency Systems Certified for Canada (WPWR7)−*Continued*

For additional information, see Transfer Switches Certified for Canada (WPTZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 178.1 (2007), ''Requirements for Transfer Switches.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Automatic Transfer Switch for Emergency Systems.''

* *

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Automatic Transfer Switches for Use in Optional Standby Systems Certified for Canada (WPXT7)

USE

This category covers automatic transfer switches with a maximum rating of 600 V ac, intended for use in optional standby systems in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Transfer switches suitable for service equipment use are so marked.

ADDITIONAL INFORMATION

For additional information, see Transfer Switches Certified for Canada (WPTZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 178.1 (2007), ''Requirements for Transfer Switches.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Automatic Transfer Switch for Use in Optional Standby Systems.''

* *

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Nonautomatic Transfer Switches Certified for Canada (WPYV7)

USE

This category covers nonautomatic transfer switches rated 600 V or less, intended to transfer a common load from a normal supply to an alternate supply of an equipment system in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

ADDITIONAL INFORMATION

For additional information, see Transfer Switches Certified for Canada (WPTZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 178, ''Automatic Transfer Switches.''

The basic standard used to investigate manually operated generator transfer panels having maximum ratings of 250 V, 60 A in this category is CSA-C22.2 No. 178.2, ''Requirements for Manually Operated Generator Transfer Panels.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Non-Automatic Transfer Switch.''

* *

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Nonautomatic Transfer Switches Certified for Canada (WPYV7)−*Continued*

SWITCHES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WQNV7)

Switches rated in horsepower have been tested with respect to interruption of the maximum operating overload current of motors of the same horsepower and voltage ratings. When rated in amps and volts only the switches have not been investigated with respect to use in motor circuits.

ENCLOSED SWITCHES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WRPR7)

GENERAL

This category covers enclosed switches, with or without fuseholders, intended for plug or cartridge fuses. Enclosed switch ratings are limited to 3600 A, 500 hp, 600 V.

Enclosed switches are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Unless the device is marked to indicate otherwise, the wiring space and current-carrying capacity are based on the use of 60°C wire in circuits rated 100 A or less, and the use of 75°C wire for higher-amp-rated circuits.

Enclosed motor-circuit switches and enclosed switches with horsepower ratings are tested for interrupting capacity at rated voltage and at six times motor full-load running current for alternating-current ratings, and at four times motor full-load running current for direct-current ratings.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CAN/CSA-C22.2 No. 4 (1989), ''Enclosed and Dead-Front Switches.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Enclosed Switch for Hazardous Locations.''

* *

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SNAP SWITCHES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WSQX7)

GENERAL

This category covers snap switches that are limited to 30 A, 600 V, ac; 60 A, 250 V, ac or dc; and not more than 2 hp at 600 V or less, ac, 250 V or less, dc.

Snap switches with horsepower ratings have been tested with respect to interruption of maximum overload currents of motors of the same horsepower and voltage ratings.

Snap switches having a ''T'' rating are capable of controlling tungsten-filament-lamp loads corresponding to the 125 V rating of the switches.

Snap switches provided with a factory seal of conductors entering the switch enclosure are so identified by a marking on the product.

ADDITIONAL INFORMATION

Snap Switches for Use in Hazardous Locations Certified for Canada (WSQX7)−*Continued*

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 55-1986, "Special Use Switches."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Snap Switch for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

* *

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SWITCHES, MISCELLANEOUS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WTEV7)

GENERAL

This category covers switches that are not fused. The suitability of miscellaneous switches for use on high-capacity circuits has not been investigated.

Miscellaneous switches with amp ratings are intended for general use. Switches with horsepower ratings are suitable for use in motor circuits.

Miscellaneous switches certified with horsepower ratings are tested for interrupting capacity at rated voltage and at six times motor full-load running current for ac ratings, and at four times motor full-load running current for dc ratings.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flow Switch for Use in Hazardous Locations" or "Limit Switch for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

* *

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SWITCHES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WTSN7)

Switches rated in horsepower have been tested with respect to interruption of the maximum operating overload current of motors of the same horsepower and voltage ratings. When rated in amps and volts only, the switches have not been investigated with respect to use in motor circuits.

ENCLOSED SWITCHES FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WUGF7)

GENERAL

This category covers enclosed switches either with or without fuseholders for plug or cartridge fuses. Enclosed switch ratings are limited to 3600 A, 500 hp, 600 V.

Enclosed switches with horsepower ratings in addition to amp ratings are suitable for use in motor circuits as well as for general use. Enclosed switches with amp ratings are intended for general use.

Enclosed switches are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Unless the device is marked to indicate otherwise, the wiring space and current-carrying capacity are based on the use of 60°C wire in circuits rated 100 A or less, and the use of 75°C wire for higher-amp-rated circuits.

Enclosed motor-circuit switches and enclosed switches with horsepower ratings are tested for interrupting capacity at rated voltage and at six times motor full-load running current for alternating-current ratings, and at four times motor full-load running current for direct-current ratings.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Enclosed Switch for Hazardous Locations."

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SWITCHGEAR ASSEMBLIES, METAL ENCLOSED, LOW-VOLTAGE-POWER CIRCUIT-BREAKER TYPE CERTIFIED FOR CANADA (WUTZ7)

GENERAL

This category covers metal-enclosed, low-voltage-power circuit-breaker switchgear rated up to 750 V ac, nominal.

These switchgear assemblies are completely enclosed on all sides and top with sheet metal (except for ventilation openings and inspection windows) and may contain the following: (1) low-voltage-power circuit breakers, either fused or unfused, (2) bare and/or insulated busbars and connections, (3) instrument and control power transformers, (4) instruments, meters and relays, and (5) control wiring and accessory devices.

The low-voltage-power circuit breakers are contained in individual grounded metal compartments and are controlled either remotely or from the front of the enclosure. The circuit breakers may be stationary or of the draw-out type.

These switchgear assemblies may consist of a single vertical section housing one or more individual low-voltage-power circuit-breaker compartments or auxiliary compartments, along with the associated busbar structure, or may consist of several abutting sections interconnected by horizontal buses.

The auxiliary compartments may house such auxiliary equipment as potential transformers, control power transformers, or other miscellaneous devices.

These switchgear assemblies are marked with the following ratings or with a reference to a drawing which is included with the product and marked with the following ratings: (1) rated maximum voltage, (2) rated frequency, (3) rated insulation level, (4) rated continuous current, (5) rated short-time current, and (6) rated short-circuit current. This information also includes (1) whether the assembly is for indoor or outdoor use, (2) whether accessibility from the rear, side, top or ends is required for installation, and (3) the suitability of the equipment for mounting over combustible surfaces.

Low-voltage-power switching devices used in these switchgear assemblies are suitable for continuous use at 100% of their continuous-current rating.

The marking "Suitable for Use as Service Equipment" appears on each switchgear section or assembly optionally intended for use at a service.

A switchgear section marked for use at services may also be used to provide the main control and means of cutoff for a separately derived system.

Generally this switchgear is shipped without wire connectors and the busbar terminations are provided with standard bolt-hole patterns. The suitability of the wire connectors installed must be determined by Authorities Having Jurisdiction at the time of final inspection.

A switchgear section investigated to determine if it is rainproof is marked "Rainproof."

The individual power circuit-breaker compartments or adapters are intended to accommodate a low-voltage-power circuit breaker and are marked to indicate the type(s) of circuit breaker that may be installed.

Individual auxiliary compartments are intended to house control components such as meters, instrument and/or control power transformers, and the like.

Low-voltage-power circuit-breaker switchgear assemblies are generally provided with shop drawings or the like that include circuit and connection diagrams of the assembly, continuous-current ratings of the main and section buses, details of control and ground-fault protection (if provided) circuits, etc.

ARC-RESISTANT SWITCHGEAR

Metal-enclosed switchgear specially designed to provide some degree of protection to an operator, or other personnel in the vicinity of the equipment, from the effects of an internal arc occurring in atmospheric air within the enclosure when the doors and covers are secured as intended, may additionally be Classified as arc-resistant switchgear.

Arc-resistant switchgear has been investigated for installation in buildings (for indoor applications) that have sufficient overhead space to permit venting without reflecting arc products, as specified in the installation instructions.

Arc-resistant switchgear is marked with an Accessibility Type designation of Type 1 or 2, 1B or 2B, 1C or 2C, or 1D based upon the construction and the standard used for the investigation.

Type 1 denotes that arcing does not cause holes in the freely accessible front of the enclosure.

Type 2 denotes that arcing does not cause holes in the freely accessible front, sides and rear of the enclosure.

Type 1B denotes that arcing does not cause holes in the freely accessible front of the enclosure or in the walls isolating the low-voltage control or instrument compartments.

Type 2B denotes that arcing does not cause holes in the freely accessible front, sides and rear of the enclosure or in the walls isolating the low-voltage control or instrument compartments.

Type 1C denotes that arcing does not cause holes in the freely accessible front of the enclosure or in the walls separating the compartment in which the arc is initiated from all adjacent compartments.

Type 2C denotes that arcing does not cause holes in the freely accessible front of the enclosure or in the walls separating the compartment in which the arc is initiated from all adjacent compartments, except that a fault in the main busbar compartment is allowed to propagate into the main busbar compartment of adjacent vertical sections.

Type 1D denotes that arcing does not cause holes in the freely accessible front and any other surface of the enclosure under investigation.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 31, "Switchgear Assemblies."

The basic standard used to investigate switchgear Classified as "arc resistant" is IEEE C37.20.7, "IEEE Guide for Testing Medium-Voltage Metal-Enclosed Switchgear for Internal Arcing Faults."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Low-Voltage Power Circuit Breaker Switchgear Section," "Low-Voltage Power Circuit Breaker Compartment" or "Low-Voltage Power Circuit Breaker Auxiliary Compartment."

The Listing Mark for low-voltage-power circuit-breaker switchgear sections also includes the marking "____ of ____." The first blank is stamped with a number indicating the position that the section occupies in the series of sections constituting the switchgear assembly. The second blank

is stamped with the total number of sections in the switchgear assembly. Only those sections and compartments that bear the Listing Mark are covered under UL's Follow-Up Service.

Classification Mark for Arc-resistant Switchgear

The Classification Mark of UL on switchgear investigated as arc resistant is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark consists of the appropriate Listing Mark (noted above) and the following additional information:

ARC-RESISTANT SWITCHGEAR
ALSO CLASSIFIED IN ACCORDANCE WITH IEEE C37.20.7

The Classification Mark appears on the front of each vertical section eligible for Classification. The Classification Mark covers only the vertical section to which it is affixed; it does not cover other vertical sections included in the assembly, or the removable circuit breaker. Each vertical section of a line-up of abutting vertical sections is provided with a "____ of _____" marking, where the first blank indicates the position (from left to right) of the vertical section bearing the UL Mark, and the second blank indicates the total number of vertical sections (including sections not bearing the UL Mark).

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SWITCHGEAR OVER 600 VOLTS CERTIFIED FOR CANADA (WVDA7)

ARC-RESISTANT SWITCHGEAR

Switchgear specially designed to provide some degree of protection to an operator, or other personnel in the vicinity of the equipment, from the effects of an internal arc occurring in atmospheric air within the enclosure when the doors and covers are secured as intended may additionally be Classified as arc-resistant switchgear.

Arc-resistant switchgear may be designed to vent overpressure gases either into the surrounding area or through an exhaust duct outside of the building.

Where overpressure gases are vented in the surrounding areas, the arc-resistant switchgear has been investigated for installation in buildings that have sufficient overhead space and minimum distance from adjacent walls to permit venting without reflecting arc products, as specified in the installation instructions provided by the manufacturer.

When provided with an exhaust duct, overhead space and minimum distance from adjacent walls are not specified. Exhaust ducts provided in the installation are intended to be as specified in the installation instructions provided by the manufacturer.

Arc-resistant switchgear is marked with an Accessibility Type designation based upon the construction and the standard to which the switchgear is investigated.

When investigated in accordance with EEMAC G14-1, "EEMAC Procedure for Testing the Resistance of Metal Clad Switchgear Under Conditions of Arcing Due to an Internal Fault," the Accessibility Types may be A, B or C.

Type A designates switchgear with arc-resistant construction at the front only.

Type B designates switchgear with arc-resistant construction at the front, sides and rear. None of these Type designations imply that the equipment maintains its intended degree of protection when operated with any door or cover, including low-voltage control or instrument compartment doors or covers open.

Type C designates switchgear with arc-resistant construction at the front, sides and rear, and between compartments within the same cell or adjacent cells. In Type C equipment, a fault in a main busbar compartment may propagate into the main busbar compartments of adjacent feeder cells.

When investigated in accordance with IEEE C37.20.7, "IEEE Guide for Testing Medium-Voltage Metal-Enclosed Switchgear for Internal Arcing Faults," the Accessibility Types may be 1, 1B, 1C, 1D-SR, 1D-SL, 1D-R, 2, 2B or 2C.

Type 1 designates switchgear with arc-resistant construction at the front only.

Type 1B designates switchgear with arc-resistant construction at the front, and the low-voltage control or instrument compartment(s).

Types 1D-SR, 1D-SL, 1D-R designate switchgear with arc-resistant construction in the front; and at the right side (SR), left side (SL) or the rear (R), respectively.

Type 1C designates switchgear with arc-resistant construction at the front, and between compartments within the same cell or adjacent cells. In Type 1C equipment, a fault in a main busbar compartment

may propagate into the main busbar compartments of adjacent feeder cells.

Type 2 designates switchgear with arc-resistant construction at the front, sides and rear.

Type 2B designates switchgear with arc-resistant construction at the front, sides, rear and the low-voltage control or instrument compartment(s).

Type 2C designates switchgear with arc-resistant construction at the front, sides and rear, and between compartments within the same cell or adjacent cells. In Type 2C equipment, a fault in a main busbar compartment may propagate into the main busbar compartments of adjacent feeder cells.

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SWITCHGEAR, GAS-INSULATED TYPE, OVER 600 VOLTS CERTIFIED FOR CANADA (WVEK7)

GENERAL

This category covers indoor medium-voltage switchgear where gas, typically sulfur hexafluoride (SF-6), is used as the insulating medium. The term ''indoor'' does not preclude the use of this equipment in outdoor enclosures, but rather defines the class of equipment. This equipment includes circuit breakers specifically intended to provide feeder or branch-circuit overcurrent protection, in nominal voltages of 600 V through 46kV ac. This equipment is not intended for use as service entrance equipment. These devices are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' in unclassified locations, for controlling and protecting the power from generators and other sources of electrical energy.

CIRCUIT BREAKERS

The circuit breakers are three-pole devices, fixed, trip-free. Interruption may take place in a gas-filled chamber or in a vacuum interrupter that is in a gas-filled chamber. Each circuit breaker pole may be housed separately.

Each circuit breaker is connected to an isolating/grounding switch that can connect the circuit breaker to the circuit, disconnect the circuit breaker, or ground the load circuit through the circuit breaker.

Circuit Breaker Ratings

Each circuit breaker is provided with a marking that indicates the voltage and current ratings for both the close and trip coils. This marking also contains a ''close-and-latch'' rating in kiloamperes that is equivalent to the momentary rating (maximum asymmetrical current rating) of the circuit breaker. This rating is expressed in rms asymmetrical amperes. Circuit breakers have a rated maximum voltage of 4.76, 8.25, 15, 27 or 38 kV with continuous current ratings of 1200, 2000 or 3000 A.

Circuit breakers are marked with an interrupting rating ''I'' in rms symmetrical amperes that is applicable at the maximum rated voltage. These circuit breakers are also provided with a ''K'' factor for determining the interrupting rating at a use voltage lower than the maximum rated voltage. The circuit breaker may interrupt a current greater than ''I'' by a factor up to the value of ''K,'' at a voltage reduced from the maximum rated voltage, ''V max'' by the same factor, or at a lower voltage, as depicted in Illustration 1 of Circuit Breakers and Metal-clad Switchgear Over 600 Volts Certified for Canada (DLAH7).

Unless specifically marked otherwise, these circuit breakers are intended for use on three-phase circuits where the nominal voltage-to-ground is 0.58 times the line-to-line voltage.

GAS-INSULATED SWITCHGEAR

This switchgear may consist of several gas-filled compartments connected together. Gas-filled compartments are isolated from each other by gas seals. The compartments are electrically connected together and grounded. A compartment may house a circuit breaker, a length of bus, or a switch. A dual bus system, with isolating switches, may be provided.

A vertical section may consist of a circuit breaker, a switch, a bus compartment and a control compartment. A vertical section may be a single freestanding section or they may consist of a number of abutting vertical sections intended for interconnection by a horizontal bus.

Each vertical section of a line-up of abutting vertical sections is provided with a ''____ of ____'' marking where the second blank indicates the total number of vertical sections provided (including sections not bearing the UL Listing Mark) and the first blank indicates the position (from left to right) of the vertical section bearing the UL Listing Mark.

Auxiliary equipment such as potential transformers and current transformers are factory installed. Other auxiliary equipment such as protective relays and the like are separately enclosed within the switchgear. They are not typically in gas-insulated compartments.

Switchgear, Gas-insulated Type, Over 600 Volts Certified for Canada (WVEK7)−*Continued*

The output of these current sensors is connected to either protective relays or similar sensing and relaying equipment that is typically panel mounted or located behind a dead front.

Gas-insulated Switchgear Ratings

Switchgear assemblies are marked with the following ratings: maximum voltage, frequency, insulating level, continuous current, short-time current and momentary current. When provided with a horizontal bus, each section is marked with the ampacity of the horizontal bus in amperes. This marking appears on each vertical section bearing the UL Listing Mark.

ARC-RESISTANT SWITCHGEAR

Metal-clad switchgear specially designed to provide some degree of protection to an operator, or other personnel in the vicinity of the equipment, from the effects of an internal arc occurring in atmospheric air within the enclosure when the doors and covers are secured as intended may additionally be Classified as arc-resistant switchgear.

ENCLOSURES

The standard enclosure for the parts operating at medium voltage consists of the metal housing that contains the gas-insulating medium. The enclosures are intended for indoor applications.

An additional enclosure investigated to determine that it is rainproof is marked ''Rainproof,'' ''Outdoor'' or ''3R.'' These enclosures may be either nonventilated or ventilated. Enclosures intended for outdoor use are marked to indicate the exposure Category (A, B or C) for which they are intended. Enclosures marked ''Category A'' are intended to be installed in areas accessible to the unsupervised general public; enclosures marked ''Category B'' are intended to be installed in areas accessible to authorized personnel only; enclosures marked ''Category C'' are intended to be installed in areas accessible to qualified personnel only. The environmental and exposure category marking need only appear on the first (incoming) switchgear vertical section of a line-up.

ADDITIONAL INFORMATION

For additional information, see Switchgear Over 600 Volts Certified for Canada (WVDA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 31-1989, ''Switchgear Assemblies.''

The requirements of T.I.L. No. D-25, ''Interim Requirements for Pressurized Gas Insulated Switchgear,'' also apply to products in this category.

Switchgear Classified as ''arc resistant'' has additionally been investigated to EEMAC G14-1, ''EEMAC Procedure for Testing the Resistance of Metal Clad Switchgear Under Conditions of Arcing Due to an Internal Fault,'' or IEEE C37.20.7, ''IEEE Guide for Testing Medium-Voltage Metal-Enclosed Switchgear for Internal Arcing Faults,'' as indicated in the Classification Mark.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Gas-insulated Switchgear.''

In an assembly of products, the Listing Mark is applied to each vertical section eligible for Listing. The Listing Mark on the overall enclosure covers only the vertical section to which it is affixed and any installed fixed circuit breakers; it does not cover other vertical sections included in the assembly or removable circuit breakers.

Classification Mark for Arc-resistant Switchgear

The Classification Mark of UL on switchgear investigated as arc resistant is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark consists of the Listing Mark noted above and the following additional information:

ARC-RESISTANT SWITCHGEAR
ALSO CLASSIFIED IN ACCORDANCE WITH
[standard designation and date]

The Classification Mark appears on the front of each vertical section eligible for Classification. The Classification Mark covers only the vertical section to which it is affixed; it does not cover other vertical sections included in the assembly, or the removable circuit breaker. Each vertical section of a line-up of abutting vertical sections is provided with a ''_____ of _____'' marking, where the second blank indicates the total number of vertical sections (including sections not bearing the UL Mark) and the first blank indicates the position (from left to right) of the vertical section bearing the UL Mark.

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Switchgear, Gas-insulated Type, Over 600 Volts Certified for Canada (WVEK7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

SWITCHGEAR, METAL ENCLOSED, OVER 600 VOLTS CERTIFIED FOR CANADA (WVGN7)

GENERAL

This category covers medium-voltage, metal-enclosed switchgear where air is used as the primary insulating medium. This does not preclude the use of gas within the switching chamber of a switch or circuit breaker used in the switchgear. This equipment may include load-break switches, or circuit breakers that are specifically intended to provide feeder or branch-circuit overcurrent protection. This equipment may also include isolating-type switches that are interlocked with circuit breakers or load-break switches. These devices are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

CIRCUIT BREAKERS

Circuit breakers are three-pole, fixed-type devices. Interruption may take place in a vacuum interrupter, in a gas-filled chamber, or in a vacuum interrupter that is in a gas-filled chamber. Each circuit-breaker pole may be housed separately.

Each circuit breaker is connected to an isolating/grounding switch that can connect the circuit breaker to the circuit, disconnect the circuit breaker, or ground the load circuit through the circuit breaker.

Circuit-breaker Ratings

Each circuit breaker is provided with a marking that indicates the voltage and current ratings for both the close and trip coils. This marking also contains a "close-and-latch" rating in kiloamperes that is equivalent to the momentary rating (maximum asymmetrical current rating) of the circuit breaker. This rating is expressed in rms asymmetrical amperes. Circuit breakers have a rated maximum voltage of 4.76, 8.25, 15, 27 or 38 kV with continuous current ratings of 1200, 2000 or 3000 A.

Circuit breakers are marked with an interrupting rating "I" in rms symmetrical amperes that is applicable at the maximum rated voltage. Unless specifically marked otherwise, these circuit breakers are intended for use on three-phase circuits where the nominal voltage-to-ground is 0.58 times the line-to-line voltage.

SWITCHES

Switches are three-pole, gang-operated-type devices. Interruption may take place in air, or in a gas-filled chamber. The switches provide either a load break or isolating function, and may also provide a means to ground the load conductors. Switches intended for isolation only are interlocked with a device that has been investigated for switching of loads.

Switch Ratings

Each switch is provided with a marking that indicates the switch ratings. This marking includes the rated maximum voltage and continuous current rating of the switch. Switches have a rated maximum voltage of 4.76, 8.25, 15, 27 or 38 kV with continuous current ratings of 200, 600, 1200, 2000 or 3000 A. Switches are also marked with a momentary withstand rating, expressed in rms asymmetrical amperes (kA).

Load-break-type switches are marked with a fault-making rating, expressed in rms asymmetrical amperes, which is applicable at the maximum rated voltage. Unless specifically marked otherwise, these switches are intended for use on three-phase circuits where the nominal voltage-to-ground is 0.58 times the line-to-line voltage.

METAL-ENCLOSED SWITCHGEAR

Vertical sections may consist of a circuit breaker, a switch, a bus compartment and a control compartment. Vertical sections may be single free-standing sections or they may consist of a number of abutting vertical sections intended for interconnection by a horizontal bus.

Each vertical section of a line-up of abutting vertical sections is provided with a "____ of ____" marking, where the second blank indicates the total number of vertical sections provided (including sections not bearing the UL Mark) and the first blank indicates the position (from left to right) of the vertical section bearing the UL Mark.

Auxiliary equipment, such as potential transformers and current transformers, are factory installed. Other auxiliary equipment, such as protective relays and the like, are separately enclosed within the switchgear. They are not typically in gas-insulated chambers.

The output of each potential and current transformer is connected to either protective relays or similar sensing and relaying equipment that is typically panel mounted or located behind a dead front.

Metal-enclosed Switchgear Ratings

Switchgear assemblies are marked with the following ratings: maximum voltage, frequency, insulating level, continuous current, short-time current and momentary current. When provided with a horizontal bus, each section is marked with the ampacity of the horizontal bus in amperes. This marking appears on each vertical section bearing the UL Mark.

Switchgear, Metal Enclosed, Over 600 Volts Certified for Canada (WVGN7)−*Continued*

ARC-RESISTANT SWITCHGEAR

Metal-enclosed switchgear specially designed to provide some degree of protection to an operator, or other personnel in the vicinity of the equipment, from the effects of an internal arc occurring in atmospheric air within the enclosure when the doors and covers are secured as intended may additionally be Classified as arc-resistant switchgear.

ENCLOSURES

The standard enclosure for the parts operating at medium voltage consists of the metal housing that contains the switches, circuit breakers, and auxiliary equipment. The enclosures are intended for indoor applications unless marked otherwise.

Enclosures are marked to indicate the exposure category (A, B or C) for which they are intended. Enclosures marked "Category A" are intended to be installed in areas accessible to the unsupervised general public; enclosures marked "Category B" are intended to be installed in areas accessible to authorized personnel only; enclosures marked "Category C" are intended to be installed in areas accessible to qualified personnel only.

When intended for outdoor use, an enclosure is investigated to determine that it is rainproof and is marked "Rainproof" or "Outdoor." These enclosures may be either nonventilated or ventilated.

The environmental and exposure category marking need only appear on the first (incoming) switchgear vertical section of a line-up.

ADDITIONAL INFORMATION

For additional information, see Switchgear Over 600 Volts Certified for Canada (WVDA7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 31 (1989), "Switchgear Assemblies."

Switchgear Classified as "arc resistant" has additionally been investigated to EEMAC G14-1, "EEMAC Procedure for Testing the Resistance of Metal Clad Switchgear Under Conditions of Arcing Due to an Internal Fault," or IEEE C37.20.7, "IEEE Guide for Testing Medium-Voltage Metal-Enclosed Switchgear for Internal Arcing Faults," as indicated in the Classification Mark.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Metal-enclosed Switchgear, Over 600 V."

In an assembly of products, the Listing Mark is applied to each vertical section eligible for Listing. The Listing Mark on the overall enclosure covers only the vertical section to which it is affixed and any installed fixed-mount switches or fixed-mount circuit breakers; it does not cover other vertical sections included in the assembly, or removable switches or circuit breakers.

Classification Mark for Arc-resistant Switchgear

The Classification Mark of UL on switchgear investigated as arc resistant is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark consists of the Listing Mark noted above and the following additional information:

ARC-RESISTANT SWITCHGEAR
ALSO CLASSIFIED IN ACCORDANCE WITH
[standard designation and date]

The Classification Mark appears on the front of each vertical section eligible for Classification. The Classification Mark covers only the vertical section to which it is affixed; it does not cover other vertical sections included in the assembly, or the removable circuit breaker. Each vertical section of a line-up of abutting vertical sections is provided with a "_____ of _____" marking, where the second blank indicates the total number of vertical sections (including sections not bearing the UL Mark) and the first blank indicates the position (from left to right) of the vertical section bearing the UL Mark.

* *

SWITCHGEAR, PAD MOUNTED, SUBSURFACE AND VAULT OVER 600 VOLTS CERTIFIED FOR CANADA (WVHN7)

GENERAL

This category covers medium-voltage, pad-mounted, subsurface and vault switchgear having ac voltage ratings up to 38 kV ac maximum. For purposes of this category, pad-mounted, subsurface and vault switchgear may be designated as distribution switchgear (DSG).

Pad-mounted switchgear is an enclosed switchgear assembly in which all energized parts are insulated and completely enclosed within a grounded shield system when separable connectors are in place.

Pad-mounted switchgear is intended for installation in outdoor, aboveground areas accessible to the unsupervised general public in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Although intended for outdoor use, this equipment is not precluded from being used indoors.

Subsurface switchgear is a submersible switching assembly suitable for application in a below-grade enclosure and is normally surface operable. Subsurface switchgear may be provided as open equipment.

Vault switchgear is open type (unenclosed), partially enclosed, or enclosed-type switchgear intended to be installed in an electrical vault, in which the switch and accessories are operable from inside a vault.

Each assembly of DSG includes one or more "ways." A "way" is a three-phase or single-phase circuit connection to the bus, which may contain combinations of switches and protective devices or may be solid bus.

DSG may use oil, air, or another gas (such as SF6) as the insulating medium for the entire assembly, or for portions of the assembly, such as individual switches.

DSG is intended to be cable connected using separable insulated connector systems complying with IEEE 386, "Separable Insulated Connector Systems for Power Distribution Systems Above 600 V."

ENCLOSURES

The enclosures of pad-mounted switchgear are provided with security features such as pentahead securing bolts and padlocking provisions on all access doors.

Pad-mounted switchgear has not been investigated for installation in coastal environments unless so marked. Coastal environments are those land areas within 762 m of the mean high-water line.

Tanks and cabinets of submersible equipment are made of corrosion-resistant materials or provided with impact- and corrosion-resistant finishes. No additional investigation of enclosures for subsurface or vault-type switchgear is included under this category.

SWITCHES

Switches may be single- or three-phase, dead-front or live-front, pad-mounted, subsurface or vault. Switches may be provided with or without protective devices, such as fuses or fault interrupters.

Switch Ratings

Each switch within DSG has the following ratings: continuous current, load-switching current, loop-switching current, cable-charging switching current, and transformer-magnetizing switching current.

The preferred continuous-current ratings of load-interrupter switches within DSG are 200, 400 and 600 A, but switches may be investigated for ratings other than the preferred ratings.

PRODUCT MARKINGS

All DSG is marked with:

a) Name of the manufacturer and type designation
b) Model, style number and catalog number (if any)
c) Unique serial number
d) Date of manufacture (month and year)
e) Rated maximum voltage
f) Rated power frequency
g) Rated lighting-impulse withstand voltage (BIL)
h) Rated power-frequency withstand voltage
i) Rated short-circuit current
j) Total weight, including insulating medium
k) Type and quantity of insulating medium
l) Three-line schematic diagram

The marked rated maximum voltage is no greater than the voltage rating of the lowest rated "way." The equipment is also marked with a description of the type of equipment, for example, "Pad-mounted Fused Switch" or "Fused Load-break Way." The nameplate may be located on the exterior of the equipment or within an interior compartment.

Each "way" is marked with the manufacturer and type designation of switch and manufacturer and type designation of fuse mounting. In addition, a "way" may be marked with maximum voltage and short-circuit current. The maximum voltage and short-circuit current ratings are optional since they are part of the overall marking of the DSG.

Three-phase DSG containing one or more "ways" with components rated for phase-to-ground voltage (maximum voltage divided by 1.732), such as fuses, single-phase switches, or fused load-break devices, is marked with the designation "Grd-Y" (grounded-wye) added to the maximum voltage.

Switchgear, Pad Mounted, Subsurface and Vault Over 600 Volts Certified for Canada (WVHN7)−*Continued*

Each "switched way," "fused-switched way," or "fused load-break way" is marked with the following ratings: continuous current, load-switching current, loop-switching current, cable-charging switching current, and transformer-magnetizing switching current.

Each "fused way" or "tapped way" is marked with the continuous current rating of the "way."

Each enclosure is marked **DANGER – HIGH VOLTAGE – KEEP OUT**.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 31 (2010), "Switchgear Assemblies," and ANSI/IEEE C37.74 (2003), "Standard Requirements for Subsurface, Vault, and Pad-Mounted Load-Interrupter Switchgear and Fused Load-Interrupter Switchgear for Alternating Current Systems Up to 38 kV."

Pad-mounted switchgear is additionally investigated to ANSI/IEEE C57.12.28 (2005), "Pad-Mounted Equipment – Enclosure Integrity."

Enclosures for pad-mounted switchgear intended for installation in coastal areas are additionally investigated to IEEE C57.12.29 (2005), "Pad-Mounted Equipment – Enclosure Integrity for Coastal Environments."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name "Pad-mounted Switchgear," "Subsurface Switchgear" or "Vault Switchgear."

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TABLES, UTILITY CERTIFIED FOR CANADA (WWJT7)

GENERAL

This category covers tea or coffee tables, lightweight kitchen and utility tables, portable ironing boards, projector tables, portable cabinets and desks, all with permanently attached receptacles, and with a separable cord set or permanently attached power-supply cord. Except for projector tables that may contain a small lamp for previewing slides, the units contain no electrical load other than optional pilot lights.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 21 (1990), "Cord Sets and Power Supply Cords."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and one of the following product names as appropriate: "Utility Table," "Projector Table," "Desk," "Drafting Table," "Portable Utility Cabinet," "Ironing Board With Supply Cord," or other appropriate product name.

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TANK-MONITORING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WWQS7)

GENERAL

This category covers tank-monitoring equipment, including control units, indicators, sensors, transmitters, liquid-level probes and auxiliary devices used for tank monitoring or as part of tank-monitoring systems.

Certain products in this category are associated apparatus and are intended for installation in unclassified locations. They are provided with intrinsically safe circuits as indicated on the product, for extension into a hazardous (classified) location.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ‘‘Tank Monitoring Equipment for Use in Hazardous Locations’’ or ‘‘Tank Monitoring Equipment (Associated Apparatus),’’ or other appropriate product name as shown in the individual Listings.

* *

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TANK-MONITORING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WWQZ7)

GENERAL

This category covers tank-monitoring equipment, including control units, indicators, sensors, transmitters, liquid-level probes and auxiliary devices used for tank monitoring or as part of tank-monitoring systems.

Certain products in this category are associated apparatus and are intended for installation in unclassified locations. They are provided with intrinsically safe circuit(s) as indicated on the product, for extension into a hazardous (classified) location.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ‘‘Tank-monitoring Equipment for Use in Hazardous Locations’’ or ‘‘Tank-monitoring Equipment (Associated Apparatus),’’ or other appropriate product name as shown in the individual Listings.

* *

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TEACHING AND INSTRUCTION EQUIPMENT CERTIFIED FOR CANADA (WYFW7)

USE

This category covers equipment intended for use in schools and other establishments to aid in instruction.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60950-1, ‘‘Information Technology Equipment – Safety – Part 1: General Requirements.’’

New submittals for equipment intended for use in schools and other establishments to aid in instruction are investigated to CAN/CSA-C22.2 No. 60950-1 and are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ‘‘Teaching Equipment’’ or ‘‘Instructing Equipment,’’ or other appropriate product name as shown in the individual Listings.

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TELECOMMUNICATIONS EQUIPMENT CERTIFIED FOR CANADA (WYIE7)

Listing of the following products appear in this section:

Telephone Appliances and Equipment

Telephones, Cellular

Telecommunications equipment covered under this category has not been investigated for use in computer/information technology rooms. Computers and related equipment, including telecommunications equipment, that interface with electronic data processing systems and are intended for use in computer/information technology rooms are covered under Data Processing Equipment, Electronic Certified for Canada (EMRT7) or Information Technology Equipment Certified for Canada (NWGQ7).

Telecommunications equipment not marked as suitable for outdoor locations is for indoor use only and the acceptability of such equipment when installed in semi-protected or otherwise shielded locations is determined by the Authority Having Jurisdiction.

Unless marked to indicate special circuit characteristics or a specific function (such as ‘‘keyboard’’), telecommunications-type output connectors (such as RJ-series modular jacks, 50-pin commercial connectors, and insulation piercing terminals) of telecommunications equipment are limited to telecommunications-circuit levels and are suitable for connection to typical telecommunications networks and distribution wiring.

Certain types of telecommunications equipment are Listed as accessories for use only with other Listed equipment or systems and are identified by the word ‘‘Accessory.’’

* *

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CUSTOM-BUILT TELECOMMUNICATIONS EQUIPMENT CERTIFIED FOR CANADA (WYKM7)

GENERAL

This category covers custom-built, modular telecommunications equipment and accessories that include various combinations of cabinets, racks, circuit card assemblies, power supplies, and the like designed for field

Custom-built Telecommunications Equipment Certified for Canada (WYKM7)−*Continued*

installation by trained service personnel. They are intended for installation in accordance with Section 60 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

This equipment is intended to be installed and maintained by local exchange carriers (LECs), inter-exchange carriers (IXCs), and similar operating telecommunications companies, which provide service to the subscriber's premise and access to the public network.

INSTALLATION

Custom-built telecommunications equipment is intended to be installed only in restricted access locations, such as equipment rooms or closets, where access is limited to trained service personnel, unless it is installed in a certified rack, cabinet, or similar enclosure identified with the installation code "E."

Some units may have accessible parts (such as the output terminals of a low-power, ring-generator power supply) that operate at Class 3 voltage levels. The location of these units either in the restricted access location or in the final system configuration is intended to be such that unintentional contact with these parts is unlikely.

Unless identified with the installation code "B" or "E," custom-built telecommunications equipment is intended to be installed only over a noncombustible surface or in a certified rack, cabinet, or similar enclosure that is identified with the installation code "B" or "E."

Custom-built telecommunications equipment is intended to be configured in a system and installed in accordance with the manufacturer's installation instructions and the network carrier's installation practices. In order to ensure proper coordination of the individual units in the final installation, letter codes are provided to identify significant input, output, and installation parameters. These are divided into three categories: Power Codes (PC), Telecommunications Codes (TC), and Installation Codes (IC).

Power Codes (PC)

Power codes provide information relating to the type of power required to be supplied to the unit (input) or the type of power supplied by the unit (output).

C — As an input code, this designation requires the power inputs to the unit to be limited to normal telecommunications levels. Acceptable sources of power are certified telecommunications power supplies identified as having "Level C" outputs, certified custom-built telecommunications equipment with an output code "C," or communications line powering from certified telephone equipment or the public network.

As an output code, this designation indicates that the outputs are limited to normal telecommunications levels (Level C) and are suitable for connection to typical telecommunications networks and distribution wiring that are installed in accordance with Section 60 of the CEC.

F — As an input code, this designation requires the power inputs to the unit to be provided with overcurrent protection or be otherwise power limited. Acceptable sources of power are certified telecommunications power supplies identified as having "Class 2" or "Level C" outputs, a certified Class 2 power source, or certified custom-built telecommunications equipment with an output code of "F" or "C."

As an output code, this designation indicates that the unit provides power-limited outputs that are intended to be used for custom-built telecommunications equipment in the same system. These outputs have not been investigated as Class 2 circuits or communications circuits unless identified as such.

L — As an input code, this designation requires that, with overcurrent protection bypassed, the power source supplying the unit be limited to 250 VA and the current source be limited to 1000 V max. Acceptable types of limited power sources are certified Class 2 power supplies, a certified telecommunications power supply with outputs identified as being source limited, or certified custom-built telecommunications equipment with a power output code "L."

As an output code, this designation indicates that, with overcurrent protection bypassed, the unit provides power outputs that are source limited to 250 VA with the current limited to 1000 V max.

The following table summarizes acceptable power sources for units with input power codes C, F and L.

Power Source	May Supply Unit With An Input Power Code:
Output power code "L"	L
Output power code "F"	F
Output power code "C"	L, F, C
Class 2 power source	L, F
Communications circuits (e.g., public network)	L, F, C
Certified telephone power supplies with identified "Level C" outputs	L, F, C

Custom-built Telecommunications Equipment Certified for Canada (WYKM7)−*Continued*

Power Source	May Supply Unit With An Input Power Code:
Certified telephone power supplies with identified "source-limited" outputs	L

Telecommunications Codes (TC)

Telecommunications codes provide information relating to the characteristics of the telecommunications circuits that may be connected to the unit.

T — Provided as an output code, this designation indicates that the equipment provides isolation from "exposed" circuits requiring protection in accordance with Section 60-200 of the CEC.

X — As an input code or as an output code, this designation indicates that the input or output telecommunications circuits are suitable for connection to "exposed" circuits requiring protection in accordance with Section 60-200 of the CEC. Absence of this code is an indication that the equipment is intended to be isolated from "exposed" circuits by equipment with an output code designation "T."

Installation Codes (IC)

Installation codes provide information relating to the location and/or installation of the unit.

A — Where provided, this designation indicates that additional information is provided regarding the installation of the unit. Such information may be provided in the form of a permanent tag or information sheet attached to the unit.

B — Where provided, this designation indicates that the equipment provides side and bottom enclosures that minimize the risk of spread of fire. Cabinets, racks and similar equipment identified with an installation code "B" are not intended to completely enclose or limit accessibility to certified subassemblies mounted within the enclosure and are, therefore, not intended for use outside of limited access locations.

E — Where provided, this designation indicates that the equipment provides a complete enclosure for parts that may present a risk of electric shock, electrical energy/high current levels, or fire and limits accessibility to these parts. Cabinets, racks, and similar equipment identified with an installation code "E" are intended to enclose and limit accessibility to certified subassemblies mounted within the enclosure and may be used outside of restricted access locations.

Marking on Units

The codes are marked in the following format:

	In	Out
Power Code (PC)	F	C
Telecommunications Code (TC)	X	T, X
Installation Code (IC)	A	—

In this example, the "F" Power Code (PC) for the input indicates that the power inputs require overcurrent protection from the equipment that provides power to this unit. The "C" Power Code (PC) for the output indicates that the outputs are limited to levels compatible with communications wiring systems. The "X" input Telecommunications Code (TC) means that the communications-circuit inputs are suitable for connection to exposed circuits. The "T" Telecommunications Code (TC) for the output indicates that the unit provides isolation between the exposed circuits connected at the input and the telecommunications output ports. The "X" Telecommunications Code (TC) for the output indicates that the output circuits are also suitable for connection to exposed circuits. The "A" Installation Code (IC) indicates that additional important installation information is provided on a tag or an attached information sheet. The lack of any other installation codes indicates that the equipment should be installed in limited access areas over a noncombustible surface or mounted in a suitable enclosure with an "E" or "B" installation code.

Power supplies and assemblies containing power supplies or power-distribution components are marked with electrical ratings. Assemblies that present a load on the power system are marked with a load or input rating. The total load ratings for any system should not exceed the power supply/distribution ratings.

Custom-built telecommunications equipment is intended to be installed or situated in a location or position that does not cause excessive heat build-up or interfere with its proper ventilation.

RELATED EQUIPMENT

Complete telephone equipment (e.g., PABXs, telephones, telephone answering machines) is covered under Telephone Appliances and Equipment Certified for Canada (WYQQ7) or Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Information technology equipment is covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Equipment intended to be installed on the network side of the subscriber demarcation point and installed and maintained by telephone com-

Custom-built Telecommunications Equipment Certified for Canada (WYKM7)−*Continued*

panies, CATV companies, and similar network communications companies is covered under Communications Service Equipment Certified for Canada (DUZO7).

Cabinet, enclosure and rack/frame systems that are not complete information technology (IT) or telecommunications equipment, but include components and assemblies that are intended to power, protect, heat, cool of otherwise support IT or telecommunications equipment that will be installed at a later time, are covered under Information Technology and Communications Equipment Cabinet, Enclosure and Rack Systems Certified for Canada (NWIN7).

ADDITIONAL INFORMATION

For additional information, see Telecommunications Equipment Certified for Canada (WYIE7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 225 (1990), "Telecommunication Equipment," or CAN/CSA-C22.2 No. 60950-1 (2003), "Safety of Information Technology Equipment," and CAN/CSA-C22.2 No. 60950-21 (2003), "Safety of Information Technology Equipment – Remote Power Feeding," as appropriate.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Custom-built Telecommunication Equipment" (or "Custom Tel Eq." or "Custom Telecom").

* *

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TELEPHONES, CELLULAR CERTIFIED FOR CANADA (WYLR7)

USE

This category covers hand-held cellular telephones, transportable cellular telephones, and cellular telephone voice-dialers that may be used in households or commercial establishments, or on a vehicle, boat or the like, where the telephone interconnects with the telephone network through a radio transmitter and receiver.

FACTORS NOT INVESTIGATED

Possible physiological effects of these devices have not been investigated.

RELATED EQUIPMENT

Cell site equipment and similar equipment that forms the "base station" for a cellular communications network, and incorporates the interface to the wired telecommunications network, controllers, amplifiers, and transmitting/receiving equipment is covered under Telephone Appliances and Equipment Certified for Canada (WYQQ7).

ADDITIONAL INFORMATION

For additional information, see Telecommunications Equipment Certified for Canada (WYIE7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1 (1998), "Audio, Video, and Similar Electronic Equipment," CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, "Audio, Video and Similar Information Technology Equipment – Safety Requirements," or CAN/CSA-C22.2 No. 60950 or 60950-1, "Information Technology Equipment – Safety Requirements," as well as the product certification requirements to current Industry Canada Regulations.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Cellular Telephone" (or "Telephone, Cellular"), or the name of the specific type of product as shown in the individual Listings.

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TELEPHONE APPLIANCES AND EQUIPMENT CERTIFIED FOR CANADA (WYQQ7)

GENERAL

This category covers appliances and equipment intended to be electrically connected to a telecommunications network that has an operating voltage to ground that does not exceed 200 V peak, 300 V peak-to-peak or 150 V rms.

EQUIPMENT TYPES

Examples of equipment covered under this category include:

- Telephones, telephone answering devices, and telephone dialers that do not deliver a recorded message.
- Key telephone systems, automatic telephone call sequencers, customer administration panels, four-wire channel terminating units, intelligent switching subsystems, message transmitters, mounting shelves, PABX (private automatic branch exchange) systems, phone line TV interface systems, remote telephone base stations, telecontrollers, terminals, terminal sets, WATS boxes and cordless telephones.

INSTALLATION

Certain types of telecommunications equipment have been investigated for installation only over a noncombustible surface and are marked as such.

Certain types of telecommunications equipment have been investigated for installation only in restricted access locations, such as equipment rooms or closets, where access is limited to trained service personnel, and are marked as such.

RELATED EQUIPMENT

Information technology equipment, including other telecommunications appliances and equipment, is covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Modular assemblies (e.g., racks, circuit card assemblies) designed for field installation by trained service personnel are covered under Custom-built Telecommunications Equipment Certified for Canada (WYKM7).

Equipment intended to be installed on the network side of the subscriber demarcation point and installed and maintained by telephone companies, CATV companies and similar network communications companies is covered under Communications Service Equipment Certified for Canada (DUZO7).

Cabinet, enclosure and rack/frame systems that are not complete information technology (IT) or telecommunications equipment, but include components and assemblies that are intended to power, protect, heat, cool or otherwise support IT or telecommunications equipment that will be installed at a later time, are covered under Information Technology and Communications Equipment Cabinet, Enclosure and Rack Systems Certified for Canada (NWIN7).

Power distribution centers for communications equipment are covered under Power Distribution Centers for Communications Equipment Certified for Canada (QPQY7).

Power supplies for information technology and telecommunications equipment are covered under Power Supplies, Information Technology Equipment Including Electrical Business Equipment Certified for Canada (QQGQ7) and Power Supplies, Telephone Certified for Canada (QQJE7).

Accessories and Subassemblies

Field-installed accessories and subassemblies (component assemblies) to Listed equipment are provided with suitable markings and/or instructions, providing details on proper installation or assembly of the accessory/subassembly with equipment specified in the markings or instructions.

ADDITIONAL INFORMATION

For additional information, see Telecommunications Equipment Certified for Canada (WYIE7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 225, "Telecommunication Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Telephone Appliance," "Telephone Equipment" or "Telecommunication Equipment," or other appropriate product name as shown in the individual Listings.

The product name for field-installed accessories or subassemblies is provided with the additional word "Accessory" or "Subassembly."

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Telephone Appliances and Equipment Certified for Canada (WYQQ7)−*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

TELEMETERING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WYMG7)

GENERAL

This category covers telemetering transmitter coil assemblies, small generators, pulse generators, fluid-flow indicators and meters, transmitter and receiver units employing selsyn motors, and similar equipment.

The investigation of telemetering equipment marked "Raintight" includes a test designed to simulate exposure to beating rain to determine that such exposure will not result in the entrance of water.

Telemetering equipment provided with a factory seal of conductors entering the device enclosure is so identified on the product.

RELATED PRODUCTS

Equipment investigated for use only in the classified locations of automotive and marine service stations is covered under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Telemetering Equipment for Use in Hazardous Locations," "Section of Telemetering Equipment for Use in Hazardous Locations," "Telemetering Equipment Relating to Hazardous Locations," "Section of Telemetering Equipment Relating to Hazardous Locations," an appropriate abbreviation, or other appropriate product name as shown in the individual Listings.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

TELEMETERING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WYMV7)

GENERAL

This category covers telemetering transmitter coil assemblies, small generators, pulse generators, fluid-flow indicators and meters, transmitter and receiver units employing selsyn motors, and similar equipment.

Telemetering equipment provided with a factory seal of conductors entering the device enclosure is so identified on the product.

RELATED PRODUCTS

Equipment that has been investigated for use only in the classified locations of automotive and marine service stations appears under Control, Monitoring and Auxiliary Equipment Certified for Canada (EQXX7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Telemetering Equipment for Use in Hazardous Locations," "Section of Telemetering Equipment for Use in Hazardous Locations," "Telemetering Equipment Relating to Hazardous Locations" or "Section of Telemetering Equipment Relating to Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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TELEMETERING EQUIPMENT ACCESSORIES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WYOS7)

GENERAL

This category covers retrofit devices and kits consisting of parts and or subassemblies intended for field installation in certified telemetering equipment. These products have been investigated to determine that, when used in accordance with the manufacturer's instructions, they do not adversely affect the operation of the complete unit.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT IDENTITY*]
FOR USE WITH [specified product]
Control No.

* The appropriate product name as shown in the individual Classifications

* *

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TELEPHONES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (WZAT7)

USE AND INSTALLATION

This category covers telephones, sound-powered telephones, and communication equipment and systems. Unless identified as intrinsically safe or for use in Division 2 locations only, the equipment is of the explosion-proof design.

The handset and cord assembly should be carefully inspected and should be replaced if there is any evidence of damage or deterioration.

The equipment should be installed in accordance with the installation instructions provided with the product and in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Station equipment, power-supply equipment, protectors, and other equipment as detailed in the installation instructions should be located outside the hazardous area.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ″Telephone for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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AUTOMATIC ELECTRICAL CONTROLS FOR HOUSEHOLD AND SIMILAR USE CERTIFIED FOR CANADA (XAAA7)

AUTOMATIC ELECTRICAL PRESSURE-SENSING CONTROLS CERTIFIED FOR CANADA (XAAK7)

GENERAL

This category covers automatic electrical pressure-sensing controls with a minimum gauge pressure rating of -8.7 psi and a maximum gauge pressure rating of 609.6 psi intended for use in, on, or in association with equipment for household and similar use for heating, air conditioning, ventilation, and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof. They are intended for household or commercial use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

This category does not cover pressure-sensing in-line cord controls and automatic electrical pressure-sensing controls intended exclusively for industrial applications.

These devices are individual controls utilized as part of a control system with or without nonelectrical outputs or controls that are mechanically integral with multifunctional controls having nonelectrical outputs.

The automatic electrical pressure-sensing controls incorporate electronic devices. These products are investigated to the inherent safety, and to the operating values, operating times and operating sequence where such are associated with equipment safety.

When appropriate, these devices are additionally investigated for functional safety during normal and abnormal operation of the controlled appliance.

Class 2 output circuit — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

Ratings — These automatic electrical controls have a voltage rating not exceeding 600 V. The input, output, and other environmental ratings of the product are based on the manufacturer's declarations and verified through testing.

PRODUCT MARKINGS

Automatic electrical pressure-sensing controls are marked with the company's name or trademark, a distinctive catalog number, electrical ratings (e.g., volts, amps, hertz, kPa, load type), and the manufacture date code. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Automatic electrical pressure-sensing controls intended for gas- and oil-fired appliances, electric central furnaces, boilers and duct heaters are covered under Controls, Primary Safety Certified for Canada (MCCZ7), Switches Certified for Canada (MFHX7) and Controls, Limit Certified for Canada (MBPR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-E60730-1, ''Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements,'' and CAN/CSA-E730-2-6,

Automatic Electrical Pressure-sensing Controls Certified for Canada (XAAK7)−*Continued*

''Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Automatic Electrical Pressure Sensing Controls, Including Mechanical Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Automatic Electrical Pressure-sensing Control.''

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ELECTRIC ACTUATORS CERTIFIED FOR CANADA (XABE7)

GENERAL

This category covers electric actuators intended for use in, on, or in association with equipment for household and similar use for heating, air conditioning, ventilation, and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof. They are intended for household or commercial use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

This category does not cover electric actuators intended exclusively for industrial applications.

The individual certifications of electric actuators do not include valves or other connected mechanical loads. Motors used in electric actuators are investigated to the appropriate motor standards.

These devices are individual controls utilized as part of a control system with or without nonelectrical outputs or controls that are mechanically integral with multifunctional controls having nonelectrical outputs.

The electric actuators incorporate electronic devices and use thermistors. These products are investigated to the inherent safety, and to the operating values, operating times and operating sequence where such are associated with equipment safety.

When appropriate, these devices are additionally investigated for functional safety during normal and abnormal operation of the controlled appliance.

Electric actuators intended for plenum use are investigated for the application and their fire-resistance and low-smoke-producing characteristics in accordance with ULC/ORD-C2043, ''Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces.''

Class 2 output circuit — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

Ratings — These electric actuators have a voltage rating not exceeding 600 V. The input, output, and other environmental ratings of the product are based on the manufacturer's declarations and verified through testing.

PRODUCT MARKINGS

Electric actuators are marked with the company's name or trademark, a distinctive catalog number, electrical and thermal ratings (e.g., volts, amps, hertz, torque, temperature), and the manufacture date code. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

See Releasing Devices for Use in Hazardous Locations Certified for Canada (TBJW7), Temperature-indicating and -Regulating Equipment for Use in Hazardous Locations Certified for Canada (XBDV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-E60730-1, ''Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 24, ''Temperature-Indicating and -Regulating Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Thermostat,'' ''Temperature Limiter'' or ''Thermal Cut-out,'' or other appropriate product name as shown in the individual Listings.

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Electric Actuators Certified for Canada (XABE7)−*Continued*

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HUMIDITY-SENSING CONTROLS CERTIFIED FOR CANADA (XACI7)

GENERAL

This category covers automatic electric humidity-sensing controls intended for use in, on, or in association with equipment for household and similar use, including electrical controls for heating, air conditioning, ventilation, and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof. They are intended for household or commercial use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

This category does not cover automatic electrical humidity-sensing controls intended exclusively for industrial applications.

These devices are individual controls utilized as part of a control system with or without nonelectrical outputs or controls that are mechanically integral with multifunctional controls having nonelectrical outputs.

The humidity-sensing controls incorporate electronic devices and use thermistors. These products are investigated to the inherent safety, and to the operating values, operating times and operating sequence where such are associated with equipment safety.

When appropriate, these devices are additionally investigated for functional safety during normal and abnormal operation of the controlled appliance.

Class 2 output circuit — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

Ratings — These humidity-sensing controls have a voltage rating not exceeding 600 V. The input, output, and other environmental ratings of the product are based on the manufacturer's declarations and verified through testing.

PRODUCT MARKINGS

Humidity-sensing controls are marked with the company's name or trademark, a distinctive catalog number, electrical and thermal ratings (e.g., volts, amps, hertz, load type, temperature), and the manufacture date code. Additional markings may be required based on the individual certification reports.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 24, "Temperature-Indicating and -Regulating Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Humidity-sensing Control" or "Room Humidistat," or other appropriate product name as shown in the individual Listings.

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MISCELLANEOUS CONTROLS CERTIFIED FOR CANADA (XACN7)

GENERAL

This category covers automatic electrical controls for use in, on, or in association with equipment for household and similar use, including controls for heating, air conditioning, ventilation, and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof. They are intended for household or commercial use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

This category does not cover automatic electrical controls intended exclusively for industrial applications.

These controls are mechanically or electrically operated, and are responsive to or control such characteristics as temperature, pressure, passage of time, humidity, light, electrostatic effects, flow or liquid level, current, voltage, acceleration and the like. Automatic controls that do not specifically fall under the scope of other product categories are covered under this category.

Miscellaneous Controls Certified for Canada (XACN7)−*Continued*

These devices are individual controls utilized as part of a control system with or without nonelectrical outputs or controls that are mechanically integral with multifunctional controls having nonelectrical outputs.

The automatic electrical controls incorporate electronic devices and use thermistors. These products are investigated to the inherent safety, and to the operating values, operating times and operating sequence where such are associated with equipment safety.

When appropriate, these devices are additionally investigated for functional safety during normal and abnormal operation of the controlled appliance.

Class 2 output circuit — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

Ratings — These automatic electrical controls have a voltage rating not exceeding 600 V. The input, output, and other environmental ratings of the product are based on the manufacturer's declarations and verified through testing.

PRODUCT MARKINGS

Automatic electrical controls are marked with the company's name or trademark, a distinctive catalog number, electrical and thermal ratings (e.g., volts, amps, hertz, load type, temperature), and the manufacture date code. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Automatic controls intended for gas- and oil-fired appliances, electric central furnaces, boilers and duct heaters are covered under Controls, Primary Safety Certified for Canada (MCCZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-E60730-1, "Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements," in addition to one or more of the following:

CAN/CSA-E730-2-2, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Thermal Motor Protectors"

CAN/CSA-E730-2-3, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Thermal Protectors for Ballasts for Tubular Fluorescent Lamps"

CAN/CSA-E730-2-4, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Thermal Motor Protectors for Motor-Compressors of Hermetic and Semi-Hermetic Type"

CAN/CSA-E730-2-6, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Automatic Electrical Pressure Sensng Controls, Including Mechanical Requirements"

CAN/CSA-E730-2-7, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Timers and Time Switches"

CAN/CSA-E60730-2-8, "Automatic Electrical Controls for Household and Similar Use – Part 2-8: Particular Requirements for Electrically Operated Water Valves, Including Mechanical Requirements"

CAN/CSA-E60730-2-9, "Automatic Electrical Controls for Household and Similar Use – Part 2-9: Particular Requirements for Temperature Sensing Controls"

CAN/CSA-E730-2-10, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Motor Starting Relays"

CAN/CSA-E730-2-11, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Energy Regulators"

CAN/CSA-E730-2-12, "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Electrically Operated Door Locks"

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Foot-actuated Control" or "Electronic Protective Control," or other appropriate product name as shown in the individual Listings.

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Miscellaneous Controls Certified for Canada (XACN7)−*Continued*

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TEMPERATURE-SENSING CONTROLS CERTIFIED FOR CANADA (XACX7)

GENERAL

This category covers automatic electrical temperature-sensing controls for use in, on, or in association with equipment for household and similar use, including electrical controls for heating, air conditioning, ventilation, and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof. They are intended for household or commercial use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

This category does not cover automatic electrical temperature-sensing controls intended exclusively for industrial applications.

These devices are individual controls utilized as part of a control system with or without nonelectrical outputs or controls that are mechanically integral with multifunctional controls having nonelectrical outputs.

The automatic electrical temperature-sensing controls incorporate electronic devices and use thermistors. These products are investigated to the inherent safety, and to the operating values, operating times and operating sequence where such are associated with equipment safety.

When appropriate, these devices are additionally investigated for functional safety during normal and abnormal operation of the controlled appliance.

Class 2 output circuit — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

Equipment intended for agricultural use — Controls marked to indicate use in agricultural buildings have been investigated to the relevant requirements of the CEC and the "National Farm Building Code of Canada" (1995).

Ratings — These temperature-sensing controls have a voltage rating not exceeding 600 V. The input, output, and other environmental ratings of the product are based on the manufacturer's declarations and verified through testing.

PRODUCT MARKINGS

Automatic temperature-sensing controls are marked with the company's name or trademark, a distinctive catalog number, electrical and thermal ratings (e.g., volts, amps, hertz, load type, temperature), and the manufacture date code. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Automatic controls intended for gas- and oil-fired appliances, electric central furnaces, boilers and duct heaters are covered under Controls, Primary Safety Certified for Canada (MCCZ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-E60730-1, "Automatic Electrical Controls for Household and Similar Use - Part 1: General Requirements," and CAN/CSA-E60730-2-9, "Automatic Electrical Controls for Household and Similar Use - Part 2-9: Particular Requirements for Temperature Sensing Controls."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Thermostat," "Temperature Limiter" or "Thermal Cut-out," or other appropriate product name as shown in the individual Listings.

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TEMPERATURE-INDICATING AND -REGULATING EQUIPMENT CERTIFIED FOR CANADA (XAPX7)

GENERAL

This category covers electrical controls designed for heating and cooling equipment, room temperature or humidity regulation, and industrial uses. They are intended for household, commercial or industrial use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

These devices respond directly or indirectly to changes in temperature, humidity, or pressure to affect temperature control of equipment or appliance operation, etc. These devices may be investigated for functioning during the normal operation (regulating) of the controlled appliance or for functioning in the event of an abnormal condition (limiting) of the controlled appliance.

Ratings — Temperature-indicating and -regulating equipment is certified with a maximum rating of 600 V. A control rated in amps is tested with an inductive (75-80% power factor) load for alternating-current ratings unless a direct-current (noninductive) rating is specified.

Manual reset controls — An "M1" or "M2" marking indicates the following manual reset functions are provided:

- **M1** – Controls that automatically reset to the "closed" position after normal operating conditions have been restored if the reset means is held in the "reset" position.
- **M2** – Controls that do not automatically reset to the "closed" position if the reset means is held in the "reset" position.

Room thermostats — Room thermostats intended for the direct control of electric space-heating equipment that are to be permanently connected electrically and are provided with a marked or implied "off" position, disconnect all ungrounded poles of the supply circuit when adjusted to the "off" position.

Equipment suitable for outdoor use — Equipment identified with an enclosure type designation or as "Rain tight" or "Rainproof" is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Class 2 output circuits — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

Equipment intended for agricultural use — A control marked to indicate use in agricultural buildings has been tested in agricultural building environmental conditions.

Motor operators — The individual certifications of motor operators or actuators do not include valves or other connected mechanical loads.

PRODUCT MARKINGS

Temperature-indicating and -regulating equipment is marked with the company's name or trademark, a distinctive catalog number, and the electrical ratings. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Safety controls for gas- and oil-fired appliances, electric central furnaces, boilers and duct heaters are covered under Controls, Limit Certified for Canada (MBPR7), Controls, Primary Safety Certified for Canada (MCCZ7) or Switches Certified for Canada (MFHX7).

Controls for refrigeration and air conditioning (except remote, wall-mounted room thermostats) are covered under Controllers, Refrigeration Certified for Canada (SDFY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 24, "Temperature-Indicating and -Regulating Equipment," or CAN/CSA-E60730-1 (2002), "Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements," in addition to one or more of the following:

CAN/CSA-E730-2-2 (1994), "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Thermal Motor Protectors"

CAN/CSA-E730-2-3 (1994), "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Thermal Protectors for Ballasts for Tubular Fluorescent Lamps"

CAN/CSA-E730-2-4 (1994), "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Thermal Motor Protectors for Motor-Compressors of Hermetic and Semi-Hermetic Type"

CAN/CSA-E730-2-6 (1994), "Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Automatic Electrical Pressure Sensing Controls Including Mechanical Requirements"

CAN/CSA-E60730-2-9 (2001), "Automatic Electrical Controls for

Household and Similar Use – Part 2-9: Particular Requirements for Temperature Sensing Controls''
CAN/CSA-E730-2-10 (1994), ''Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Motor Starting Relays''
CAN/CSA-E730-2-11 (1994), ''Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Energy Regulators''
CAN/CSA-E730-2-12 (1994), ''Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Electrically Operated Door Locks''

Some thermostats for use with individual room electric space-heating devices covered under this category have also been investigated to Clause 4.3 (Thermal Regulation) of CAN/CSA-C828-(+), ''Performance Requirements for Thermostats Used with Individual Room Electric Space Heating Devices.'' This coverage includes wall-mounted line-voltage thermostats and built-in line-voltage thermostats (up to 1500 W) used as local zone thermostats, rated 120 to 240 V.

(+) Issue date of standard or latest addendum

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Temperature Indicating Equipment,'' ''Temperature Regulating Equipment'' or ''Temperature-indicating and -Regulating Equipment'' (or ''Temp. Ind. and Reg. Equip.''), or other appropriate product name as shown in the individual Listings.

Combination Listing/Classification Mark — A Listing Mark combined with a Classification Mark is provided on products that have additionally been investigated to Clause 4.3 of CAN/CSA-C828. The combined Listing/Classification Mark consists of the Listing Mark elements detailed above and the following marking: ''ALSO CLASSIFIED IN ACCORDANCE WITH THE THERMAL REGULATION REQUIREMENTS IN CLAUSE 4.3 OF CAN/CSA-C828-(+).''

(+) Issue date of standard or latest addendum

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

TEMPERATURE-INDICATING AND -REGULATING EQUIPMENT, ELECTRICAL CERTIFIED FOR CANADA (XATJ7)

GENERAL

This category covers electrical controls designed for heating and cooling equipment, room temperature or humidity regulation, and industrial uses. They are intended for household, commercial or industrial use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

These devices respond directly or indirectly to changes in temperature, humidity or pressure to effect temperature control, or equipment or appliance operation, etc. These devices may be investigated for functioning during the normal operation (regulating) of the controlled appliance or for functioning in the event of an abnormal condition (limiting) of the controlled appliance.

Ratings — Temperature-indicating and regulating equipment is certified with a maximum rating of 600 V. A control rated in amps is tested with an inductive (75-80% power factor) load for alternating current ratings unless a direct current (noninductive) rating is specified.

Manual reset controls — An ''M1'' or ''M2'' marking indicates the following manual reset functions are provided:

- **M1** – Controls that automatically reset to the ''closed'' position after normal operating conditions have been restored if the reset means is held in the ''reset'' position.
- **M2** – Controls that do not automatically reset to the ''closed'' position if the reset means is held in the ''reset'' position.

Room thermostats — Room thermostats intended for the direct control of electric space heating equipment that are to be permanently connected electrically and are provided with a marked or implied ''off'' position, disconnect all ungrounded poles of the supply circuit when adjusted to the ''off'' position.

Equipment suitable for outdoor use — Equipment identified with an enclosure type designation or as ''Rain tight'' or ''Rainproof'' is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7)..

Class 2 output circuits — A device that incorporates a Class 2 transformer or a Class 2 power source with provision for field wiring of the output circuit is marked to permit wiring as specified in Section 16 of the CEC for the Class 2 circuit.

Equipment intended for agricultural use — A control marked to indicate use in agricultural buildings has been tested in agricultural building environmental conditions.

Motor operators — The certifications of motor operators or actuators do not include valves or other connected mechanical loads.

PRODUCT MARKINGS

Temperature-indicating and regulating equipment is marked with the company's name or trademark, a distinctive catalog number, and the electrical ratings. Additional markings may be required based on the individual certification reports.

RELATED PRODUCTS

Safety controls for gas- and oil-fired appliances, electric central furnaces, boilers and duct heaters are covered under Controls, Limit Certified for Canada (MBPR7), Controls, Primary Safety Certified for Canada (MCCZ7) or Switches Certified for Canada (MFHX7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-E60730-1, ''Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements,'' together with the following appropriate Part 2 standards:

CAN/CSA-E730-2-3, ''Particular Requirements for Thermal Protectors for Ballasts for Tubular Fluorescent Lamps''
CAN/CSA-E730-2-4, ''Particular Requirements for Thermal Motor Protectors for Motor-Compressors of Hermetic and Semi-Hermetic Type''
CAN/CSA-E730-2-6, ''Particular Requirements for Automatic Electrical Pressure Sensing Controls Including Mechanical Requirements''
CAN/CSA-E60730-2-9, ''Particular Requirements for Temperature Sensing Controls''
CAN/CSA-E730-2-10, ''Particular Requirements for Motor Starting Relays''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Temperature Indicating Equipment'' or ''Temperature Regulating Equipment,'' or other appropriate product name as shown in the individual Listings.

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TEMPERATURE-INDICATING AND -REGULATING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XBAI7)

USE

This category covers electrical controls for heating and cooling equipment, room temperature or humidity regulation, and industrial uses. These devices respond directly or indirectly to changes in temperature, humidity, or pressure to effect temperature control, or equipment or appliance operation, etc.

RATINGS

Temperature-indicating and -regulating equipment is certified with a maximum rating of 600 V.

Controls intended for across-the-line motor starting and for making and breaking the circuit when the motor is stalled are tested at rated voltage and at six times motor full load running current for alternating-current motor ratings and at ten times motor full load running current for direct-current motor ratings.

TEMPERATURE-INDICATING AND -REGULATING EQUIPMENT FOR USE IN ZONE CLASSIFIED HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XBAI7)

A switching device rated in ''pilot duty'' is intended for control of electromagnetic loads, such as the solenoid of a motor controller or electrically operated valve, and is tested with an appropriate electromagnetic load.

A control rated in amps is tested with an inductive (75 – 80% power factor) load for alternating-current ratings unless a noninductive rating is specified, and with a noninductive load for a direct-current rating.

The certifications of motor operators do not include valves or other connected mechanical loads.

The thermostats in the individual certifications can be adjusted, or are preset to operate at various temperature settings. The exterior surfaces of the equipment to which the thermostats, or remote bulbs of the thermostats, are attached should not exceed the maximum safe temperature for the hazardous locations involved.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 24, ''Temperature-Indicating and Regulating Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Zone Classified Hazardous Locations Certified for Canada (AANZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Thermostat for Use in Hazardous Locations,'' ''Temperature-indicating Equipment for Use in Hazardous Locations'' or ''Temperature-indicating Equipment (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

* *

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TEMPERATURE-INDICATING AND -REGULATING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XBDV7)

GENERAL

This category covers electrical controls designed for heating and cooling equipment, room temperature or humidity regulation, and industrial uses. These devices respond directly or indirectly to changes in temperature, humidity, or pressure to effect temperature control, or equipment or appliance operation, etc.

Temperature-indicating and -regulating equipment is Listed with a maximum rating of 600 V. A control rated in amps is tested with an inductive (75-80% power factor) load for alternating-current ratings unless a noninductive rating is specified, and with a noninductive load for a direct-current rating.

Controls intended for across-the-line motor starting and for making and breaking the circuit when the motor is stalled are tested at rated voltage and at six times motor full-load running current for alternating-current motor ratings, and at ten times motor full-load running current for direct-current motor ratings.

A switching device rated in ''pilot duty'' is intended for control of electromagnetic loads, such as the solenoid of a motor controller or electrically operated valve, and is tested with an appropriate electromagnetic load.

A control rated in amps is tested with an inductive (75-80% power factor) load for alternating-current ratings unless a noninductive rating is specified, and with a noninductive load for a direct-current rating.

The motor operators in this category do not include valves or other connected mechanical loads.

The thermostats in this category can be adjusted, or are preset to operate at various temperature settings. The exterior surfaces of the equipment to which the thermostats, or remote bulbs of the thermostats, are attached should not exceed the maximum safe temperature for the hazardous locations involved.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

TEMPERATURE-INDICATING AND -REGULATING EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XBDV7) 631

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 24, ''Temperature-Indicating and -Regulating Equipment.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Thermostat for Use in Hazardous Locations,'' ''Temperature-indicating Equipment for Use in Hazardous Locations'' or ''Temperature-indicating Equipment (Associated Apparatus),'' or other appropriate product name as shown in the individual Listings.

* *

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TEMPORARY-LIGHTING STRINGS CERTIFIED FOR CANADA (XBRT7)

GENERAL

This category covers temporary-lighting strings rated 1500 W maximum, 125 V, intended for use indoors and outdoors to provide temporary illumination in accordance with Sections 30 and 76 of CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Temporary-lighting strings consist of a factory assembly of flexible cord or cable incorporating a series of Edison-base lampholders provided with lamp guards. The flexible cord is terminated at one end with an attachment plug, for connection to the source of supply, and may be provided with a cord connector at the opposite end.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 12, ''Portable Luminaires,'' and CSA Technical Information Letter No. B-31B, ''Interim Certification Requirements for Portable Luminaire Lighting Strings.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Temporary Lighting String.''

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RELOCATABLE POWER TAPS CERTIFIED FOR CANADA (XBYS7)

USE AND INSTALLATION

This category covers cord-connected multiple-receptacle extension boxes and relocatable power taps intended for indoor use as relocatable multiple-outlet extensions of a branch circuit to supply laboratory equipment, home workshops, home movie lighting controls, musical instrumentation, and to provide outlet receptacles for computers, audio and video equipment, and other equipment. They consist of one attachment plug and a single length of flexible cord terminated in a single enclosure in which are mounted two or more receptacles. They may, in addition, be provided with fuses or other supplementary overcurrent protection, switches, suppression components and/or indicator lights in any combination, or connections for cable, communications, telephone and/or antenna.

Relocatable power taps are intended to be directly connected to a permanently-installed branch circuit receptacle. Relocatable power taps are not intended to be series connected (daisy chained) to other relocatable power taps or to extension cords.

Relocatable power taps are not intended for use at construction sites and similar locations.

Relocatable power taps are not intended to be permanently secured to building structures, tables, work benches or similar structures, nor are they intended to be used as a substitute for fixed wiring. The cords of relocatable power taps are not intended to be routed through walls, windows, ceilings, floors or similar openings.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 21 (1995), "Cord Sets and Power Supply Cords."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Cord-connected, Multiple Receptacle Extension Box," "Relocatable Power Tap," "Power Tap" or "Outlet Strip."

The Listing Mark for this category requires the use of a holographic label.

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TERMINATION BOXES CERTIFIED FOR CANADA (XCKT7)

GENERAL

This category covers termination boxes (also known as splitters) that (1) consist of lengths of busbars, terminal strips, terminal plates, or terminal blocks provided with or having provision for wire connectors to accommodate incoming (main) or outgoing (branch) conductors, or both, and (2) are intended for use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

A "splitter box" has a length-to-width ratio not greater than 3 to 1. A "splitter trough" has a length-to-width ratio greater than 3 to 1. The length of the enclosure does not exceed 4900 mm. A splitter with a length greater than 4900 mm is considered a busway (see **RELATED PRODUCTS**).

RATINGS

Termination boxes have a current rating of 5000 A and less, and a voltage rating of 600 V or less.

PRODUCT MARKINGS

Termination boxes are intended for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Termination boxes intended for use with field-installed wire connectors or wire connector kits are marked stating which pressure terminal connectors or component terminal assemblies are to be used.

RELATED PRODUCTS

Equipment connected only by busbars to both input and output circuits and splitters greater than 4900 mm in length are covered under Busways and Associated Fittings Certified for Canada (CWFT7).

Equipment containing switching devices, relays or overcurrent devices is covered under the appropriate category; see Switchboards Certified for Canada (WEIR7), Industrial Control Equipment Certified for Canada (NIMX7) and Panelboards Certified for Canada (QEUY7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 76, "Splitters."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Termination Box," or the name of the specific type of product as shown in the individual Listings.

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JOINT SYSTEMS CERTIFIED FOR CANADA (XHBN7)

USE AND INSTALLATION

This category covers joint systems, which are specific constructions consisting of a wall or floor assembly and the materials designed to prevent the spread of fire through a linear opening within the wall or floor assembly. The specifications for materials in a joint system and the assembly of the materials are details that directly relate to the established ratings. Information concerning these details is described in the individual systems. The hourly ratings apply only to the complete systems. Individual components are designated for use in a specific system to achieve specified ratings. The individual components are not assigned ratings and are not intended to be interchanged between systems.

The Classification of joint systems contemplate installation in heated and air-conditioned environments unless stated otherwise in the description of the system.

Materials used in the joint systems are intended to be installed in accordance with the manufacturer's instructions provided with the material. The structural integrity of the floor or wall assembly has not been investigated as a result of the openings.

Unless otherwise indicated in the systems, the ratings for joint systems installed in walls apply when either face of the wall is exposed to fire. The ratings for joint systems installed in a floor apply when the underside or ceiling surface is exposed to fire.

The hourly fire-resistance ratings of the floor and wall assemblies in which, or between which, the joint system is intended to be installed are covered under Fire Resistance Ratings Certified for Canada (BXUV7). Where the individual joint system references back to fire-resistance designs, all construction details of the individual design are intended to be followed. In addition, all details relative to the construction of the wall or floor assembly contained in the individual joint system are intended to be followed. Where the construction details shown in the fire-resistance design and the joint system differ, such as in stud size and spacing, fastener spacing etc., the most restrictive construction details prevail.

The installation contractor and Authority Having Jurisdiction should ensure the specified properties of the packing and/or forming material are satisfied as noted in the individual Classifications. Such properties may include material type (mineral wool, backer rod, fiberglass, etc.), physical properties (size, density, etc.) and installation (depth, orientation, compression, etc.). Attention should also be given to ensure the installed material matches the manufacturer (where applicable) in the individual Classifications. The material and attributes are critical to the performance of the system and the ability of such system to satisfy the conditions of acceptance in CAN/ULC-S115 and the local building code. The fire-resistance rating of the system is dependent upon the use and installation of the materials specified within the respective system.

The joint sealant material thickness published in the fire-resistance designs is measured wet (unless otherwise specified in the individual systems) and may be susceptible to a percentage of shrinkage during the curing process. Joint systems are investigated after the sealant materials are fully cured. Refer to the individual Classifications for the investigated percentage of shrinkage.

Authorities Having Jurisdiction should be consulted as to the particular requirements covering the installation and use of these Classified systems.

NUMBERING SYSTEM

The systems are identified by an alphanumeric identification system. The alpha components identify the type of joint system and whether the joint system has movement capabilities. The numeric components identify the nominal joint width. In the case of head-of-wall joint systems, the width of the joint does not include the voids created under the crests of metal deck floor or roof systems.

The first two alpha characters identify the type of joint system as follows:

Alpha Characters	Description of Joint System
FF	Floor-to-floor
WW	Wall-to-wall
FW	Floor-to-wall
HW	Head-of-wall
CG	Wall-to-wall joints intended for use as corner guards

The third alpha character is either S or D. The S signifies joints systems that do not have movement capabilities. This D signifies joint systems that do have movement capabilities.

The numeric component uses sequential numbers to identify the nominal width of the joint systems. The significance of the number used is:

No. Range	Nom Joint Width
0000 – 9999	Less than or equal to 2 in.
1000 – 1999	Greater than 2 in. and less than or equal to 6 in.
2000 – 2999	Greater than 6 in. and less than or equal to 12 in.
3000 – 3999	Greater than 12 in. and less than or equal to 24 in.
4000 – 4999	Greater than 24 in.

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, ''Standard Method of Fire Tests of Firestop Systems.''

All joint systems described herein have been investigated with a minimum positive furnace pressure differential of 2.5 Pa (0.01 in. of water) maintained at a distance of 20 mm (0.78 in.) below horizontal test assemblies and at the mid-height of vertical test assemblies.

CAN/ULC-S115 defines the criteria for hourly F, FT, FH and FTH ratings, and an optional L rating for the joint systems. The F rating criteria prohibits flame passage through the system. The FT rating criteria prohibits flame passage through the system and requires the maximum temperature rise of the unexposed surface of the wall or floor assembly and on the fill material not to exceed 181°C (325°F) above ambient. The FH rating criteria prohibits flame passage through the system and requires acceptable hose stream performance. The FTH rating criteria combines all the requirements for the F, FT and FH ratings. The optional L rating criteria determines the amount of air leakage, in cu feet per linear foot of joint opening (CFM/Lin Ft), through the joint system at ambient and/or 204°C (400°F) air temperature at an air pressure differential of 75 Pa (0.30 in. of water). The L ratings are intended to assist Authorities Having Jurisdiction, and others, in determining the suitability of joint systems for the protection of openings in floors and smoke barriers for the purpose of restricting the movement of smoke in accordance with ANSI/NFPA 101 (2006), ''Life Safety Code.''

The surface flammability and smoke development characteristics of Classified materials used in joint systems are measured by the test method in CAN/ULC-S102.2, ''Method of Test for Surface Burning Characteristics of Floor Coverings, and Miscellaneous Materials and Assemblies.'' The flame spread index of these materials is less than 200 and the smoke developed index is less than 450. Surface burning characteristics Classifications are covered under Surface Burning Characteristics Certified for Canada (BIKT7).

Where indicated in the individual Classifications, joint sealant materials have also been investigated to ASTM C1241 (2000), ''Standard Test Method for Volume Shrinkage of Latex Sealants During Cure.''

UL MARK

Those materials identified by an (*) in the system description text are eligible to be produced under the Follow-Up Service Program of UL. The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service.

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THROUGH-PENETRATION FIRESTOP SYSTEMS CERTIFIED FOR CANADA (XHEZ7)

GENERAL

This category covers firestop systems, which are specific constructions consisting of a wall or floor assembly, a penetrating item passing through an opening in the wall or floor assembly, and the materials designed to prevent the spread of fire through the opening. The specifications for materials in a firestop system and the assembly of the materials are details that directly relate to the established ratings. Information concerning these details is described in the individual systems. The hourly ratings apply only to the complete systems. Individual components are designated for use in a specific system to achieve specified ratings. The individual components are not assigned ratings and are not intended to be interchanged between systems. Additionally, the substitution or elimination of components required in a system should not be made unless specifically permitted in the individual system or in these general guidelines.

The firestop systems covered under this category have been investigated with a minimum positive furnace pressure differential of 2.5 Pa (0.01 in. of water) maintained at a distance of 305 mm (12 in.) below horizontal test assemblies and 20 mm (0.78 in.) below the fill materials surrounding the penetrating items passing through vertical test assemblies.

CAN/ULC-S115, ''Standard Method of Fire Tests of Firestop Systems,'' defines the criteria for hourly F, FT, FH and FTH ratings, and an optional L rating for the firestop systems. The F rating criteria prohibits flame passage through the system. The FT rating criteria prohibits flame passage through the system and requires the maximum temperature rise on the unexposed surface of the wall or floor assembly, on the penetrating item and on the fill material not to exceed 181°C (325°F) above ambient. The FH rating criteria prohibits flame passage through the system and requires acceptable hose-stream performance. The FTH rating criteria combines all the requirements for the F, FT and FH ratings. The optional L rating criteria determines the amount of air leakage, in cu feet per minute per square foot of opening (CFM/sq ft), through the firestop system at ambient and/or 204°C (400°F) air temperature at an air-pressure differential of 75 Pa (0.30 in. of water). The L ratings are intended to assist Authorities Having Jurisdiction and others in determining the suitability of firestop systems for the protection of penetrations and miscellaneous openings in floors and smoke barriers for the purpose of restricting the movement of smoke in accordance with ANSI/NFPA 101, ''Life Safety Code.''

These firestop systems are intended for installation in heated and air-conditioned environments unless stated otherwise in the description of the system.

Materials used in the firestop systems are intended to be installed in accordance with the manufacturer's instructions provided with the materials. The fill, void or cavity material thickness published in the fire-resistance designs is measured wet and may be susceptible to a percentage of shrinkage during the curing process. Firestop systems are investigated after the fill, void or cavity materials are fully cured. Refer to the individual Classifications under Fill, Void or Cavity Materials Certified for Canada (XHHW7) for the investigated percentage of shrinkage.

The minimum and/or maximum annular space referenced in the firestop system must be maintained in order to achieve the hourly rating of the system. The annular space of a penetrating item through a rectangular opening is determined by measuring the distance from the closest point of the penetrating item to a point perpendicular to each of the four sides of the opening. The diagonal dimension is not intended to represent the annular space of a rectangular opening. The annular space between multiple penetrating items within a rectangular opening is determined by measuring the closest point of one penetrating item to the closest point of the adjacent penetrating item.

The structural integrity of the floor or wall assembly should be investigated when providing openings for the penetrating items.

These systems are Classified with respect to (1) installation in a wall only, (2) installation in a floor only, or (3) installation in either a wall or a floor. Unless otherwise indicated in the systems, the rating for firestop systems installed in walls apply when either face of the wall is exposed to fire. The ratings for firestop systems installed in a floor apply when the underside or ceiling surface is exposed to fire.

The hourly fire-endurance rating of the walls and floors incorporating these systems are not indicated. The hourly fire-endurance ratings of wall and floor assemblies are covered under Fire Resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7). Firestop systems that specify installation in concrete floors may include installation in floors consisting of fluted or corrugated steel deck topped with structural concrete, provided that (1) the concrete topping thickness measured above the top plane of the steel deck is equal to our greater than the minimum concrete thickness specified in the system, and (2) the firestop system does not require any portion of the forming material or fill material to extend below the bottom plane of the floor.

Authorities Having Jurisdiction should be consulted as to the particular requirements covering the installation and use of these Classified systems.

PENETRATING ITEMS

When the penetrating item is indicated as being pipe, the pipe is intended for the transport of gases, liquids and the like. The maximum diameter, the minimum wall thickness and the specific material for conduit and pipe are specified in each system. All nonmetallic pipe is intended to be of the solid-wall type unless indicated otherwise in the system. For electrical conductors, the maximum conductor size and the maximum number of conductors in the individual cables are specified in each system. All electrical conductors are intended to be copper unless indicated otherwise in the system.

Where the individual system specifies the penetrating item is to be rigidly supported on both sides of the wall or floor, the support system should be designed based upon the premise the firestop system provides no support.

Some systems do not include penetrating items. These firestop systems are intended to be used to seal openings where the penetrating items have been removed or where the penetrating items have not yet been installed.

FORMING MATERIALS

Forming materials specified for a firestop system should not be removed after cure of the fill material, unless removal is specified in the description of the system.

The installation contractor and Authority Having Jurisdiction should ensure the specified properties of the packing and/or forming material are satisfied as noted in the individual Classifications. Such properties may include material type (mineral wool, backer rod, fiberglass, etc.), physical properties (size, density, etc.) and installation (depth, orientation, compression, etc.). Attention should also be given to ensure the installed material matches the manufacturer (where applicable) in the individual Classifications. The material and attributes are critical to the performance of the system and the ability of such system to satisfy the conditions of acceptance in CAN/ULC-S115 and the local building code. The fire-resistance rating of the system is dependent upon the use and installation of the materials specified within the respective system.

NUMBERING SYSTEM

A complete description of each firestop system tested specifically to Canadian requirements can be found under this category. Systems tested concurrently to U.S. and Canadian requirements are covered under Through-penetration Firestop Systems (XHEZ). In either case, the systems are identified by an alpha-alphanumeric identification system. The alpha components identify the type of assembly being penetrated and the numeric component identifies the type of penetrating item.

The first alpha component is F, W or C. The F signifies a floor is being penetrated, the W signifies a wall is being penetrated, and C signifies either a floor or a wall is being penetrated.

The second alpha component may be any letter. The significance of the letter used is:

Letter	Description
A	Concrete floors with a minimum thickness less than or equal to 127 mm (5 in.)
B	Concrete floors with a minimum thickness greater than 127 mm (5 in.)
C	Framed floors
D	Steel decks in marine vessels
E through I	Not used at present time
J	Concrete or masonry walls with a minimum thickness less than or equal to 203.2 mm (8 in.)
K	Concrete or masonry walls with a minimum thickness greater than 203.2 mm (8 in.)
L	Framed walls
M	Bulkheads in marine vessels
N through Z	Not used at present time

The numeric component uses sequential numbers to identify the penetrating item. The significance of the number used is:

No. Range	Description
0000–0999	No penetrating items
1000–1999	Metallic pipe, conduit or tubing
2000–2999	Nonmetallic pipe, conduit or tubing
3000–3999	Electrical cable
4000–4999	Cable trays with electrical cable
5000–5999	Insulated pipe
6000–6999	Miscellaneous electrical penetrants, such as busducts
7000–7999	Miscellaneous mechanical penetrants, such as air ducts
8000–8999	Groupings of penetrations, including any combination of items listed above
9000–9999	Not used at present time

ADDITIONAL INFORMATION

For additional information, see Fire Resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, ''Standard Method of Fire Tests of Firestop Systems.''

Where indicated in the individual Classifications under Joint Systems Certified for Canada (XHBN7) and Fill, Void or Cavity Materials Certified for Canada (XHHW7), fill, void or cavity materials have also been investigated to ASTM C1241 (2000), ''Standard Test Method for Volume Shrinkage of Latex Sealants During Cure.''

UL MARK

Those materials identified by an (*) in the system description text are eligible to be produced under the Follow-Up Service Program of UL. The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service.

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CABINETS CERTIFIED FOR CANADA (XHGK7)

USE AND INSTALLATION

This category covers factory-built cabinets that penetrate one surface of a fire-resistive wall or floor assembly.

These cabinets are intended to be installed in accordance with the instructions provided with the product and the instructions specified in the individual through-penetration firestop system. Certification of these products contemplates installation within a controlled environment, unless stated otherwise in the individual certifications.

Properties of the cabinets other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the through-penetration firestop systems in which these products are installed is CAN/ULC-S115 (1995), ''Standard Method of Fire Tests of Firestop Systems.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CABINET
FOR USE IN PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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DUCT-WRAP MATERIALS CERTIFIED FOR CANADA (XHHD7)

USE AND INSTALLATION

This category covers duct-wrap materials manufactured from proprietary materials and processed into faced or unfaced batts or blankets.

Duct-wrap materials are intended to be installed in accordance with the instructions provided with the product and the instructions specified in the individual through-penetration firestop system. Certification of these products contemplates installation within a heated and air-conditioned environment, unless stated otherwise in the individual certifications.

Properties of the duct-wrap materials other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the through-penetration firestop systems in which these products are installed is CAN/ULC-S115 (1995), ''Standard Method of Fire Tests of Firestop Systems.''

UL MARK

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

DUCT WRAP MATERIALS
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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FILL, VOID OR CAVITY MATERIALS CERTIFIED FOR CANADA (XHHW7)

USE AND INSTALLATION

This category covers fill, void or cavity materials, which are proprietary materials investigated for use in joint systems and firestop systems. Except as specified below, properties of the fill, void or cavity materials other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

These materials are intended for installation at a job site in accordance with the application instructions provided with the product and with the instructions specified in the individual joint system or through-penetration firestop system.

The fill, void or cavity material thickness published in the fire-resistance designs is measured wet and may be susceptible to a percentage of shrinkage during the curing process. Firestop systems are investigated after the fill, void or cavity materials are fully cured. Refer to the individual certifications for the investigated percentage of shrinkage.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

See Joint Systems Certified for Canada (XHBN7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

Where indicated in the individual certifications, fill, void or cavity materials have additionally been investigated to ASTM C1241 (2000), "Standard Test Method for Volume Shrinkage of Latex Sealants During Cure."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

For fill, void or cavity materials investigated for use in through-penetration firestop systems:

FILL, VOID OR CAVITY MATERIAL
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

For fill, void or cavity materials investigated for use in joint systems:

FILL, VOID OR CAVITY MATERIAL
FOR USE IN JOINT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

For fill, void or cavity materials investigated for use in through-penetration firestop systems and joint systems:

FILL, VOID OR CAVITY MATERIAL
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS AND JOINT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

Where applicable, the following statement may be added to any of the Classification Marks shown above:

ALSO CLASSIFIED IN ACCORDANCE WITH ASTM C1241 STANDARD TEST METHOD FOR VOLUME SHRINKAGE OF LATEX SEALANTS DURING CURE

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FIRESTOP DEVICES CERTIFIED FOR CANADA (XHJI7)

USE AND INSTALLATION

This category covers firestop devices, which are factory-built products intended to provide a degree of fire resistance to openings in fire-resistive walls or floors to accommodate penetrating items, such as electrical cable, cable trays, conduit and pipe.

Firestop devices are intended to be installed in accordance with the instructions provided with the device and the instructions specified in the individual through-penetration firestop system. Certification of these firestop devices contemplates installation within a heated and air-conditioned environment, unless stated otherwise in the individual certifications.

Properties of the firestop devices other than their capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the through-penetration firestop systems in which these products are installed is CAN/ULC-S115 (2005), "Standard Method of Fire Tests of Firestop Systems."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

FIRESTOP DEVICE
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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FORMING MATERIALS CERTIFIED FOR CANADA (XHKU7)

USE AND INSTALLATION

This category covers forming materials investigated for use in firestop systems and joint systems. The forming materials are manufactured from proprietary materials, processed into the form of boards or sheets and formed into various sizes and shapes.

Properties of the forming materials other than their capacity to provide a degree of the fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

These materials are used as a form and seal to prevent leakage during the installation and curing of some fill, void or cavity materials and should be installed in accordance with the instructions specified in the individual joint system or through-penetration firestop system. After installation, forming materials are left in place and, together with the fill material, provide a degree of fire resistance for the opening.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

See Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7), Joint Systems Certified for Canada (XHBN7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the through-penetration firestop systems in which these products are installed is CAN/ULC-S115 (2005), ''Standard Method of Fire Tests of Firestop Systems.''

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

For forming materials investigated for use in through-penetration firestop systems:

FORMING MATERIAL
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA
AND UL FIRE RESISTANCE DIRECTORY
Control No.

For forming materials investigated for use in joint systems:

FORMING MATERIAL
FOR USE IN JOINT SYSTEMS
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA
AND UL FIRE RESISTANCE DIRECTORY
Control No.

For forming materials investigated for use in joint systems and through-penetration firestop systems:

FORMING MATERIAL
FOR USE IN JOINT SYSTEMS AND
THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL DIRECTORY OF PRODUCTS CERTIFIED FOR CANADA
AND UL FIRE RESISTANCE DIRECTORY
Control No.

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LIGHT-GAUGE FRAMING CERTIFIED FOR CANADA (XHLI7)

USE AND INSTALLATION

This category covers light-gauge framing members, which are proprietary products installed at the job site in accordance with the installation instructions provided with the product and with the instructions specified in the individual joint system.

Properties of the light-gauge framing members other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the joint systems in which these products are installed is CAN/ULC-S115 (2005), ''Standard Method of Fire Tests of Firestop Systems.''

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

LIGHT GAUGE FRAMING
FOR USE IN JOINT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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MECHANICAL JOINT ASSEMBLIES CERTIFIED FOR CANADA (XHLP7)

USE AND INSTALLATION

This category covers mechanical joint assemblies, which are proprietary products installed at the job site in accordance with the application instructions provided with the product and with the instructions specified in the individual joint system.

Properties of the mechanical joint assemblies other than the capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the joint systems in which these products are installed is CAN/ULC-S115 (2005), ''Standard Method of Fire Tests of Firestop Systems.''

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MECHANICAL JOINT ASSEMBLIES
FOR USE IN JOINT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.

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MEMBRANES CERTIFIED FOR CANADA (XHLR7)

USE AND INSTALLATION

This category covers membrane materials that are proprietary products intended to be installed at the job site in accordance with the application instructions provided with the product and with the instructions specified in the individual joint system.

Properties of the membrane materials other than the capacity to provide a degree of fire resistance to openings in fire-rated walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the joint systems in which these products are installed is CAN/ULC-S115 (2005), ''Standard Method of Fire Tests of Firestop Systems.''

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

MEMBRANE
FOR USE IN JOINT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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PIPE-COVERING MATERIALS CERTIFIED FOR CANADA (XHLU7)

USE AND INSTALLATION

This category covers pipe-covering materials, which are intended to be installed in accordance with the instructions specified in the individual through-penetration firestop systems. Certification of these products contemplates installation within a heated and air-conditioned environment, unless stated otherwise in the individual certifications.

Properties of the pipe-covering materials other than their capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the through-penetration firestop systems in which these products are installed is CAN/ULC-S115 (2005), "Standard Method of Fire Tests of Firestop Systems."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

PIPE-COVERING MATERIAL
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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THROUGH-PENETRATING PRODUCTS CERTIFIED FOR CANADA (XHLY7)

USE AND INSTALLATION

This category covers through-penetrating products that are proprietary products (cable, conduit, pipe and tubing) whose fire-resistive properties have been investigated for specific applications in which they pass through openings in fire-rated walls or floors, or both, within a building.

Properties of the through-penetrating products other than their capacity to provide a degree of fire resistance to openings provided in fire-resistive walls or floors have not been investigated.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

For information on related products, see Fire-resistance Ratings – CAN/ULC-S101 Certified for Canada (BXUV7) and Through-penetration Firestop Systems Certified for Canada (XHEZ7).

ADDITIONAL INFORMATION

For additional information, see Fire-resistance Ratings Certified for Canada (BXRH7).

REQUIREMENTS

The basic standard used to investigate the through-penetration firestop systems in which these products are installed is CAN/ULC-S115 (2005), "Standard Method of Fire Tests of Firestop Systems."

UL MARK

The Classification Mark of UL on the product or on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

THROUGH-PENETRATING PRODUCT
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
Control No.
*** ***

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TIME-INDICATING AND -RECORDING APPLIANCES CERTIFIED FOR CANADA (XHNR7)

USE AND INSTALLATION

This category covers electrically operated clocks that form parts of a master clock system and similar time-indicating and -recording appliances intended primarily for industrial and commercial installations on circuits of 300 V or less.

RELATED PRODUCTS

Clocks intended primarily for household use and installations are covered under Clocks, Household Certified for Canada (DROX7).

Clock-operated switches and timers designed to close and open circuits to a load at predetermined intervals are covered under Switches, Clock Operated Certified for Canada (WGZR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Time Indicating Appliance" or "Time Recording Equipment," or other appropriate product name as shown in the individual Listings.

*** ***

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TIME-INDICATING AND -RECORDING APPLIANCES FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XIAZ7)

GENERAL

This category covers intrinsically safe chart drives.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Chart Drive for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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TOOLS CERTIFIED FOR CANADA (XJXX7)

MANUAL AND SEMIAUTOMATIC METAL-SAWING MACHINES CERTIFIED FOR CANADA (XJYQ7)

USE AND INSTALLATION

This category covers manual and semiautomatic metal-sawing machines that use a saw blade (tool) to cut off or change the shape of the work piece and are intended for use in industrial or commercial applications. These machines are manually operated or capable of performing one cutting cycle of operation, which is manually actuated.

This equipment is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These machines are not intended for the handling of hazardous material.

The use of some equipment involves certain inherent hazards related to the risk of injury that cannot be wholly eliminated by practical design features. Such hazards have been reduced to an acceptable degree.

RELATED EQUIPMENT

Automated equipment designed to perform repetitive manufacturing-related cutting or sawing tasks is covered under Factory Automation Equipment Certified for Canada (GPNY7).

Robotics and associated control equipment are covered under Robots and Robotic Equipment Certified for Canada (TETZ7).

Industrial control panels are covered under Industrial Control Panels Certified for Canada (NITW7).

Saws used in residential applications are covered under Tools, Stationary Certified for Canada (XKJU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II,'' CSA-C22.2 No. 14, ''Industrial Control Equipment,'' and CSA-C22.2 No. 73, ''Construction and Test of Electrically Equipped Machine Tools.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Metal-sawing Machine.''

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PORTABLE ELECTRIC TOOLS CERTIFIED FOR CANADA (XJYW7)

USE

This category covers tools intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'':

- hand-held motor-operated or magnetically driven electric tools, such as drills, grinders, polishers, sanders, circular saws, shears, reciprocating saws, routers, etc., the rated voltage of the tools being not more than 250 V for single-phase ac or dc tools, and 440 V for three-phase ac tools.
- rechargeable-battery-powered motor-operated or magnetically driven tools and the battery packs for such tools. It covers the tools incorporating detachable, integral and separable battery packs. The maximum rated voltage for tools and battery packs is 75 V dc.

Portable Electric Tools Certified for Canada (XJYW7)−*Continued*

- rechargeable-battery-powered motor-operated or magnetically driven tools and the battery packs for such tools that are also operated and/or charged directly from the mains or a nonisolated source, including tools provided with integral battery chargers. It covers the tools incorporating detachable, integral or separable battery packs. The maximum rated voltages for tools are 250 V single-phase ac or dc mains source and 75 V dc battery source. The maximum rated voltage for battery packs is 75 V dc.

This category also covers:

- tools with an electric heating element
- hand-held electric tools that can be mounted on a support for use as fixed tools without any alteration of the tool itself, and only where the requirements for such support are given in a relevant Part 2 standard
- motors not isolated from the supply, and having basic insulation not designed for the rated voltage of the tools
- rechargeable-battery-powered motor-operated or magnetically driven tools and the battery packs for such tools
- tools that are also operated and/or charged directly from the mains or a nonisolated source

This category does not cover:

- hand-held tools intended to be used in the presence of explosive atmosphere (dust, vapor or gas)
- hand-held tools used for preparing and processing food
- hand-held tools for medical purposes
- heating tools
- tools using general-purpose batteries installed by the user

REBUILT PRODUCTS

This category also covers portable electric tools that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt portable electric tools are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt portable electric tools are subject to the same requirements as new portable electric tools.

SPECIAL CONSIDERATIONS

These products are investigated from the standpoint of risk of personal injury, electric shock and fire.

These devices are not intended for the handling of hazardous material.

Precautions should be taken during the use of sanding machines to prevent formation of combustible dust-air mixtures with surrounding atmospheres.

Some products in this category have cutting or moving parts, presenting certain inherent hazards related to risk of injury that cannot be wholly eliminated by practical design features. The products are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of injury where consideration has been given to the required utility of the product. Such risks have been reduced to an acceptable degree in the certified equipment.

Attachments that perform functions other than intended by the basic design have not been investigated unless specifically mentioned in the individual certifications and covered in the installation and use instructions.

Except for tools that are Class II construction, all tools are provided with means for earthing. Class II tools require normal care in handling. They should not be used under conditions which would be considered hazardous with tools of conventional construction, e.g., with either the tool or user in contact with water.

A ''square within a square'' symbol ⧈ designates a double-insulated Class II tool. Protection against electric shock has been achieved by basic insulation, and additional precautions, such as double or reinforced insulation, are provided. Tools identified as Class II are not provided with a means for earthing (grounding).

FACTORS NOT INVESTIGATED

Any potential health hazards that may be associated with the use of portable tools, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents, have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 60745-1, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 1: General Requirements,'' in addition to one or more of the following:

CAN/CSA-C22.2 No. 60745-2-1, ''Hand-Held Motor-Operated Electric

Portable Electric Tools Certified for Canada (XJYW7)−*Continued*

Tools – Safety – Part 2-1: Particular Requirements for Drills and Impact Drills''
CAN/CSA-C22.2 No. 60745-2-2, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches''
CAN/CSA-C22.2 No. 60745-2-3, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-3: Particular Requirements for Grinders, Polishers and Disk-Type Sanders''
CAN/CSA-C22.2 No. 60745-2-4, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-4: Particular Requirements for Sanders and Polishers Other Than Disk Type''
CAN/CSA-C22.2 No. 60745-2-5, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-5: Particular Requirements for Circular Saws''
CAN/CSA-C22.2 No. 60745-2-6, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-6: Particular Requirements for Hammers''
CAN/CSA-C22.2 No. 60745-2-8, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-8: Particular Requirements for Shears and Nibblers''
CAN/CSA-C22.2 No. 60745-2-9, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-9: Particular Requirements for Tappers''
CAN/CSA-C22.2 No. 60745-2-11, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-11: Particular Requirements for Reciprocating Saws''
CAN/CSA-C22.2 No. 60745-2-12, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-12: Particular Requirements for Concrete Vibrators''
CAN/CSA-C22.2 No. 60745-2-14, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-14: Particular Requirements for Planers''
CAN/CSA-C22.2 No. 60745-2-16 (2009), ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-16: Particular Requirements for Tackers''
CAN/CSA-C22.2 No. 60745-2-17, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-17: Particular Requirements for Routers and Trimmers''
CAN/CSA-C22.2 No. 60745-2-18, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-18: Particular Requirements for Strapping Tools''
CAN/CSA-C22.2 No. 60745-2-19, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-19: Particular Requirements for Jointers''
CAN/CSA-C22.2 No. 60745-2-20, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-20: Particular Requirements for Band Saws''
CAN/CSA-C22.2 No. 60745-2-21, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-21: Particular Requirements for Drain Cleaners''
CAN/CSA-C22.2 No. 60745-2-22 (2012), ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-22: Particular Requirements for Cut-Off Machines''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Tool,'' ''Portable Tool,'' ''Portable Electric Tool,'' ''Drill,'' ''Circular Saw,'' or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word ''Rebuilt,'' ''Refurbished'' or ''Remanufactured'' precedes the product name.

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CHAIN SAWS, ELECTRIC CERTIFIED FOR CANADA (XJZV7)

USE

This category covers cord-connected electric chain saws intended for use on nominal system voltages of 250 V or less, in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Chain saws are divided into two classes:

Class 2A — A professional chain saw, intended for use by trained workers, where the operator is expected to use the chain saw for extended periods of time on a daily basis.

Class 2C — A consumer chain saw, intended for general use by homeowners, cottagers, campers, etc., and for general applications, such as cleaning, pruning and cutting firewood.

Chain Saws, Electric Certified for Canada (XJZV7)−*Continued*

SPECIAL CONSIDERATIONS

These products are investigated from the standpoint of risk of personal injury, electric shock and fire.

Some products in this category have cutting or moving parts, presenting certain inherent hazards related to risk of injury that cannot be wholly eliminated by practical design features. The products are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of injury where consideration has been given to the required utility of the product. Such risks have been reduced to an acceptable degree in the certified equipment.

Attachments that perform functions other than intended by the basic design have not been investigated unless specifically mentioned in the individual certifications and covered in the installation and use instructions.

Except for chain saws marked ''double insulated,'' all saws are provided with means for grounding. Double-insulated chain saws require normal care in handling. They should not be used under conditions which would be considered hazardous with tools of conventional construction, e.g., with either the tool or user in contact with water.

FACTORS NOT INVESTIGATED

Any potential health hazards that may be associated with the use of portable tools, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents, have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 147 (1990), ''Motor-Operated Gardening Appliances,'' and CAN/CSA-Z62.1, ''Chain Saws.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Chain Saw'' or ''Electric Chain Saw,'' or other appropriate name as shown in the individual Listings.

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TOOLS, PORTABLE CERTIFIED FOR CANADA (XKFR7)

GENERAL

This category covers cord-connected portable tools, such as drills, hand grinders, polishers, sanders, hand circular saws, drain cleaners, pipe benders, etc.

The tools in this category are divided into two broad groups:

Portable Electric Tools — Hand tools usually employing motors subject to wide and minor fluctuations of load, such as drills, orbital sanders, saws, hand grinders, nibblers, shears, disc sanders, etc.

Transportable Tools — Tools that are not hand held and intended for the tool to be taken to the work piece to perform its function. Such tools include diamond-core drills, drain cleaners and pipe benders.

The load on a portable electric tool varies to the extent that the amp rating marked on such a tool may not be the maximum current that can be drawn by the tool under normal use conditions, but is rather an indication of the thermal capacity of the motor employed. It is indicative of the loading to which the tool may be continuously subjected without causing overheating.

REBUILT PRODUCTS

This category also covers rebuilt portable tools that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt portable tools are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt portable tools are subject to the same requirements as new portable tools.

SPECIAL CONSIDERATIONS

The suitability of the grinding wheels for the peripheral speeds involved has not been investigated.

Precautions should be taken during the use of sanding machines to prevent formation of combustible dust-air mixtures with surrounding atmospheres.

The use of some tools involves certain inherent accident hazards that cannot be wholly eliminated by practical design features. Such hazards have been reduced to an acceptable degree in the certified tools.

Tools, Portable Certified for Canada (XKFR7)−*Continued*

Unless specifically mentioned in literature supplied with the tool, the certification of an individual tool is not intended to cover attachments that may be offered by the manufacturer to perform operations other than intended by the design of the basic tool.

Except for tools marked with ''double-insulated,'' all tools are provided with means for grounding. Double-insulated tools require normal care in handling. They are not intended to be used under conditions that would be considered hazardous with tools of conventional construction, i.e., with either the tool or user in contact with water, unless it's obvious that the certification intends the tool to be operated under such conditions.

RELATED PRODUCTS

Tools intended for servicing and repairing automobiles are covered under Garage Equipment Certified for Canada (JGWV7).

Tools intended for use in finishing floors in household and commercial environments are covered under Floor-finishing Machines Certified for Canada (IMSR7).

Tools intended for use in gardening and lawn care are covered under Gardening Appliances Certified for Canada (JHKT7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 71.1 (1989), ''Portable Electric Tools.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Tool,'' ''Portable Tool,'' ''Portable Electric Tool,'' ''Drill,'' ''Circular Saw,'' or other appropriate product name, as shown in the individual Listings.

For rebuilt products, the word ''Rebuilt'' precedes the product name.

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SEMIAUTOMATIC WOODWORKING EQUIPMENT CERTIFIED FOR CANADA (XKHS7)

USE AND INSTALLATION

This category covers production and accessory equipment for attended or unattended fabrication or modification of material used in manufacturing products or subassemblies in industrialized or commercial applications. The equipment has a total connected power of 3.7 kw (5 hp) or greater or is rated three-phase. Equipment in this category is designed to be set up for specific manufacturing applications, such as cutting, drilling, planing, or other modification of materials of wood or plastic laminate. The equipment is intended to be installed in accordance with the Canadian Electrical Code Part 1, Safety for Electrical Installations, C22.1-98.

SPECIAL CONSIDERATIONS

Devices included in this category are not intended for the handling of hazardous material. The use of some equipment involves certain inherent hazards related to the risk of injury that cannot be wholly eliminated by practical design features. Such hazards have been reduced to an acceptable degree in the Listed equipment.

RELATED EQUIPMENT

Self-sustaining production equipment designed to be programmed for the assembly of products or subassemblies in a specific manufacturing application, such as assembly of components, packaging, sorting, or counting of parts, and which only incorporates manufacturing processes involving heating or cooling, drying, or gluing of parts are covered by Factory Automation Equipment Certified for Canada (GPNY7).

Robotics and associated control equipment are covered under Robots and Robotic Equipment Certified for Canada (TETZ7). Industrial Control Panels Certified for Canada are covered under their own category (NITW7).

Equipment that may be used in residential applications is covered under Tools, Stationary Certified for Canada (XKJU7).

REBUILT EQUIPMENT

This category also covers rebuilt semi-automatic woodworking equipment that may or may not be rebuilt by the original manufacturer. Rebuilt semi-automatic woodworking equipment is factory rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned

Semiautomatic Woodworking Equipment Certified for Canada (XKHS7)−*Continued*

component parts. Rebuilt semi-automatic woodworking equipment is subject to the same requirements as new semi-automatic woodworking equipment.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirements used to investigate products in this category are C22.2 No. 0, General Requirements, C22.2 No. 14, Industrial Control Equipment, and C22.2 No. 105, Electrical Equipment for Woodworking Machinery.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Semi-automatic Woodworking Equipment'' or other appropriate product name as shown in the individual Listing. For rebuilt semi-automatic woodworking equipment the product name is preceded by the word ''Rebuilt,'' ''Refurbished'' or ''Remanufactured.''

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TOOLS, STATIONARY CERTIFIED FOR CANADA (XKJU7)

USE

This category covers single-phase electric tools of the bench type intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' when connected to a nominal system voltage of 240 V or less.

This category does not cover:

a) tools intended for industrial use,
b) tools covered by CSA-C22.2 No. 73, ''Construction and Test of Electrically Equipped Machine Tools,'' and CSA-C22.2 No. 105, ''Construction and Test of Electrical Equipment for Woodworking Machinery,'' or
c) magnetic drill presses or diamond core drills, which are covered by CAN/CSA-C22.2 No. 71.1, ''Portable Electric Tools.''

SPECIAL CONSIDERATIONS

These devices are not intended for the handling of hazardous material.

These products are investigated from the standpoint of risk of personal injury, electric shock and fire.

Some products in this category have cutting or moving parts, presenting certain inherent hazards related to risk of injury that cannot be wholly eliminated by practical design features. The products are required to employ, in varying degrees, guards, safety releases, interlocks, markings, etc., to reduce the risk of injury where consideration has been given to the required utility of the product. Such risks have been reduced to an acceptable degree in the certified equipment.

Precaution should be taken during the use of sanding machines to prevent formation of combustible dust-air mixtures with surrounding atmospheres.

Attachments that perform functions other than intended by the basic design have not been investigated unless specifically mentioned in the individual certifications and covered in the installation and use instructions.

Except for tools marked ''double insulated,'' all tools are provided with means for grounding. Double-insulated tools are investigated for residential use only and require normal care in handling. They should not be used under conditions which would be considered hazardous with tools of conventional construction, e.g., with either the tool or user in contact with water.

PRODUCT MARKINGS

In some instances, attachments may be certified. In these cases, the attachments are marked ''Use only with [specific Listed stationary and fixed tools].'' For example, a certified hand attachment may be marked ''Use only with Listed power supply Model XX,'' or a certified feed control device may be marked ''Use only with Listed radial arm saw Model XX.''

FACTORS NOT INVESTIGATED

Any potential health hazards that may be associated with the use of portable tools, such as dispersion of pathological, biological, chemical, physical, radioactive, or other contaminating agents, have not been investigated.

RELATED PRODUCTS

Tools, Stationary Certified for Canada (XKJU7)−*Continued*

Tools intended primarily for use in garages and service stations are covered under Garage Equipment Certified for Canada (JGWV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 71.2, ''Electric Bench Tools.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names as appropriate: ''Tool,'' ''Stationary Tool,'' ''Table Saw,'' ''Wood Working Machine,'' ''Drill Press,'' ''Miter Saw,'' or other appropriate product name as shown in the individual Listings.

* *

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TOOLS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XKVL7)

PORTABLE ELECTRIC TOOLS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XKWH7)

USE

This category covers cord-connected and battery-operated power tools intended for securing fasteners. This category does not cover tools such as drills, grinders, circular saws or other equipment that, under normal operation, may produce arcs, sparks or hot surfaces.

The load on certain tools varies within a wide range. Accordingly, the amp rating marked on such a tool may not be the maximum current that can be drawn by the tool under normal use conditions, but is rather an indication of the thermal capacity of the motor employed. It is indicative of the loading to which the tool may be continuously subjected without causing overheating.

This category does not cover attachments such as grinding wheels, sanders, polishers or other attachments that may be offered by the manufacturer to perform operations other than intended by the design of the basic tool.

The use of some tools involves certain inherent hazards related to the risk of injury that cannot be wholly eliminated by practical design features. Such hazards have been reduced to an acceptable degree in the certified tools.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standards used to investigate products in this category are CAN/CSA-C22.2 No. 60745-1, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 1: General Requirements,'' and CAN/CSA-C22.2 No. 60745-2-2, ''Hand-Held Motor-Operated Electric Tools – Safety – Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Tool for Use in Hazardous Locations,'' ''Portable Tool for Use in Hazardous Locations'' or ''Portable Electric Tool for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

Portable Electric Tools for Use in Hazardous Locations Certified for Canada (XKWH7)−*Continued*

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TORCHES CERTIFIED FOR CANADA (XLFX7)

FUEL GAS TORCHES CERTIFIED FOR CANADA (XMHT7)

GENERAL

This category covers fuel-gas torches of the air-aspirating type, designed to operate with commercial-grade fuel gases other than acetylene as indicated in the individual certifications. The torches are designated as hand torches or portable torches.

Hand torches are units consisting of a shutoff valve and burner assembly. The fuel for the torches is stored in a separate fuel-gas-container assembly connected to the torch, or in an integral container assembly that may be refillable. Integral containers do not exceed 4.0 fluid oz. capacity.

Portable torches include a handle with a shutoff valve, hose, regulator and a burner assembly, and may also include a fuel container of the Canadian Transportation Commission cylinder type.

Torches for use with LP-gas are intended for use in accordance with ANSI/NFPA 58, ''Storage and Handling of Liquefied Petroleum Gases.''

RELATED PRODUCTS

Oxy-fuel torches are covered under Blowpipes and Torches Certified for Canada (BDCT7).

MPS-fuel-gas torches are covered under Methylacetylene-Propadiene Stabilized Fuel Gas Torches Certified for Canada (XMOS7).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA/CGA 2.29 (1997), ''Hand-Held Torches for Fuel Gases.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Butane Torch,'' ''LP-gas Torch'' or ''Propane Torch.''

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METHYLACETYLENE-PROPADIENE STABILIZED FUEL GAS TORCHES CERTIFIED FOR CANADA (XMOS7)

USE

This category covers air-aspirating-type torches designed to operate on methylacetylene-propadiene stabilized (MPS) fuel gas. The torches are designated as hand torches or portable torches.

Hand torches are completely self-contained assemblies consisting of a burner and fuel container. The fuel container is a Canadian Transportation Commission (CTC) cylinder having a water capacity not exceeding 2-1/2 lbs. Unless otherwise indicated in the individual certifications, such containers are of the disposable type and are not refillable.

Portable torches include a burner and a fuel container of the CTC cylinder type. The burner may be integral with the fuel container or may be a separate unit. A separate burner is connected to the fuel container by a length of hose included as part of the torch assembly.

Some of these torches may be qualified for use with LP-gas (liquefied petroleum). Such torches can be identified by a reference to LP-gas appearing in the Certification Mark.

RELATED PRODUCTS

Methylacetylene-Propadiene Stabilized Fuel Gas Torches Certified for Canada (XMOS7)−*Continued*

Oxy-fuel torches are covered under Blowpipes and Torches Certified for Canada (BDCT7).

Fuel-gas torches are covered under Fuel-gas Torches Certified for Canada (XMHT7).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA/CGA 2.29 (1997), ''Hand-Held Torches for Fuel Gases.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''MPS Fuel Gas Torch'' or ''LP/MPS Fuel Gas Torch.''

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TOYS CERTIFIED FOR CANADA (XNIZ7)

USE

This category covers electrically operated toys and simulated miniatures of full-sized appliances in forms that may not necessarily perform the expected function of the copied appliance, including toy phonographs with motor-driven turntables and mechanical sound reproduction. They are intended to be used on nominal 120-volt branch circuits and are for indoor use.

PRODUCT MARKINGS

Markings on the product indicate the age level for which the toy or play article is intended. As with all electric products, adult guidance or supervision may be necessary.

FACTORS NOT INVESTIGATED

All food products supplied with toys are manufactured in accordance with Canadian requirements. Compliance with these regulations has not been investigated by UL.

RELATED PRODUCTS

Transformers for toys are covered under Transformers, Toy Certified for Canada (XRBV7).

Electric hobby and sports equipment is covered under Hobby and Sports Equipment Certified for Canada (MSVW7).

Products intended for use primarily by adults are covered under Hobby and Sports Equipment Certified for Canada (MSVW7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 149 (1972), ''Electrically Operated Toys.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and one of the following product names: ''Toy,'' ''Electric Toy,'' ''Toy Oven,'' ''Toy Popcorn Maker,'' or other appropriate product name as shown in the individual Listings.

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TRANSFER SWITCHES FOR USE IN FIRE PUMP MOTOR CIRCUITS CERTIFIED FOR CANADA (XNVE7)

GENERAL

This category covers separately mounted, open and enclosed automatic transfer switches intended for use in fire pump motor circuits, including associated control devices, with a maximum rating of 600 V ac and 4000 A.

These transfer switches are intended for use in fire pump motor circuits covered by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I'' (CEC).

Fire pump power transfer switches are automatic transfer switches that transfer a fire pump motor load from a normal supply to an alternate (on-site generated or second utility) supply in the event of failure of the normal supply, and automatically return the load to the normal supply when the normal supply is reestablished. No other loads, other than the fire pump motor, are intended to be connected to the fire pump power transfer switch.

If not marked to indicate that the alternate source is a second utility, the alternate source is considered to be an on-site generated supply. Such transfer switches include frequency sensing and sensing of at least one phase of the alternate (generator-set) source to enable transfer to the alternate source. Such transfer switches have a switching contact(s) to initiate the starting of an engine generator set. Such transfer switches may include a disconnect switch or an isolating switch for the alternate source (generator set). If it does, this transfer switch is equipped with pilot contacts for supervision and pilot contacts to override the engine start signal.

Additional sensing devices that may initiate or delay transfer have been investigated in accordance with the manufacturer's marked operating values.

The enclosure of an enclosed transfer switch has been investigated for its ability to protect against water dripping on the enclosure from the downward vertical.

Transfer switches for use in fire pump circuits are not suitable for use as service equipment.

Transfer switches are required to be designed so that the load cannot remain simultaneously disconnected for both the normal and alternative sources when either or both sources are available.

These transfer switches are marked with a short-circuit rating and are intended for connection to circuits in which the available fault current does not exceed the marked short-circuit rating.

These transfer switches may be marked to indicate that protection is intended to be provided by fuses or by an inverse time circuit breaker. If there is no marking of a protective device type, transfer switches are considered suitably protected by either type of device. Transfer switches may be marked with a maximum rating of protective device. If not marked with a rating, the transfer switches are considered suitably protected by a protective device of the maximum rating required by the CEC.

Transfer switches have been investigated for load switching and inrush capability and for a number of cycles of operation based on their intended use which includes scheduled test operations switching full load.

RELATED PRODUCTS

Fire pump controller assemblies with a transfer switch are covered under Pump Controllers, Fire Certified for Canada (QYZS7).

ADDITIONAL INFORMATION

For additional information, see Fire Protection Equipment Certified for Canada (AAFP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 178, ''Automatic Transfer Switches.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Fire Pump Power Transfer Switch.''

The Listing Mark is applied to the switch panel on transfer switches investigated without regard to the enclosure in which they are mounted. When the Listing Mark is applied to the enclosure of an enclosed transfer switch, it indicates the Listing of the complete enclosed assembly.

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TRANSFORMERS CERTIFIED FOR CANADA (XNWX7)

TRANSFORMERS, CLASS 2 CERTIFIED FOR CANADA (XOKV7)

GENERAL

This category covers transformers suitable for use with Class 2 remote-control, low-energy power and signal circuits not exceeding 30 V rms, including bell or buzzer circuits, and rated 100 VA or less, and intended for use in Class 2 remote control and signal circuits in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

A Class 2 transformer that is energy-limiting has such winding impedance as to limit the output current.

A Class 2 transformer that is non-energy-limiting is equipped with a fuse or other overcurrent protective device that limits the output current.

PRODUCT MARKINGS

Class 2 transformers are marked, where readily visible after installation, with the catalog number or other identification and the electrical rating as follows:

- The primary voltage
- Frequency (if other than 60 Hz)
- Secondary rating in amperes or volt amperes
- "Class 2," except where the terminals are marked "BELL" or "CHIME"
- The primary terminals or leads are marked "LINE" or "PRIMARY" or equivalent
- The secondary terminals or leads are marked "LOAD" or "SECONDARY" or equivalent, unless marked "BELL" or "CHIME"

Transformers provided with an insulation system investigated to CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II," or intended for use in Canada, are marked "ISC-x-CAN," where:

"ISC" stands for "Insulation System Class"

"x" is replaced with the rating of the insulation system (e.g., Class 130 (B) insulation)

"CAN" represents the country in which the transformer is intended to be used

Transformers provided with an insulation system investigated to CAN/CSA-C22.2 No. 0 and ANSI/UL 1446, "Systems of Insulating Materials – General," or intended for use in Canada and the United States, are marked "ISC-x," where:

"ISC" stands for "Insulation System Class"

"x" is replaced with the rating of the insulation system (e.g., Class 130 (B) insulation)

For a required overcurrent protector, the following statement is used: "CLASS 2 WHEN USED WITH PROTECTOR, MFG _____, CAT. NO. _____."

The month and year of manufacture, at a minimum, is marked on the transformer in a location accessible without the use of tools. Date coding, serial numbers or the equivalent may be used.

Unless marked "BELL" or "CHIME," transformers intended for intermittent duty are marked with the "ON" and "OFF" time.

A transformer with multiple secondary windings having an output exceeding 30 V rms is marked, where readily visible after installation, with the word "WARNING," and the following or equivalent: "Risk of electric shock or fire. Do not interconnect secondary windings."

Transformers intended for mounting in a conduit knockout and that have no means for maintaining a bonding path between the transformer and the equipment grounding conductor when the transformer is installed in a nonmetallic box are marked "Install in Metal Box Only."

RELATED PRODUCTS

For direct-plug-in or cord-connected Class 2 transformers, see Direct-plug-in and Cord-connected Class 2 Power Units Certified for Canada (EPBU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 66.1 (2006), "Low Voltage Transformers – Part 1: General Requirements," and CSA-C22.2 No. 66.3 (2006), "Low Voltage Transformers – Part 3: Class 2 Transformers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Class 2 Transformer."

Transformers, Class 2 Certified for Canada (XOKV7)–*Continued*

The Listing Mark for this category requires the use of a holographic label.

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TRANSFORMERS, DISTRIBUTION, DRY TYPE, OVER 750 VOLTS CERTIFIED FOR CANADA (XPFS7)

USE AND INSTALLATION

This category covers dry-type distribution transformers, including solid-cast and resin-encapsulated transformers, rated 69 kV class or less, single- and three-phase.

Both the primary and secondary voltage ratings may be greater than 750 V. The transformers may be provided with surge arresters.

Transformers provided with forced-air (fan-cooled) ratings are provided with alarm contacts for remote indication of overtemperature.

These transformers are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

Transformers having exposed live parts, such as at high-voltage bushings, are intended for installation in places accessible only to qualified persons, as defined in the CEC.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 47 (1990), "Air-Cooled Transformers (Dry Type)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Distribution Transformer." The word "Transformer" may be abbreviated "XFMR," "XFRMR" or "XFORMER."

The "Distribution Transformer" Listing Mark covers both the transformer and the enclosure.

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TRANSFORMERS, DISTRIBUTION, LIQUID-FILLED TYPE, OVER 750 VOLTS CERTIFIED FOR CANADA (XPLH7)

USE AND INSTALLATION

This category covers liquid-filled, distribution-type, pad-mounted and substation-type transformers, rated 69 kV class or less, single- and three-phase.

Both the primary and secondary voltage ratings may be greater than 750 V. The transformers may be provided with surge arresters.

Transformers provided with forced-air (fan-cooled) ratings are provided with alarm contacts for remote indication of overtemperature.

These transformers are intended for installation in accordance with the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

Transformers having exposed live parts, such as at high-voltage bushings, are intended for installation in places accessible only to qualified persons, as defined in the CEC.

The type of liquid used is identified on the transformer nameplate. Additional information on the fluid used is provided in Material Safety Data Sheets (MSDS Sheets) available from the transformer manufacturer.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA C2.1 (2006), "Single-Phase and Three-Phase Liquid-Filled Distribution Transformers."

Transformers, Distribution, Liquid-filled Type, Over 750 Volts Certified for Canada (XPLH7)−*Continued*

Additional standards used, as applicable, are CSA C227.3 (2006), "Low-Profile, Single-Phase, Pad-Mounted Distribution Transformers with Separable Insulated High-Voltage Connectors," and CSA C227.4 (2006), "Three-Phase, Pad-Mounted Distribution Transformers with Separable Insulated High-Voltage Connectors."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Liquid-Immersed Distribution Transformer." The word "Transformer" may be abbreviated "XFMR," "XFRMR" or "XFORMER."

The Listing Mark covers both the transformer and the enclosure.

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TRANSFORMERS, GENERAL PURPOSE CERTIFIED FOR CANADA (XPTQ7)

USE

This category covers transformers of the compound filled, exposed core or open core, coil construction, general purpose and industrial control types, rated 750 V or less. Step-up, step-down, insulated and autotransformer types are also included.

Open core and coil power transformers for use in industrial control equipment are identified as "Industrial Control Transformers."

These transformers have been investigated for use on sinusoidal supply circuits only. They have not been investigated for use where a significant nonsinusoidal content is present, such as that which may occur with uninterruptible power supplies, data processing equipment and solid-state motor speed controllers.

General purpose transformers are suitable for use in a maximum 25°C ambient unless otherwise marked. Industrial control transformers are suitable for use in a 40°C ambient.

A transformer intended for elevated voltage use is marked to indicate that one or more windings may be operated at an elevated voltage, in either an isolated or autotransformer mode, as appropriate. Such marking includes the limit of the elevated voltage, the current (amp) limits, and references as to where further connection detail may be found. Such further detail includes typical connection diagrams and methods of relating winding current to total load kVA. Elevated voltage is that situation in which a voltage between a winding (including its subordinate parts such as terminals) and other conductive parts of the transformer exceeds the voltage of the winding.

Some transformers are marked to specify a minimum distance to a wall.

General purpose transformers are provided with leads, or with studs or terminal pads to which certified pressure wire connectors can be factory or field installed to accommodate field wiring. Wire-binding screws or studs with cupped washers may be used for copper wire 10 AWG max.

Unless the equipment is marked otherwise, termination provisions are based on the use of 60°C wire for sizes 14-1 AWG, and 75°C wire for sizes 1/0 AWG and larger.

In cases where the nature of the construction of the transformer is such that special precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installations or use, suitable for special instructions are marked on the transformer.

PRODUCT MARKINGS

All transformers are marked with the following:

1. The primary voltage, or voltages, and frequency (if other than 60 Hz)
2. Number of phases, if other than single-phase
3. All secondary voltages
4. The secondary capacity in amperes or volt-amperes

Transformers provided with an insulation system investigated to CAN/CSA-C22.2 No. 0, "General Requirements - Canadian Electrical Code, Part II," or intended for use in Canada, are marked "ISC-x-CAN," where:

"ISC" stands for "Insulation System Class"

"x" is replaced with the rating of the insulation system (e.g., Class 130 (B) insulation)

"CAN" represents the country in which the transformer is intended to be used

Transformers provided with an insulation system investigated to CAN/CSA-C22.2 No. 0 and ANSI/UL 1446, "Systems of Insulating Materials – General," or intended for use in Canada and the United States, are marked "ISC-x," where:

"ISC" stands for "Insulation System Class"

Transformers, General Purpose Certified for Canada (XPTQ7)−*Continued*

"x" is replaced with the rating of the insulation system (e.g., Class 130 (B) insulation)

Terminals and leads are identified as such.

Autotransformers are marked "AUTOTRANSFORMER."

Secondary terminals or leads on autotransformers intended for operation on circuits having a voltage to ground of 150 V or less are marked as required by CAN/CSA-C22.2 No. 0, "General Requirements – Canadian Electrical Code, Part II."

If taps in windings are other than full capacity taps, they are so indicated.

Special-purpose enclosures, such as drip-tight, weatherproof, water-tight or dust-tight, or enclosures suitable for outdoors are marked as required by CAN/CSA-C22.2 No. 94, "Special Purpose Enclosures."

RELATED PRODUCTS

Transformers of the air-cooled, dry, ventilated and nonventilated types are covered under Power and General Purpose Transformers, Dry Type Certified for Canada (XQNX7).

Reactors used for dimming, and variable voltage autotransformers are covered under Power Circuit and Motor-mounted Apparatus Certified for Canada (NMTR7).

Voltage regulators are covered under Power Supplies, General Purpose Certified for Canada (QQFU7).

Ballasts for mercury lamps and fluorescent lamps are covered under High-intensity-discharge Lamp Ballasts Certified for Canada (FLCR7) and Fluorescent Lamp Ballasts Certified for Canada (FKVS7), respectively.

Liquid-filled transformers are covered under Transformers, Distribution, Liquid-filled Type, Over 600 V Certified for Canada (XPLH7).

Class 2 transformers are covered under Transformers, Class 2 Certified for Canada (XOKV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 66.1-2006, "Low Voltage Transformers – Part 1: General Requirements," and CSA-C22.2 No. 66.2-2006, "Low Voltage Transformers – Part 2: General Purpose Transformers."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "General Purpose Transformer," "Industrial Control Transformer" or "Auto-Transformer," or other appropriate product name as shown in the individual Listings. The word "Transformer" may be abbreviated "XFMR," "XFRMR" or "XFORMER."

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TRANSFORMERS, IGNITION CERTIFIED FOR CANADA (XPZZ7)

USE

This category covers ignition transformers designed for use on gas- or oil-burning equipment where the acceptability of the combination has been determined by UL. The transformers are designed for connection to supply circuits operating at not over 600 V. The output does not exceed 15,000 V open-circuit and, unless otherwise indicated in the individual certifications, the transformers are of the air-cooled, step-up type.

Interchangeable transformers certified as Class 6, 10, 12 or 14, have secondary voltage ratings of 6,000, 10,000, 12,000 and 14,000 V, respectively. These transformers have been investigated to determine that their ignition characteristics are such that they may be interchanged with other certified transformers of like class and secondary grounding. These transformers are intended for use, without further ignition performance tests, on certified oil or gas burners employing single spark gaps.

Noninterchangeable transformers are intended for specific applications or include ignition characteristics that preclude their interchangeability. Noninterchangeable transformers are acceptable only on specific gas- or oil-burning equipment with which they have been tested.

PRODUCT MARKINGS

All transformers are marked with the following:

1. Name, trademark, or other recognized symbol of identification of the manufacturer
2. Catalog number or equivalent

Transformers, Ignition Certified for Canada (XPZZ7)−*Continued*

3. Electrical rating, consisting of:
   a. low-potential voltage
   b. frequency
   c. volt-amperes or amperes based on input
   d. all open-circuit high-potential rms voltages
   e. high-potential short-circuit current in mA

Transformers having the mid-point or one end of the high-potential winding grounded to the core and the enclosure are marked "MID-POINT (OR ONE END) OF HIGH VOLTAGE WINDING GROUNDED TO CORE AND CASE," or the equivalent.

Transformers intended for use with a twin-gap or a multiple-gap ignition system are marked accordingly. In the case of a multiple-gap transformer, the marking indicates the number of secondary circuits for which the transformer is intended, and which pair of terminals is associated with each secondary winding, unless such identification is obvious.

Ignition transformers suitable for use under the interchangeability program are identified as such.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 13 (1962), "Transformers for Luminous-Tube Signs, Oil- or Gas-Burner Ignition Equipment, Cold-Cathode Interior Lighting."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Interchangeable Ignition Transformer" or "Noninterchangeable Ignition Transformer." The word "Transformer" may be abbreviated "XFMR," "XFRMR" or "XFORMER."

A green background identifies the Listing Mark for interchangeable transformers; a red background identifies the Listing Mark for noninterchangeable transformers.

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POWER AND GENERAL-PURPOSE TRANSFORMERS, DRY TYPE CERTIFIED FOR CANADA (XQNX7)

USE AND INSTALLATION

This category covers single-phase and polyphase transformers of the air-cooled, dry, ventilated and nonventilated types rated 750 V or less. Step-up, step-down, insulated, and autotransformer types are also included.

The transformers are provided with leads, or with the studs or terminal pads to which certified pressure-wire connectors can be factory or field installed to accommodate field wiring. The adequacy of the wire-bending space in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), has not been determined and should be investigated at the time of the installation.

Unless the equipment is marked otherwise, termination provisions are based on the use of 60°C wire for sizes 14-1 AWG and 75°C wire for sizes 1/0 AWG and larger.

Unless otherwise marked, these transformers have not been investigated for use where a significant nonsinusoidal current is present. Examples of equipment that may draw nonsinusoidal currents are uninterruptible power supplies, electronic ballasts, data processing equipment and solid-state motor speed controllers.

K factor-rated transformers have not been investigated for use with harmonic loads where the rms current of any single harmonic higher than the tenth is greater than 1/h of the fundamental rms current.

The transformer ratings are based on installation in a maximum 40°C ambient unless otherwise marked.

Transformers with ventilating openings should be installed so that the ventilating openings are not blocked. Some transformers are marked to specify a minimum distance to a wall.

The suitability of the transformer circuit grounding, grounding electrode connections, and equipment grounding connections in accordance with the CEC should be determined by the Authority Having Jurisdiction at the time of installation.

Power and General-purpose Transformers, Dry Type Certified for Canada (XQNX7)−*Continued*

In cases where the nature or construction of the transformer is such that special precautions beyond the requirements of the CEC must be observed in installations or use, suitable special instructions are marked on the transformer.

PRODUCT MARKINGS

All transformers are marked with the following:

1. Catalog, style, model or other identifying designation
2. High and low voltages
3. Frequency
4. Number of phases, unless clearly indicated on the connection diagram
5. Output amperes or kVA
6. Rated temperature rise, in degrees Celsius
7. Percent impedance

Transformers investigated for use where significant nonsinusoidal current is present are marked "Suitable for nonsinusoidal current load with K factor not to exceed ___," where the blank is filled in with one of the standard K factor ratings of 4, 9, 13, 20, 30, 40 or 50. (The K factor specified is the summation of the per unit rms current at harmonic "h" squared times the harmonic order squared.)

If taps are provided, transformers are marked with the tap voltages, either as actual voltages or as a percentage of the rated voltage.

Autotransformers are marked "AUTOTRANSFORMER."

Transformers provided with an enclosure are marked with the environmental type number(s).

Transformers having terminations, other than leads, suitable for aluminum are marked "CU-AL."

RELATED PRODUCTS

Voltage regulators are covered under Power Supplies, General Purpose Certified for Canada (QQFU7).

Ballasts for mercury lamps and fluorescent lamps are covered under High-intensity-discharge Lamp Ballasts Certified for Canada (FLCR7) and Fluorescent Lamp Ballasts Certified for Canada (FKVS7), respectively.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 47, "Air-Cooler Transformers (Dry Type)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Power Transformer," "Air-Cooled Power Transformer" or "Dry Type General Purpose and Power Transformer," or other appropriate product name as shown in the individual Listings. The word "Transformer" may be abbreviated "XFMR," "XFRMR" or "XFORMER."

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TRANSFORMERS, TOY CERTIFIED FOR CANADA (XRBV7)

GENERAL

This category covers direct-plug-in or cord-connected portable, step-down transformers of the low-secondary-voltage type suitable for supplying current to electrically operated toys or hobby sets.

ACCESSORIES

An accessory to a certified toy or hobby transformer is provided with suitable markings and/or instructions detailing proper installation or assembly of the accessory with either a specific or generic certified toy or hobby transformer specified in the markings or instructions. Such accessories serve to provide conditioning or control of the transformer output voltage, current or power.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 173 (1983), "Transformers for Toy and Hobby Use."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for

Transformers, Toy Certified for Canada (XRBV7)−*Continued*

Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Toy Transformer," "Hobby Transformer," "Toy Transformer Accessory" or "Hobby Transformer Accessory."

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TRANSFORMERS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XPAF7)

TRANSFORMERS, GENERAL PURPOSE FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (XPJF7)

GENERAL

This category covers transformers of the compound filled, exposed core or open core and coil construction (industrial control type) type, rated 600 V or less. Step-up, step-down, insulated, and autotransformer types are also included. Autotransformers are so marked.

These transformers have been investigated for use on sinusoidal supply circuits only. They have not been investigated for use where a significant nonsinusoidal content is present such as that which may occur with uninterruptible power supplies, data processing equipment and solid-state motor-speed controllers.

The transformer rating is based on installation in a maximum 25°C ambient unless otherwise marked.

PRODUCT MARKINGS

A transformer intended for elevated voltage use is marked to indicate that one or more windings may be operated at an elevated voltage, in either an isolated or autotransformer mode, as appropriate. Such marking includes the limit of the elevated voltage, the current (amp) limits, and references as to where further connection detail may be found. Such further detail includes typical connection diagrams and methods of relating winding current to total load kVA. Elevated voltage is that situation in which a voltage between a winding (including its subordinate parts such as terminals) and other conductive parts of the transformer exceeds the voltage of the winding.

Some transformers are marked to specify a minimum distance to a wall. General-purpose transformers are provided with leads, or with studs or terminal pads to which certified pressure-wire connectors can be factory or field installed to accommodate field wiring. Wire-binding screws or studs with cupped washers may be used for copper wire 10 AWG max.

Unless the equipment is marked otherwise, termination provisions are based on the use of 60°C wire for size 14–1 AWG, and 75°C wire for size 1/0 AWG and larger.

In cases where the nature of the construction of the transformer is such that special precautions beyond the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," must be observed in installations or use, suitable for special instructions are marked on the transformer.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "General Purpose Transformer for Use in Hazardous Locations," "Industrial Control Transformer for Use in Hazardous Locations" or "Auto-Transformer for Use in Hazardous Locations," or other appropriate product name as shown in the individual Listings.

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Transformers, General Purpose for Use in Hazardous Locations Certified for Canada (XPJF7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

TRASH COMPACTORS CERTIFIED FOR CANADA (XUTS7)

This category covers equipment intended to reduce the volume of trash by means of mechanical compaction.

COMMERCIAL TRASH COMPACTORS CERTIFIED FOR CANADA (XUUC7)

USE AND INSTALLATION

This category covers commercial-use compactors for reducing the volume of trash by mechanical compaction prior to disposal. They may be provided with a facility to tie the compacted trash into bales. They are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." These compactors are motor operated and are provided with overcurrent or overheating protective devices.

Commercial-use compactors are intended to be installed, maintained and operated by competent personnel who are fully instructed concerning the hazards involved.

RELATED PRODUCTS

Trash compactors for household use are covered under Household Trash Compactors Certified for Canada (XUUM7).

Paper shredders for home or office use are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Waste disposers are covered under Waste Disposers Certified for Canada (ZDHR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Compactor," or other appropriate product name as shown in the individual Listings.

* *

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HOUSEHOLD TRASH COMPACTORS CERTIFIED FOR CANADA (XUUM7)

USE

This category covers household-use compactors for reducing the volume of trash by mechanical compaction prior to disposal. These compactors are intended for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." These motor-operated compactors are rated 250 V or less and are provided with overcurrent or overheating protective devices.

RELATED PRODUCTS

Trash compactors for commercial use are covered under Commercial Trash Compactors Certified for Canada (XUUC7).

Paper shredders for home or office use are covered under Information Technology Equipment Including Electrical Business Equipment Certified for Canada (NWGQ7).

Waste disposers are covered under Waste Disposers Certified for Canada (ZDHR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances."

Household Trash Compactors Certified for Canada (XUUM7)−*Continued*

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Household Trash Compactor,'' or other appropriate product name as shown in the individual Listings.

* *

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TRUCKS, INDUSTRIAL CERTIFIED FOR CANADA (XVHZ7)

This category covers industrial-type material handling equipment of the power-operated or walking type, such as lift trucks, platform trucks, towing tractors, etc.

These devices may be electric battery-powered or internal combustion engine-powered.

TRUCKS, ELECTRIC BATTERY-POWERED CERTIFIED FOR CANADA (XVVX7)

Trucks, Industrial, Type E Certified for Canada (XWJV7)

USE

This category covers electric-battery-powered trucks having minimum acceptable safeguards against inherent fire and electric shock hazards.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583, ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE E INDUSTRIAL TRUCK
AS TO FIRE AND ELECTRIC SHOCK HAZARDS ONLY
Control No.

* *

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Trucks, Industrial, Type EE Certified for Canada (XWXT7)

USE

This category covers electric-battery-powered trucks provided with safeguards against fire and electric shock hazards in addition to those required for Type E trucks. Electric motors and other electrical equipment (such as resistors and contactors) are completely enclosed.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583, ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification

Trucks, Industrial, Type EE Certified for Canada (XWXT7)−*Continued*

and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE EE INDUSTRIAL TRUCK
AS TO FIRE AND ELECTRIC SHOCK HAZARDS ONLY
No.

* *

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Trucks, Industrial, Type ES Certified for Canada (XXES7)

USE

This category covers electric-battery powered trucks provided with safeguards against fire and electric shock hazards in addition to those required for Type E trucks. Barriers are provided to restrict the entrance of combustibles flying into electrical enclosures and to guard against the emission of flame and molten metal.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C583, ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE ES INDUSTRIAL TRUCK
AS TO FIRE AND ELECTRIC SHOCK HAZARDS ONLY
No.

* *

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STORAGE BATTERIES, TRUCKS, ELECTRIC CERTIFIED FOR CANADA (XXHW7)

USE AND INSTALLATION

This category covers Types E, EE and EO storage batteries intended for use in Types E, ES and EE industrial trucks where the installation and use is intended to be in accordance with the marking on the end product.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic requirements used to investigate products in this category are contained in ULC/ORD-C583, ''Guide for the Investigation of Electric Battery Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

STORAGE BATTERY TYPE * FOR USE IN INDUSTRIAL TRUCKS
AS TO FIRE AND ELECTRIC SHOCK HAZARD ONLY
Control No.

* **E**, **EE** or **EO**

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for

Storage Batteries, Trucks, Electric Certified for Canada (XXHW7)–*Continued*

any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

TRUCKS, INTERNAL COMBUSTION ENGINE-POWERED CERTIFIED FOR CANADA (XXLR7)

Trucks, Industrial, Type D Certified for Canada (XXYZ7)

USE

This category covers diesel-engine-powered trucks having minimum acceptable safeguards against inherent fire hazards.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, ''Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE D INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
Control No.
*** ***

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Trucks, Industrial, Type DS Certified for Canada (XYMX7)

USE

This category covers diesel-engine-powered trucks which are investigated under requirements similar to those applying to Type D trucks. Special features are provided as additional safeguards to further reduce the inherent fire hazards of the electric, fuel and exhaust systems.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, ''Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE DS INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
No.
*** ***

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Trucks, Industrial, Type G Certified for Canada (XZOT7)

USE

This category covers gasoline-engine-powered trucks having minimum acceptable safeguards against inherent fire hazards.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, ''Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE G INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
Control No.
*** ***

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Trucks, Industrial, Type G/LP Certified for Canada (XZVS7)

USE

This category covers engine-powered trucks (dual-fuel) which may operate on either gasoline or liquefied petroleum gas and have minimum acceptable safeguards against inherent fire hazards.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, ''Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE G/LP INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
No.
*** ***

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Trucks, Industrial, Type GS Certified for Canada (YACR7)

USE

This category covers gasoline-engine-powered trucks with fuel, electrical and exhaust systems provided with safeguards in addition to those required for Type G trucks.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

Trucks, Industrial, Type GS Certified for Canada (YACR7)−*Continued*

The basic standard used to investigate products in this category is ULC/ORD-C558, "Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE GS INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
No.
*** ***

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Trucks, Industrial, Type GS/LPS Certified for Canada (YAJQ7)

USE

This category covers engine-powered trucks (dual-fuel), which may operate on gasoline or liquefied petroleum gas. The fuel, electrical and exhaust systems are provided with safeguards in addition to those required for Type G/LP trucks.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of the Authority Having Jurisdiction.

RELATED PRODUCTS

See:

Trucks, Industrial, Type G Certified for Canada (XZOT7)
Trucks, Industrial, Type G/LP Certified for Canada (XZVS7)
Trucks, Industrial, Type GS Certified for Canada (YACR7)
Trucks, Industrial, Type LP Certified for Canada (YAPZ7)
Trucks, Industrial, Type LPS Certified for Canada (YBDX7)

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, "Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE GS/LPS INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
No.
*** ***

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Trucks, Industrial, Type LP Certified for Canada (YAPZ7)

USE

This category covers liquefied-petroleum-gas engine-powered trucks having minimum acceptable safeguards against inherent fire hazards.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, "Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks."

Trucks, Industrial, Type LP Certified for Canada (YAPZ7)−*Continued*

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE LP INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
No.
*** ***

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Trucks, Industrial, Type LPS Certified for Canada (YBDX7)

USE

This category covers liquefied-petroleum-gas (LP-gas) engine-powered trucks which are investigated under requirements similar to those applying to Type LP trucks. Special features are provided as additional safeguards to further reduce the inherent fire hazards of the electrical, fuel and exhaust systems.

These trucks are regarded as presenting inherent fire hazards which should be recognized. Storage and use of these trucks should conform to the requirements of Authorities Having Jurisdiction.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C558, "Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TYPE LPS INDUSTRIAL TRUCK
AS TO FIRE HAZARD ONLY
No.
*** ***

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ELECTRICAL ACCESSORIES FOR INDUSTRIAL TRUCKS CERTIFIED FOR CANADA (XWCW7)

USE

This category covers electrical accessories furnished as complete kits for installation on industrial trucks by qualified personnel.

ADDITIONAL INFORMATION

For additional information, see Mechanical Equipment and Associated Products Certified for Canada (AAME7).

REQUIREMENTS

The basic standards used to investigate products in this category are ULC/ORD-C583, "Guide for the Investigation of Electric Battery Powered Industrial Trucks," and ULC/ORD-C558, "Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks."

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

ELECTRICAL ACCESSORY FOR USE IN INDUSTRIAL TRUCKS AS TO FIRE AND ELECTRIC SHOCK HAZARD ONLY
Control No.

* *

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UNINTERRUPTIBLE POWER-SUPPLY EQUIPMENT CERTIFIED FOR CANADA (YEDU7)

USE AND INSTALLATION

This category covers indoor- and outdoor-use uninterruptible power-supply (UPS) equipment that may be stationary or fixed. This equipment is rated 600 V or less.

This category also covers large UPS equipment requiring field assembly of modules or subassemblies, which are appropriately marked as indicated below.

A UPS is used to provide alternating-current power to a load for some period of time in the event of a utility power failure. In addition, it may provide a more constant voltage and frequency supply to the load, reducing the effects of utility voltage and frequency variations.

These products include the following equipment intended for use with a UPS: (1) battery supply modules with or without batteries, (2) remote status panels, (3) bypass switches, (4) maintenance bypass switches, (5) battery circuit disconnect switches, (6) rectifier and power conversion units, and (7) power distribution panels.

The investigation of UPS equipment does not include the effects on the load that may be caused by momentary disruption of alternating-current power.

A UPS identified with an enclosure type designation or as "Rain tight" or "Rainproof" is intended for use as indicated in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Products suitable for use in computer rooms are marked "Suitable for Computer Room Applications," or the equivalent.

This category does not cover a UPS intended as a component of a fire-protective or burglary-protective signaling system.

REBUILT PRODUCTS

This category also covers UPS equipment that is rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt UPS equipment is rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt UPS equipment is subject to the same requirements as new UPS equipment.

RELATED PRODUCTS

UPS systems for use with professional medical and dental equipment are covered under Uninterruptible Power Supplies for Use in Health Care Facilities Certified for Canada (KFFG7).

Battery-powered emergency equipment for controlling lighting and/or power is covered under Emergency Lighting and Power Equipment Certified for Canada (FTBR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 107.1, "General Use Power Supplies," or CSA-C22.2 No. 107.3, "Uninterruptible Power Systems."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Uninterruptible Power Supply" (or "UPS"), "UPS Battery Supply," "UPS Status Panel," "UPS Transfer Switch," "UPS Inverter," "UPS Rectifier/Charger," "UPS Equipment Enclosure," "UPS Equipment Part," "UPS Equipment Subassembly," "UPS Equipment Accessory," "UPS Power Distribution Panel," or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

* *

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UNINTERRUPTIBLE POWER-SUPPLY EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (YEEU7)

USE AND INSTALLATION

This category covers indoor- and outdoor-use uninterruptible power-supply (UPS) equipment that may be stationary or fixed. This equipment is rated 600 V or less.

RELATED PRODUCTS

UPS equipment intended for use in unclassified locations is covered under Uninterruptible Power-supply Equipment Certified for Canada (YEDU7).

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 107.1 (2001), "General Use Power Supplies," or CSA-C22.2 No. 107.3 (2005), "Uninterruptible Power Systems."

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Uninterruptible Power Supply for Use in Hazardous Locations," "UPS Battery Supply for Use in Hazardous Locations," "UPS Status Panel for Use in Hazardous Locations," "UPS Transfer Switch for Use in Hazardous Locations," "UPS Inverter for Use in Hazardous Locations," "UPS Rectifier/Charger for Use in Hazardous Locations," "UPS Equipment Enclosure for Use in Hazardous Locations," "UPS Equipment Part for Use in Hazardous Locations," "UPS Equipment Subassembly for Use in Hazardous Locations," "UPS Equipment Accessory for Use in Hazardous Locations" or "UPS Power Distribution Panel for Use in Hazardous Locations." The words "Hazardous Locations" may be abbreviated "Haz. Loc."

* *

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UNIT SUBSTATIONS CERTIFIED FOR CANADA (YEFR7)

GENERAL

This category covers unit substations rated 600 V or less intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and in accordance with the installation instructions provided on the unit substation.

A unit substation consists of a transformer in combination with primary and/or secondary overcurrent protective devices or switching devices housed in a single enclosure.

Where in normal operation the load will continue for three hours or more, molded-case circuit breakers and fuses should not be loaded to exceed 80% of their current rating.

Some unit substations are suitable for use as service equipment and are so marked. Such marking is part of the Certification Mark as noted below, or is an integral part of other required markings.

Certified unit substations are for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking shall be independent of any marking on terminal connectors and shall be on a wiring diagram or other readily visible location. If all terminals are suitable for use with aluminum conductors, the marking will indicate "Use copper or aluminum wire." A unit substation employing terminals for main or branch circuit units individually

marked "Cu-A1" will be marked "Use copper-A1 wire" or "Use copper wire only." The latter statement indicates that wiring space or other factors make the unit substation unsuitable for aluminum conductors.

Unless the unit substation is marked with both the size and temperature rating of wire to be used, the termination provisions are based on the use of 60°C ampacities for wire sizes 14-1 AWG and 75°C ampacities for wire 1/0 AWG and larger.

Unit substations have the secondary neutral bonded to the enclosure and have provision on the neutral for connection of a grounding conductor. A terminal is also provided on the enclosure near the line terminals for use with an equipment grounding conductor between the unit substation and the enclosure of equipment on the line side of the unit substation for use when a metallic conduit system is not provided.

The suitability of unit substations for use on high capacity circuits has not been investigated.

Unit substations are marked with enclosure type number 1, 2 or 3R as described in Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Unit substations marked with enclosure type 3RX provide the same level of protection as type 3R enclosures, and are provided with an additional level of corrosion protection for the enclosure.

A unit substation marked "Type 3R" may also be marked "Rainproof."

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 31, "Switchgear Assemblies," and CAN/CSA-C22.2 No. 47, "Air-Cooled Transformers (Dry Type)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Unit Substation."

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UNIT SUBSTATIONS OVER 600 VOLTS CERTIFIED FOR CANADA (YEFV7)

USE AND INSTALLATION

This category covers three-phase articulated and integral unit substations for step-down operation. Articulated substations are rated through 10,000 kVA, at primary voltages above 600 V through 38 kV (nominal 35 kV). Integral substations are rated through 2500 kVA at primary voltages above 600 V through 38 kV.

Articulated unit substations consist of a transformer section(s) together with an input section(s), an output section(s), or both. Transition sections may also be provided. These unit substations are designed, coordinated and assembled as multiple self-enclosed pieces of equipment intended for connection in the field.

Integral unit substations consist of a transformer section(s) together with an input section(s), an output section(s), or both. Transition sections may also be provided. These unit substations are designed, coordinated and assembled as a single self-enclosed piece of equipment. Sections may be shipped separately.

An articulated unit substation may consist of several separately certified pieces of equipment. Only those sections provided with unit substation Certification Marks have been investigated as part of an articulated unit substation. The suitability of other assemblies will need to be determined by the Authority Having Jurisdiction.

The transformer section(s) house the three-phase power transformer(s) for step-down operation. These unit substation transformers are dry-type distribution transformers including solid cast and resin encapsulated types.

The input sections may consist of a terminal chamber, metal-clad switchgear, or metal-enclosed interrupter switchgear.

The output sections may consist of metal-clad switchgear, metal-enclosed interrupter switchgear, a motor control center, molded-case circuit breaker equipment, fused switch equipment, a dead-front switchboard, a panelboard or similar types of distribution or control equipment.

A transition section may be located between a transformer section and an input section, between a transformer section and an output section,

between different types of input sections, or between different types of output sections. Transition sections may be integral parts of two adjacent sections, an integral part of one of the sections, or a separate section.

The transformer ratings determine the kVA and voltage capabilities of the overall integral unit substation.

These unit substations are intended for installation in accordance with the requirements of CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and in accordance with the installation instructions provided on the equipment.

PRODUCT MARKINGS

A master nameplate is mounted on an external surface of the enclosure and visible after normal installation of the equipment. This master nameplate includes the following information as a minimum: manufacturer's name and equipment identification number, kVA rating or ratings if force cooled, primary and secondary lightning impulse withstand voltage (BIL) ratings, primary and secondary voltage ratings, primary and secondary continuous current ratings, transformer design impedance, and total weight. If metal-clad switchgear or metal-enclosed interrupter switchgear is connected to the transformer primary, the nameplate also includes a short-time current carrying rating and momentary current rating.

Each section of the unit substation also has its own rating based on the requirements in standards applicable for that section of the equipment. These individual section ratings are coordinated to be equal to or greater than the rating of the unit substation.

The enclosure of the integral unit substation or the several enclosures of an articulated unit substation are marked to indicate the exposure category (A, B or C) for which it is intended. Enclosures marked "Category A" are intended to be installed in areas accessible to the unsupervised general public; enclosures marked "Category B" are intended to be installed in areas accessible to authorized personnel only; and enclosures marked "Category C" are intended to be installed in areas accessible to qualified personnel only.

An enclosure that has been investigated to determine it is rainproof is marked "Rainproof," "Outdoor" or "3R." The enclosure may be either nonventilated or ventilated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 31 (1989), "Switchgear Assemblies," and CAN/CSA-C22.2 No. 47 (1990), "Air Cooled Transformers (Dry Type)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory), together with the word "LISTED," a control number, the product name "Unit Substation Section," and "_____ of _____," where the first space is stamped with a number indicating the position (reading from left to right) that the section occupies in the series of sections constituting the unit substation, and the second space indicates the total number of sections which are provided as part of the unit substation.

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VAPORIZERS CERTIFIED FOR CANADA (YEIV7)

GENERAL

This category covers devices intended for vaporization of water, certain medicaments in water solution, and glycol.

If a flammable liquid or other flammable material, particularly if more volatile or flammable than kerosene (38°C flash, closed cup) is used in these devices, there may be danger of fire or explosion, especially in closed rooms or confined spaces.

Portable electric vaporizers of the resistance-wire type present certain inherent hazards. Care should be exercised to prevent their contact with readily combustible materials, such as blankets, bedding, curtains and draperies.

FACTORS NOT INVESTIGATED

The physiological effects of the liquids, including the medicaments which may be employed, have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 64, "Household Cooking and Liquid-Heating Appliances."

Additional standards may be applicable based on the features employed. In addition, CSA Technical Information Letter No. C-37, "Input Ratings for Cord-Connected Heating and Cooking Appliances, Hairdressing Equipment and Electric Irons for Household Use" (issued 2-28-05), may also be used as applicable.

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Vaporizer."

* *

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VALVES CERTIFIED FOR CANADA (YEWT7)

These valves are for use in the assembly of appliances or equipment or in piping handling gases or liquids. The various categories identify the specific or general kind of service for which the valve is intended.

CHECK VALVES CERTIFIED FOR CANADA (YFKR7)

Check valves are for various specific uses including prevention of return-flow, hydraulic back pressure, excess flow and for equalizing or controlling fluid flow.

Anhydrous-ammonia Check Valves Certified for Canada (YFXZ7)

USE AND INSTALLATION

This category covers filler valves, vapor-return valves, back-pressure check valves, and excess-flow check valves. Filler valves and vapor-return valves, where so indicated in the individual certifications, are intended to be installed in conjunction with a separate back-pressure check or a separate excess-flow check valve.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C125, "Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief)."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, one of the following product names as appropriate: "Excess Flow Valve," "Filler Valve," "Vapor-Return Valve" or "Back Pressure Valve," and the statement "for Anhydrous Ammonia * kPa max."

* Pressure rating required only if valve is rated in excess of 1720 kPa gauge.

* *

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LP-gas Check Valves Certified for Canada (YHNT7)

USE AND INSTALLATION

This category covers filler, vapor-return, back-pressure check, excess-flow check, and similar valves as indicated in the individual certifications. Filler valves and vapor-return valves, where so indicated, are intended to be installed in conjunction with a separate back-pressure or a separate excess-flow check valve.

LP-gas Check Valves Certified for Canada (YHNT7)−*Continued*

Back-pressure and excess-flow check valves may be installed in either liquid or vapor lines unless otherwise indicated. They are for use in systems using Transport Canada cylinders or containers constructed in accordance with the "Canadian Pressure Vessel Code." They are suitable for use with LP-gas in either the liquid or gaseous phase at working pressures of at least 1720 kPa gauge pressure. Those suitable for use at pressures in excess of 1720 kPa are marked with the maximum pressure.

These devices are intended for installation and use in accordance with CSA-B149.2, "Propane Storage and Handling Code."

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C125, "Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief)."

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, one of the following product names: "Back Pressure Valve," "Excess Flow Valve," "Filler Valve," "Vapor Return Valve," or other appropriate product name as shown in the individual Listings, and the statement "For LP-Gas * kPa max."

* Pressure rating required only if valve is rated in excess of 1720 kPa.

* *

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VALVES, AUTOMATIC, FOR GAS APPLIANCES CERTIFIED FOR CANADA (YINV7)

USE AND INSTALLATION

This category covers automatic valves rated 600 V or less that are constructed entirely of new, unused parts and materials, and intended for use with one or more of the following fuels in the gaseous state: natural gas, manufactured gas, LP-gas, or LP-gas-air mixtures as indicated in the individual certifications. These valves may be individual automatic valves, or valves utilized as parts of automatic gas ignition systems.

These valves have a maximum operating gas pressure rating of 1/2, 2, 5 psi (3.5, 13.8, 34.5 kPa), or when higher than 5 psi (34.5 kPa), in 5 psi (34.5 kPa) increments up to and including a maximum operating pressure of 60 psi (413.7 kPa). They are capable of operation at ambient temperatures of 32 to 125°F (0 to 51.5°C), unless a higher and/or a lower temperature are specified in the individual certifications. Valves marked "Commercial/Industrial (C/I) Safety Shutoff Valve" have an operating pressure rating greater than 1/2 psi (3.5 kPa), a capacity rating greater than 400,000 Btu/hr, and close in less than 2 seconds after being de-energized.

These valves are intended for stationary installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I," and CAN/CSA-B149.1 (2000), "Natural Gas and Propane Installation Code."

RELATED PRODUCTS

Electrically operated valves intended for other applications are covered under Valves, Electrically Operated Certified for Canada (YIOZ7).

Electrically operated valves intended for other applications in hazardous (classified) locations are covered under Valves, Electrically Operated for Use in Hazardous Locations Certified for Canada (YTSX7).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ANSI Z21.21a/CSA 6.5a (2001), "Automatic Valves for Gas Appliances."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, the product name "Automatic Valve for Gas Appliances," and the statement "IN ACCORDANCE WITH ANSI Z21.21a-2001/CSA 6.5a-2001."

Valves, Automatic, for Gas Appliances Certified for Canada (YINV7)−*Continued*

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VALVES, ELECTRICALLY OPERATED CERTIFIED FOR CANADA (YIOZ7)

USE AND INSTALLATION

This category covers electrically operated valves, which are designated general purpose valves or safety valves as indicated in the individual Listings. These valves may be equipped with complementary or optional mechanical actuators.

A general purpose valve is intended to control the flow of a fluid, but is not intended for use as a safety valve. It may be a normally closed or normally open valve.

A safety valve is a normally closed valve of the ''On'' and ''Off'' type intended to be actuated by a safety control or an emergency device to prevent the delivery of a fluid. It may also be used as a general purpose valve. A multiple port valve may be designated as a safety valve only with respect to its normally closed port.

These valves are intended for stationary installation in an ambient temperature normally prevailing in habitable spaces and for handling fluids at a temperature not exceeding 25°C (77°F) as defined by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' unless otherwise indicated.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 139-1982, ''Electrically Operated Valves.''

Products intended for automotive use with CNG are additionally investigated to ANSI/AGA NGV3.1/CGA NGV 12.3-1995, ''Fuel System Components for Natural Gas Powered Vehicles.''

Products intended for automotive use with LP-gas are additionally investigated to CSA 12.2-2002, ''Propane Fuel System Components for Use on Highway Vehicles.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with word ''LISTED,'' a control number, and one of the following product names as appropriate: ''General Purpose Valve,'' ''Safety Shut off Valve,'' ''Safety Valve,'' ''Shut off Valve'' or ''Positive Shut off Valve.'' The product name may be preceded by ''Section of'' and is followed by one of the following statements as appropriate: ''Assembly Consisting of Coil (or Actuator) (No.) and Body (No.),'' ''For Automotive Use Only'' or ''For Use with (No.) Pilot Safety Control Switch.''

The specific fluid(s) for which the valve is Listed together with the fluid temperature and ambient temperature ratings are also included on the Listing Mark or marked elsewhere on the valve.

* *

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REGULATORS CERTIFIED FOR CANADA (YJQV7)

For Listing purposes, gas regulators are divided into two groups: Compressed Gas Regulators and LP-Gas Regulators. Regulators designated as Compressed Gas Regulators are not investigated for their ability to maintain the delivery pressure within predetermined limits. Regulators designated as LP-Gas Regulators are investigated to determine that they are capable of controlling and maintaining a uniform gas delivery pressure.

Compressed Gas Regulators Certified for Canada (YKFT7)

USE

This category covers regulators designed for use with the compressed gases specified in the individual certifications, to reduce the storage cylinder pressure or line pressure of not more than 37.91 mPa (5500 psig) to the use pressure.

Compressed Gas Regulators Certified for Canada (YKFT7)−*Continued*

FACTORS NOT INVESTIGATED

The regulating performance, the effects of overpressure on connected equipment, and the physiological effects of the use of medical equipment regulators have not been investigated.

RELATED PRODUCTS

LP-gas pressure regulators for equipment intended for installation and use in accordance with CAN/CSA-B149.1, ''Natural Gas and Propane Installation Code,'' and CAN/CSA-B149.2, ''Propane Storage and Handling Code,'' are covered under LP-Gas Regulators Certified for Canada (YKSR7 and YKSR8).

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C252 (1975), ''Guide for the Investigation of Gas Pressure Regulators.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Compressed Gas Regulator.''

* *

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LP-gas Regulators Certified for Canada (YKSR7)

USE

This category covers regulators intended to be used in accordance with CSA B149.2, ''Propane Storage and Handling Code,'' in LP-gas systems other than automotive, utilizing Department of Transportation, Transport Canada or CSA containers.

First-stage regulators are designed for vapor service to reduce pressure from the container to a nominal pressure of 68.7 kPa or less. Second-stage regulators are designed to reduce the first-stage outlet operating pressure to a pressure equal to or less than 356 mm water column. Integral two-stage regulators combine a first-stage and a second-stage regulator into a single unit.

Second-stage regulators are equipped with a threaded vent opening or other means for connection of vent piping required of regulators to be located inside a building or to be included in the assembly of underground systems.

If so indicated in the individual certifications, these regulators may incorporate a manual- or automatic-changeover control manifold.

High-pressure regulators are designed for handling LP-gas in either the gaseous or liquid phase to reduce prevailing container pressure to a lower pressure in excess of 6.9 kPa. High-pressure regulators are not required to be equipped with integral relief valves but may be so equipped if indicated in the individual certifications.

Single-stage regulators are designed for vapor pressure to reduce pressure from the container to a nominal pressure of 6.9 kPa or less. They are for use with small portable appliances and outdoor cooking appliances.

Special-purpose regulators are designed to reduce the prevailing cylinder, tank or other pressure in excess of 6.9 kPa to a lower pressure. These regulators are not intended for installation in two-stage piping systems that serve 3.5 kPa appliance systems.

RELATED PRODUCTS

For automotive-type LP-gas regulators, see LP-Gas Accessories, Automotive Type Certified for Canada (ITPV7).

ADDITIONAL INFORMATION

For additional information, see Regulators Certified for Canada (YJQV7) and Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC-C144 (1975), ''Guide for the Investigation of Pressure Regulating Valves.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''LP-Gas Regulator.''

LP-gas Regulators Certified for Canada (YKSR7)−*Continued*

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RELIEF VALVES CERTIFIED FOR CANADA (YLFZ7)

LP-gas Relief Valves Certified for Canada (YNWZ7)

Relief Valves, Hydrostatic, LP-gas Certified for Canada (YOKX7)

USE AND INSTALLATION

This category covers valves intended for the relief of hydrostatic pressures only. Hydrostatic-relief valves are intended for installation in pipelines, charging manifolds, and other equipment handling LP-gas in the liquid phase. The are intended for installation and use in accordance with CSA B149.2, ''Propane Storage and Handling Code.''

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C132, ''Safety Relief Valves for Anhydrous Ammonia and Propane.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Hydrostatic Relief Valve,'' and the statement ''For LP-Gas * kPa max.''

* Pressure rating not required if marked elsewhere on the valve

* *

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Relief Valves, Safety, LP-gas Certified for Canada (YOYV7)

USE AND INSTALLATION

This category covers safety-relief valves intended for installation on LP-gas containers, other than those constructed according to Transport Canada specifications, in accordance with CSA B149.2, ''Propane Storage and Handling Code.'' They are used to safeguard such containers against excessive pressures caused by exposure to external heat, by overfilling, or by filling with LP-gas having a vapor pressure in excess of that for which the container is designed.

The maximum allowable working pressure (MAWP) of the tank determines the start-to-discharge pressure setting of the relief valve to be used. This setting is made by the valve manufacturer, and the adjustment is sealed to discourage tampering.

Safety-relief valves are rated according to their discharge capacities in dm3/s of air at 16°C and 101.3 kPa. This rate of discharge, the set pressure in kilopascals, and the manufacturer's name and valve number designation are marked on each relief valve or multiple-head unit or manifold.

The rate of discharge of the valve or valves used on the container is intended to be in accordance with the provisions of the requirements of the provincial or territorial authority where the tank is to be installed.

Safety-relief valves may be furnished by the manufacturer either separately or threaded into and incorporated in the assembly of a certified multiple-head unit.

The rate of discharge indicated on the relief valve applies only when the valve is mounted in a straight coupling in the top of a tank, and no restriction to flow is introduced on either the inlet or outlet side of the valve. Relief valves installed otherwise may have restrictions set up which will materially reduce the indicated rate of discharge.

When relief valves displaying a Certification Mark are installed in a head unit or manifold other than that with which valves have been flow

Relief Valves, Safety, LP-gas Certified for Canada (YOYV7)−*Continued*

tested and rated, used with vapor tubes, or mounted in any fittings in such manner as to introduce restrictions to flow ahead of the valve inlet, and/or the flow is restricted on the outlet side of the valve by the use of undersize pipe and fitting for venting the discharge, it is necessary to determine the resulting loss. Flow tests must be conducted to ascertain the reduction in flow, and the relief valve manufacturer should be consulted for such information.

When the relief valves are incorporated in the assembly of a multiple-head unit or a manifold by the valve manufacturer, the rate of discharge is indicated on the body of the head unit or manifold. The rating indicated on the body of the head unit or manifold is the total rated discharge of the valves in the unit, as determined by conducting flow tests with the relief valve or valves installed in the unit.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C132 (1992), ''Safety Relief Valves for Anhydrous Ammonia and Propane.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''LP-Gas Safety Relief Valve.''

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SHUTOFF VALVES CERTIFIED FOR CANADA (YPMT7)

Shut-off valves following are exclusive of the electrically operated types and are manually, float, or pressure actuated.

Anhydrous-ammonia Shutoff Valves Certified for Canada (YQAR7)

USE

This category covers anhydrous-ammonia shutoff valves, including gas-line service and other types as indicated in the individual certifications. They are suitable for handling either liquid or gaseous anhydrous ammonia at a maximum working pressure of 1720 kPa. Those suitable for use at pressures in excess of 1720 kPa are marked with the maximum working pressure.

These valves are suitable for installation where a positive shutoff is required unless otherwise specified in the individual certifications. Metal-to-metal seat-type valves are suitable for installation only in branch or bypass lines where a positive shutoff is not essential.

PRODUCT MARKINGS

Valves are marked with the designation ''Metal-to-Metal Seat'' and ''____ kPa max,'' if applicable.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C125, ''Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief).''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Shut-off Valve for Anhydrous-Ammonia (NH_3).''

* *

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Compressed Gas Shutoff Valves Certified for Canada (YQNZ7)

USE

This category covers compressed gas shutoff valves intended for use in pipelines and with compressed gas containers in systems storing and handling various compressed gases other than those for LP-gas and anhydrous ammonia.

The valve types and the maximum working pressures for gas-line service valves are indicated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C842, ''Guide for the Investigation of Valves for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Shut-Off Valve,'' and the statement ''for *, ** kPa max.''

* Name of gas

** Pressure rating not required if marked elsewhere on the valve

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Flammable Liquid Shutoff Valves Certified for Canada (YRBX7)

USE

This category covers valves of the gate, globe, angle, needle, and other types designed for use in pipe lines or equipment assemblies for gasoline, kerosene, fuel oil, petroleum, dry-cleaning solvent, etc. Valves may be of the manual, self-closing remote control, or other types as designated in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C842, ''Guide for the Investigation of Valves for Flammable and Combustible Fluids.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Shut-off Valve,'' and the statement ''for Flammable Liquid * psi max.''

* Pressure rating not required if marked elsewhere on the valve

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Gas Shutoff Valves Certified for Canada (YRPV7)

USE

This category covers manual gas shutoff valves intended for use in lines conveying fuel gases. The type of valve, use, and maximum working pressure is noted in the individual certifications.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products with a pressure of 125 psig or less in this category is CGA 3.16-M88, ''Lever Operated Non-Lubricated Gas Shut-Off Valves.''

Gas Shutoff Valves Certified for Canada (YRPV7)−*Continued*

The basic standard used to investigate products with a pressure greater than 125 psig in this category is ULC/ORD-C842, ''Guide for the Investigation of Valves for Flammable and Combustible Liquids.''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Shut-Off Valve,'' and the statement ''For LP-Gas * psi max,'' ''For Natural Gas * psi max'' or ''For Natural and Manufactured Gas * psi max.''

* Pressure rating not required if located elsewhere on the valve

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LP-gas Shutoff Valves Certified for Canada (YSDT7)

USE AND INSTALLATION

This category covers LP-gas shutoff valves, including gas-line service valves and other valves as identified in the individual certifications. These valves are intended for use and installation in accordance with CSA B149.2, ''Propane Storage and Handling Code.'' They are suitable for use with LP-gas in either the liquid or gaseous phase at working pressures of at least 1720 kPa. Those suitable for use at pressures in excess of 1720 kPa are marked with the maximum working pressure.

These valves are suitable for installation where a positive shutoff is required unless otherwise specified in the individual certifications. Metal-to-metal seat-type valves are suitable for installation only in branch or bypass lines where a positive shutoff is not essential.

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C125, ''Valves for Anhydrous Ammonia and Propane (Other Than Safety Relief).''

UL MARK

The Listing Mark of UL on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, the product name ''Shut-Off Valve,'' the designation ''Metal-to-Metal Seat'' if applicable, and the statement ''for LP-Gas * kPa max.''

* Pressure rating required only if valve is rated in excess of 1720 kPa and not marked elsewhere on the valve.

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VALVES, ELECTRIC FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (YTSX7)

GENERAL

This category covers electrically operated valves which, for the purpose of certification, are designated as follows:

General-purpose valve — A valve intended to control the flow of a fluid, but not to be depended upon to act as a safety valve. It may be a normally closed or normally open valve.

Safety valve — A normally closed valve of the ''On'' and ''Off'' type intended to be actuated by a safety control or an emergency device to prevent the unsafe delivery of a fluid. It may also be used as a general-purpose valve.

A multiple port valve may be designated as a safety valve only with respect to its normally closed port.

Unless otherwise indicated, these valves are intended for connection to rigid conduit in an ambient temperature normally prevailing in habitable spaces and for handling fluids at a temperature not exceeding 25°C (77°F) rated 600 V and less.

Identification of the specific fluid(s) for which the valves is certified, together with the fluid temperature and ambient temperature ratings, is included in installation instructions or marked on the valve or on a tag attached to the valve.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 139 (1982), ''Electrically Operated Valves.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''General Purpose Valve for Hazardous Locations'' or ''Safety Valve for Hazardous Locations.''

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VAPOR RECOVERY SYSTEMS CERTIFIED FOR CANADA (YUJZ7)

VAPOR RECOVERY SYSTEM ACCESSORIES, FLAMMABLE LIQUID CERTIFIED FOR CANADA (YUNT7)

USE AND INSTALLATION

This category covers accessories such as vapor-processing equipment intended for use by manufacturers and installers of vapor-recovery systems, installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

These products are intended for use with the following fuels:

a) Gasoline

b) Gasoline/ethanol blends designated as ''gasohol'' (E10 maximum)

ADDITIONAL INFORMATION

For additional information, see Flammable and Combustible Liquids and Gases Equipment Certified for Canada (AAPQ7).

REQUIREMENTS

The basic standards used to investigate products in this category are one or more of the following as applicable:

- CSA-C22.2 No. 0.4, ''Bonding of Electrical Equipment (Protective Grounding)''
- CSA-C22.2 No. 0.5, ''Threaded Conduit Entries''
- CSA-C22.2 No. 22, ''Electrical Equipment for Flammable and Combustible Fuel Dispensers''
- CSA B346, ''Power-Operated Dispensing Devices for Flammable Liquids''
- CAN/CSA-C22.2 No. 157 (1992), ''Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations''
- CSA-C22.2 No. 30 (1986), ''Explosion-Proof Enclosures for Use in Class I Hazardous Locations''
- CAN/ULC-S634 (1999), ''Hose Swivel Connectors for Flammable and Combustible Liquids''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Vapor Processing Equipment'' or ''Vapor Recovery Equipment,'' or other appropriate product name as shown in the individual Listings.

Vapor Recovery System Accessories, Flammable Liquid Certified for Canada (YUNT7)−*Continued*

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VENDING MACHINES CERTIFIED FOR CANADA (YWXV7)

GENERAL

This category covers commercial vending machines, which include payment-accepting machines for vending nonrefrigerated food and beverages, general merchandise, etc.

This equipment is rated 250 V or less, single-phase, and may be either cord or permanently connected to the source of supply in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I,'' and CAN/CSA-C22.2 No. 0, ''General Requirements – Canadian Electrical Code, Part II.''

Accessories, such as a coin/currency mechanism and debit/credit card readers, may be field installed if the vending machine is marked to specify the types of accessories that are acceptable.

Vending machines of certain types are designated for permanent connection to water supplies and sewer lines at the point of installation. Authorities Having Jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

The burglary and theft protection features of these machines have not been investigated unless specifically indicated in the individual certifications.

PRODUCT MARKINGS

These products are marked with the manufacturer's name, model number and electrical rating.

These appliances are marked on or adjacent to the electrical rating plate with one of the following: ''Suitable for Indoor Use Only,'' ''Suitable for Protected Locations — See Installation Instructions'' or ''Suitable for Outdoor Use.'' Complete instructions appear on an appliance intended for use in a protected location, indicating the manufacturer's recommendations concerning the use or installation, or both, of any canopy, marquee, shelter, etc., that may be necessary for the protection of the appliance. The instructions may be located inside the appliance if they are accessible through the front door.

REBUILT PRODUCTS

This category also covers vending machines that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt vending machines are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt vending machines are subject to the same requirements as new vending machines.

RELATED PRODUCTS

Machines for vending refrigerated food and beverages are covered under Vending Machines, Refrigerated Certified for Canada (SQMX7).

Games, rides and similar payment-accepting amusement products are covered under Amusement and Gaming Machines Certified for Canada (ASMU7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 128, ''Vending Machines.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Vending Machine,'' or other appropriate product name as shown in the individual Listings.

For rebuilt products the word ''Rebuilt,'' ''Remanufactured'' or ''Reconditioned'' precedes the product name.

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VENTILATING EQUIPMENT FOR COMMERCIAL COOKING APPLIANCES CERTIFIED FOR CANADA (YXLT7)

Ventilating equipment includes fire dampers and hoods, grease extractors, exhaust hoods, power ventilators and grease ducts intended for installation in ventilating systems serving commercial cooking equipment. This equipment is intended for installation in accordance with the National Fire Protection Association Standard for the Installation of Equipment for the removal of Smoke and Grease Laden Vapors from Commercial Cooking Equipment, NFPA 96, or other recognized codes or standards as indicated for the individual product categories.

EXHAUST HOODS WITH EXHAUST DAMPERS CERTIFIED FOR CANADA (YXZR7)

GENERAL

This category covers exhaust hoods with exhaust dampers intended to be installed over commercial cooking equipment. These hoods are provided with fire-actuated automatic dampers. The hoods with dampers are intended to be used in accordance with ANSI/NFPA 96, ''Ventilation Control and Fire Protection of Commercial Cooking Operations.'' These products may be provided with manually or automatically operated cleaning or washing systems. These systems are not investigated for grease-extraction efficiency. These systems are not investigated for their suitability as fire-extinguishing-system units for the protection of grease-removal devices and hoods, unless specifically indicated in the individual Listings.

All exhaust hood dampers are marked relative to minimum exhaust air flow and maximum supply air flow directed into the hood and/or out the bottom (if provided).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C710 (1980), ''Preliminary Standard for Grease Extractors for Exhaust Duct.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Damper and Hood for Kitchen Exhaust Ducts,'' ''Damper Assembly for Kitchen Exhaust Ducts'' or ''Exhaust Hood with Exhaust Damper.''

* *

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EXHAUST HOODS WITHOUT EXHAUST DAMPERS CERTIFIED FOR CANADA (YYCW7)

GENERAL

This category covers exhaust hoods without exhaust dampers intended for placement over restaurant-type cooking equipment in accordance with ANSI/NFPA 96, ''Ventilation Control and Fire Protection of Commercial Cooking Operations.''

These products are intended for use with certified fire-extinguishing-system units. They may be provided with manually or automatically operated cleaning or washing systems. These systems are not investigated for grease-extraction efficiency. These systems are not investigated for their suitability as fire-extinguishing-system units for the protection of grease-removal devices and hoods, unless specifically indicated in the individual certifications. Electrical components, if provided, are investigated for compliance with established requirements.

All hoods are marked relative to minimum exhaust air flow and maximum supply air flow, directed into the hood and/or out the bottom (if provided).

Authorities Having Jurisdiction should be consulted before installation.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

Exhaust Hoods Without Exhaust Dampers Certified for Canada (YYCW7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C710 (1980), ''Preliminary Standard for Grease Extractors for Exhaust Ducts.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Hood for Kitchen Exhaust Ducts'' or ''Exhaust Hood Without Exhaust Damper.''

* *

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GREASE DUCTS FOR RESTAURANT COOKING APPLIANCES CERTIFIED FOR CANADA (YYGQ7)

USE AND INSTALLATION

This category covers grease ducts intended for restaurant cooking appliances. Grease ducts are designed to be used with restaurant kitchen hoods and associated ventilating equipment, and are intended to be installed in accordance with the manufacturer's recommended installation instructions and ANSI/NFPA 96, ''Ventilation Control and Fire Protection of Commercial Cooking Operations.''

This category covers grease ducts and grease duct systems intended to be installed at the minimum clearances specified in the individual certifications, where 457 mm clearance is specified in ANSI/NFPA 96. These grease ducts are not intended to be wrapped with certified enclosure systems unless specified in the individual certifications of the grease duct and the enclosure system certification.

Each grease duct system consists of one or more parts, such as straight sections, elbows, tees, wyes and transitions. Tees and wyes are intended for use in common ducts or to provide cleanout and access openings when installed as indicated in the installation instructions. Grease duct parts may be provided with fittings to accept sensors, or wash, sprinkler and spray nozzles. Maximum lengths and heights are limited by certified support and re-support assemblies as indicated in the installation instructions.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Restaurant exhaust hoods are covered under Exhaust Hoods with Exhaust Dampers Certified for Canada (YXZR7) and Exhaust Hoods Without Exhaust Dampers Certified for Canada (YYCW7).

Accessories intended for use with hoods and/or ducts are covered under Hood and Duct Accessories Certified for Canada (YYXS7).

Exhaust ventilators are covered under Power Ventilators for Restaurant Exhaust Appliances Certified for Canada (YZHW7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/ULC-S662, ''Factory-Built Grease Ducts.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Grease Duct Component for Restaurant Cooking Appliance.''

* *

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HOOD AND DUCT ACCESSORIES CERTIFIED FOR CANADA (YYXS7)

USE AND INSTALLATION

This category covers accessories intended for use with hoods and/or ducts installed over commercial cooking equipment.

Hood and Duct Accessories Certified for Canada (YYXS7)−*Continued*

Authorities Having Jurisdiction should be consulted to determine that these accessories are acceptable for use in any given location.

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are ANSI/UL 1978, ''Grease Ducts,'' and ANSI/NFPA 96, ''Installation of Equipment for the Removal of Smoke and Grease Laden Vapors from Commercial Cooking Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Hood and Duct Accessory,'' or other appropriate product name as shown in the individual Listings.

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HOODS/RECIRCULATING SYSTEMS FOR USE WITH SPECIFIED COMMERCIAL COOKING APPLIANCES CERTIFIED FOR CANADA (YZCT7)

USE AND INSTALLATION

This category covers products intended for installation with specific certified commercial cooking appliances, such as fryers, griddles, broilers and other appliances, that are installed in commercial establishments where food is prepared.

Recirculating systems consist of a fan, collection hood, and an air-filtering system consisting of a grease filter, and may incorporate other air-filtering devices. These systems incorporate a fire-extinguishing system that has been investigated with the specified cooking equipment.

These recirculating systems are intended for venting filtered cooking effluent into the room in which the equipment is located. These products are not intended for connection to a ducted exhaust system.

Authorities Having Jurisdiction should be consulted before installation.

RELATED PRODUCTS

Products intended for connection to a ducted exhaust system are covered under Exhaust Hoods with Exhaust Dampers Certified for Canada (YXZR7) and Exhaust Hoods Without Exhaust Dampers Certified for Canada (YYCW7).

Commercial cooking appliances with integral recirculating ventilation systems are covered under Commercial Cooking Appliances with Integral Recirculating Ventilation Systems Certified for Canada (KNKG7).

Commercial cooking appliances with integral systems for limiting the emission of grease-laden air are covered under Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air Certified for Canada (KNLZ7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 109, ''Commercial Cooking Appliances,'' and ANSI/UL 710B, ''Recirculating Systems'' (formerly ANSI/UL 197 Supplement SB, ''Commercial Electric Cooking Appliances with Recirculating Systems'').

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

[PRODUCT NAME*]
FOR USE WITH UL LISTED [Company name] MODEL(S)
COMMERCIAL COOKING APPLIANCE(S)
Control No.
* **RECIRCULATING SYSTEM** or **DUCTLESS HOOD**

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Hoods/Recirculating Systems for Use with Specified Commercial Cooking Appliances Certified for Canada (YZCT7)−*Continued*

turer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

POWER VENTILATORS FOR RESTAURANT EXHAUST APPLIANCES CERTIFIED FOR CANADA (YZHW7)

GENERAL

This category covers power roof- and wall-mounted ventilators and proximity-type ventilators consisting of an impeller and motor in a housing. Roof- and wall-mounted ventilators have a weather-resistant housing and are supported by a weather-resistant steel base designed to fit, by means of a steel curb, over a roof or wall exhaust duct opening for venting restaurant cooking appliances.

These ventilators are designed for the removal of smoke and grease-laden vapors at an exhaust air temperature not exceeding the maximum temperature shown in the individual certifications and on the certified device.

Power ventilators for restaurant exhaust appliances are intended for installation in accordance with ANSI/NFPA 96, ''Ventilation Control and Fire Protection of Commercial Cooking Operations.'' Authorities Having Jurisdiction should be consulted to determine that these appliances are acceptable for use in any given location.

Proximity-type ventilators have an enclosure and are positioned adjacent to the cooking appliance that they serve.

RELATED PRODUCTS

For other types of power ventilators, see Ventilators, Power Certified for Canada (ZACT7).

ADDITIONAL INFORMATION

For additional information, see Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 113, ''Fans and Ventilators,'' and ULC-S645, ''Power Roof Ventilators for Commercial and Institutional Kitchen Exhaust Systems.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Ventilator for Restaurant Exhaust Appliances.''

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VENTILATORS, POWER CERTIFIED FOR CANADA (ZACT7)

GENERAL

This category covers roof- and wall-mounted power ventilators and duct fans consisting of an impeller and motor installed in a housing. Roof- and wall-mounted power ventilators have a weather-resistant housing and are supported by a weather-resistant base intended to fit, by means of a curb, over a wall or roof opening.

These ventilators are intended primarily for commercial or industrial use and are for the purpose of ventilation only. These ventilators consist of exhaust-type and makeup-air-type devices. Makeup-air-type ventilators equipped for evaporative cooling are covered under Humidifiers Certified for Canada (AHIV7).

Duct fans intended to move heated air are investigated to determine the effect of heated air on electrical components and are marked with the maximum temperature of the air.

Power ventilators intended for use where they will be exposed to weather are investigated to determine the effect of rain on electrical components.

These ventilators have not been investigated for installation in fire walls or from the standpoint of their effect on venting in case of fire. Their location should be determined after consultation with the Authority Having Jurisdiction.

RELATED PRODUCTS

Ventilators intended for the primary removal of grease-laden vapors and residues over restaurant cooking appliances are covered under Power Ventilators for Restaurant Exhaust Appliances Certified for Canada (YZHW7).

For other types of fans and blowers, see Fans, Electric Certified for Canada (GPWV7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Heating, Cooling, Ventilating and Cooking Equipment Certified for Canada (AAHC7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113, ''Fans and Ventilators.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Ventilator.''

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INDUSTRIAL MATERIAL HANDLERS CERTIFIED FOR CANADA (ZAJS7)

USE

This category covers products intended for continuous movement of material-laden air.

The instruction manual states these devices are intended for exhausting, material conveying, pollution control and air circulation. These devices are certified as to risk of electric shock and mechanical hazards only.

ADDITIONAL INFORMATION

For additional information, see Ventilators, Power Certified for Canada (ZACT7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 113, ''Fans and Ventilators.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

INDUSTRIAL MATERIAL HANDLER
AS TO ELECTRIC SHOCK AND MECHANICAL HAZARD ONLY
Control No.

* *

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VENTILATORS, POWER FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ZANE7)

GENERAL

This category covers roof- and wall-mounted power ventilators and duct fans consisting of an impeller and motor installed in a housing. Roof- and wall-mounted power ventilators have a weather-resistant housing and are supported by a weather-resistant base intended to fit, usually by means of a curb, over a wall or roof opening. Power ventilators consist of an assembly of UL-certified parts.

These ventilators are intended for industrial use and are for the purpose of ventilation only. These ventilators consist of exhaust type and makeup air type devices. Makeup air-type ventilators are not equipped for evaporative cooling.

Power ventilators intended for use where they will be exposed to weather are investigated to determine the effect of rain on electrical components.

These ventilators have not been investigated for installation in fire walls or from the standpoint of their effect on venting in case of fire. Their location should be determined after consultation with the Authority Having Jurisdiction.

These ventilators are not intended for the primary removal of grease-laden vapors and residues over restaurant cooking appliances.

Metallic impellers are constructed of medium brass or aluminum, with a hardness not over Rockwell B66. Belt-driven power ventilators are investigated for the potential risk of ignition from temperature as a result of belt slippage.

Duct fans intended to move heated air are investigated to determine the effect of heated air on electrical components and are marked with the maximum temperature of the air.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic unclassified locations standard used to investigate products in this category is CSA-C22.2 No. 113 (2010), ''Fans and Ventilators.''

The basic hazardous (classified) locations standards used to investigate products in this category are referenced in Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Ventilator for Use in Hazardous Locations,'' or other appropriate product name as shown in the individual Listings.

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VENTS, SMOKE AND HEAT CERTIFIED FOR CANADA (ZAQR7)

This category covers automatically-operated roof vents and power ventilators for smoke control systems intended for the purpose of localizing the heat released by a fire to the immediate fire area, lowering building temperatures, exhausting smoke, and improving accessibility for fire fighting personnel to permit close approach and direct action against the fire.

The advantages or disadvantages of venting and the conditions under which venting should be provided have not been investigated.

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POWER VENTILATORS FOR SMOKE-CONTROL SYSTEMS CERTIFIED FOR CANADA (ZAXH7)

USE AND INSTALLATION

This category covers power ventilators for smoke-control systems intended for installation in buildings in accordance with ANSI/NFPA 92A, ''Smoke-Control Systems Utilizing Barriers and Pressure Differences,'' and ANSI/NFPA 92B, ''Smoke Management Systems in Malls, Atria, and Large Spaces.''

These ventilators have been investigated with respect to their operation during exposure to elevated temperatures. Information regarding the duration of the exposure and the temperature to which the ventilator has been subjected is marked on the product and indicated in the individual certifications.

Power ventilators for smoke-control systems have not been investigated as being suitable for any specific building design, nor has their effectiveness in controlling the flow of smoke been determined. The performance of these products is subject to the conditions of installation; therefore, the Authority Having Jurisdiction should be consulted prior to installation.

These power ventilators are intended to be connected to and controlled by smoke-control system equipment (see UUKL7).

ADDITIONAL INFORMATION

Power Ventilators for Smoke-control Systems Certified for Canada (ZAXH7)−*Continued*

For additional information, see Vents, Smoke and Heat Certified for Canada (ZAQR7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 113, ''Fans and Ventilators,'' and ULC/ORD-C793, ''Guide for the Investigation of Automatically Operated Smoke and Heat Roof Vents.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Power Ventilator for Smoke Control Systems.''

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ROOF VENTS, AUTOMATICALLY OPERATED CERTIFIED FOR CANADA (ZBDZ7)

GENERAL

This category covers automatically operated smoke and heat roof vents consisting of (1) fusible-link-actuated type having a body frame, one or more damper panels and hatches, and automatic operating mechanism, or (2) plastic-dome type. The vents may be operated manually and/or automatically in the event of fire. Automatic operation does not depend on electrical power or other energy sources that may be interrupted during a fire.

These vents automatically operate by the use of a plastic dome shrinking and falling out of place due to fire exposure. The temperature of operation of the plastic dome-type vents is indicated in the individual certifications.

An optional automatically operated smoke and heat plenum vent can be used as an accessory to a certified door-type automatically operated roof vent for smoke and heat.

Smoke and heat roof vents provided with plastic domes or plastic damper panels are either designed in a manner that flying brands would not be likely to lodge on them, or are protected by a steel wire screen.

For information concerning the spacing of vents and venting ratios, refer to ANSI/NFPA 204M, ''Guide for Smoke and Heat Venting.''

ADDITIONAL INFORMATION

For additional information, see Vents, Smoke and Heat Certified for Canada (ZAQR7) and Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standard used to investigate products in this category is ULC/ORD-C793 (1973), ''Guide for the Investigation of Automatically Operated Smoke and Heat Roof Vents.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Automatically Operated Roof Vent'' or ''Automatically Operated Plenum Vent.''

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ELECTRICAL INDUSTRIAL VIBRATORS FOR USE IN HAZARDOUS LOCATIONS CERTIFIED FOR CANADA (ZBRX7)

GENERAL

This category covers devices designed to produce controlled vibration by electromagnetic means or motor rotor eccentrics, and that have provisions for mounting to impart the vibrating motion to industrial material-handling equipment, such as sieves and hoppers.

ADDITIONAL INFORMATION

For additional information, see Equipment for Use in and Relating to Class I, II and III, Division 1 and 2 Hazardous Locations Certified for Canada (AAIZ7).

REQUIREMENTS

The basic hazardous (classified) locations standard used to investigate products in this category is CSA-C22.2 No. 145 (1986), ''Motors and Generators for Use in Hazardous Locations.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Electric Industrial Vibrator for Hazardous Locations,'' ''Industrial Vibrator for Hazardous Locations'' or ''Industrial Vibrator-Motor for Hazardous Locations.''

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VIDEO AND AUDIO EQUIPMENT, PROFESSIONAL CERTIFIED FOR CANADA (ZCBY7)

USE AND INSTALLATION

This category covers video and audio monitoring, processing, receiving, recording, and reproducing equipment and accessories intended for use and maintenance by technically trained professional personnel in broadcast and recording studios, remote field locations, head end facilities or similar controlled access locations.

Many of these units and systems require special installation such as a separate transformer, power supply, special grounding methods, special mounting, special cable construction, interconnection between units by means of one or more of the wiring methods outlined in CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.'' Such features are covered in the manufacturer's installation instructions.

Information concerning field-wiring connections, mounting location, mounting method, clearances, servicing, and the like are marked on the unit or specified in instructions accompanying the unit.

PRODUCT TYPES

Professional video and audio equipment includes video and audio tape recorders, editing, processing and amplification equipment, signal transmission equipment, television cameras, and video monitors, and the like.

Accessory equipment includes wall-mounting brackets, console enclosures, battery packs, and racks intended for use with professional video and audio equipment are also covered under this category.

RELATED PRODUCTS

For video tape recorders, video cameras and related accessories intended for household or commercial use, see Audio/Video Apparatus Certified for Canada (AZSQ7) and Audio and Video Equipment Certified for Canada (AZUJ7).

For television receivers, commercial and household video monitors and video products incorporating a cathode ray tube display, see Audio/Video Apparatus Certified for Canada (AZSQ7) and Audio and Video Equipment Certified for Canada (AZUJ7).

For household audio tape recorders and players, and related accessories, see Audio/Video Apparatus Certified for Canada (AZSQ7) and Audio and Video Equipment Certified for Canada (AZUJ7). For commercial audio and radio equipment, systems and accessories, see Commercial Audio and Radio Equipment, Systems and Accessories Certified for Canada (AZJX7) and also Audio/Video Apparatus Certified for Canada (AZSQ7). For commercial phonographs, tape playing and recording equipment, see Commercial Phonographs, Tape Playing and Recording Appliances and Accessories Certified for Canada (AZQW7) and Audio/Video Apparatus Certified for Canada (AZSQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 1, ''Audio, Video, and Similar Electronic Equipment,'' CAN/CSA-C22.2 No. 60950 or 60950-1, ''Safety of Information Technology Equipment,'' or CAN/CSA-E60065 or CAN/CSA-C22.2 No. 60065, ''Audio, Video and Similar Electronic Apparatus – Safety Requirements.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Professional Video Equipment," "Professional Audio Equipment" or "Professional Video Product," or the specific product name (prefixed by "Professional" or "Professional Use") as shown in the individual Listings.

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WASHING MACHINES CERTIFIED FOR CANADA (ZCTT7)

USE AND INSTALLATION

This category covers washing machines and combination washer-dryers tested with water as the cleaning liquid. Unless specifically marked, these products are intended for open type installations, which do not include stacking of units or locating in closets, alcoves, or other confined areas. These products are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

Motor-overcurrent protection is included in motor-operated combination washer-dryers if adequate protection would not be provided by the branch circuits to which they would properly be connected.

The normal use of a combination washer-dryer may create a large volume of humid air that may be vented to the room interior. Unless the appliance is properly oriented this moisture could affect electrical wiring or other electrical devices in the vicinity.

Provision should be made for the periodic removal of accumulation of lint that might result from normal operation of a combination washer-dryer.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of the CEC must be observed in installation or use, the necessary special instructions are provided on or with the equipment. An individual branch circuit should be provided for each combination washer-dryer.

Electrically operated washing machines employing wringers are investigated from the standpoint of personal injury as well as electrical hazards. All such devices are required to comply with safety requirements designed to reduce the likelihood of accidents. All wringers are provided with a readily accessible release mechanism, clearly marked to indicate its function.

REBUILT PRODUCTS

This category also covers washing machines, other than combination washer-dryers, that are rebuilt by the original manufacturer or another party having the necessary facilities, technical knowledge and manufacturing skills. Rebuilt washing machines are rebuilt to the extent necessary by disassembly and reassembly using new or reconditioned parts. Rebuilt washing machines are subject to the same requirements as new washing machines.

RELATED PRODUCTS

For electric clothes dryers, see Clothes Dryers Certified for Canada (KMEX7).

For dryers other than electrically heated types, see Dryers Certified for Canada (LEFZ7), Gas-fired Clothes Dryers, Type 1 Certified for Canada (LETA7) and Gas-fired Clothes Dryers, Type 2 Certified for Canada (LETX7).

Products Verified for energy efficiency are covered under Clothes Washers, Household Verified for Energy Efficiency (ZZSR).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 169, "Electric Clothes Washing Machines and Extractors."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Washing Machine" or "Washer," or other appropriate product name as shown in the individual Listings.

For rebuilt products, the word "Rebuilt," "Remanufactured" or "Reconditioned" precedes the product name.

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WASTE DISPOSERS CERTIFIED FOR CANADA (ZDHR7)

USE AND INSTALLATION

This category covers waste disposers intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Commercial waste disposers, because of the volume of material handled and the manner in which they are utilized, do not necessarily incorporate the safeguards which are a part of the household type. Commercial units are intended to be utilized only by competent personnel who are fully instructed concerning the hazards involved.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Waste Disposer," or other appropriate product name as shown in the individual Listings.

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WASTE DISPOSERS, PULPER TYPE CERTIFIED FOR CANADA (ZDIB7)

GENERAL

This category covers commercial pulper-type waste disposers that are intended to grind food waste, food-service products such as paper, cardboard, plastic utensils and wrapping materials, and general office waste.

The waste materials are ground in a chamber supplied with running water to produce a slurry, which is then conveyed to a waterpress assembly by an auger-type drive. Excess water is pressed out of the pulpy waste, and the waste water is discharged into a sanitary drain or recycled back to the grinding chamber. The de-watered pulp is disposed of in a waste container.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, "Motor-Operated Appliances (Household and Commercial)."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Pulper-Type Waste Disposer," or other appropriate product name as shown in the individual Listing.

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WASTE DISPOSERS, SINK MOUNTED CERTIFIED FOR CANADA (ZDII7)

USE

This category includes waste disposers for household or commercial use, which are intended to convert primarily organic types of waste material to a form which can be accommodated by the soil pipe attached to plumbing systems.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Waste Disposer,'' or other appropriate product name as shown in the individual Listings.

* *

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WATER SOFTENERS, DEMINERALIZERS AND WATER TREATMENT UNITS CERTIFIED FOR CANADA (ZDUZ7)

USE AND INSTALLATION

This category covers water softeners, demineralizers and other water treatment units and control assemblies rated 300 v maximum and intended for use in cold water systems. These products are intended for use in unheated water systems. It includes products employing the following or a combination of the following water treatment methods: cation exchange, ozone generation, filtering, reverse osmosis, ultraviolet radiation, and ionization. These products are intended for installation in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This category does not cover the aesthetic or health effects of the water treatment technology.

Products intended for use outdoors are marked ''Suitable for Outdoor Use.''

Industrial equipment is intended for permanent connection to the power supply.

Control assemblies include all switches, valves, etc., necessary for regeneration, but do not include connecting pipes or tanks.

Care should be taken during installation to consider possible cross-contamination of the water supply due to low pressure or reverse action. Authorities Having Jurisdiction should be consulted for plumbing requirements for sanitation and plumbing connections.

RELATED PRODUCTS

Equipment used in spas or swimming pools is covered under Water Treatment Equipment Certified for Canada (WDLC7).

Aquarium equipment is covered under Aquarium Equipment Certified for Canada (AVRR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial).''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Water Softener,'' ''Water Demineralizer'' or ''Water Clarifier,'' or other appropriate product name as shown in the individual Listings.

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WATER TREATMENT UNITS EMPLOYING OZONE GENERATION CERTIFIED FOR CANADA (ZEIX7)

GENERAL

This category covers water treatment equipment employing ozone generation, investigated with respect to mechanical, electric shock, and fire hazards only.

The methods for controlling ozone release or the effectiveness of the water treatment have not been investigated.

RELATED PRODUCTS

Water treatment units employing ozone generators and intended for use only with swimming pools, spas and hot tubs are covered under Ozone Generators Certified for Canada (WCKA7) or Water Treatment Equipment Certified for Canada (WDLC7).

Aquarium equipment is covered under Aquarium Equipment Certified for Canada (AVRR7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7) and Plumbing and Associated Products Certified for Canada (AAPP7).

REQUIREMENTS

The basic standard used to investigate products in this category is CAN/CSA-C22.2 No. 68, ''Motor-Operated Appliances (Household and Commercial).''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL Mark for Canada symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

OZONE GENERATOR
WITH RESPECT TO RISK OF ELECTRIC SHOCK,
FIRE AND MECHANICAL INJURY ONLY
Control No.

* *

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WELDING MACHINES CERTIFIED FOR CANADA (ZGLZ7)

USE

This category covers portable and stationary transformer-type arc-welding equipment rated 600 V or less. This equipment is intended to be installed in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

The welding machines are designed to be operated at rated input and output. They are occasionally operated under heavy overloads. The nature of the service for which they are intended requires frequent loading and unloading so their duty under heavy overload is of an intermittent nature. This overload is somewhat analogous to the inherent overload capacity of motors and transformers, and it is not covered at present by any definite requirements and is not investigated by UL. However, the abuse of this excess current capacity — the overloading of a welding machine, except for relatively short periods of time may be hazardous and should receive careful consideration by all those concerned.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 60 (1990), ''Arc-Welding Equipment.''

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ″LISTED,″ a control number, and the product name ''Welding Machine,'' or other appropriate product name as shown in the individual Listings.

* *

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WELDING MACHINE ACCESSORIES CERTIFIED FOR CANADA (ZGPU7)

USE

This category covers products designed to be used with certified arc-welding machines, such as wire feeders and vacuum units for welding-smoke removal. This category also covers arc-cutting equipment, such as arc-cutting power supplies, for industrial applications. These products are intended for installation and use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

ADDITIONAL INFORMATION

For additional information, see Welding Machines Certified for Canada (ZGLZ7) and Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 60, "Arc-Welding Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Welding Machine Accessory," or other appropriate product name as shown in the individual Listings.

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WHEELCHAIR LIFTS AND STAIRWAY CHAIRLIFTS CERTIFIED FOR CANADA (ZGUW7)

USE

This category covers permanently installed vertical and inclined wheelchair lifts and inclined stairway chairlifts for use by the physically disabled in both commercial and private residence locations.

ADDITIONAL INFORMATION

For additional information, see Building Materials Certified for Canada (AABM7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-B355 (1986), "Elevating Devices for the Handicapped," and CAN/CSA-B613 (1987), "Elevating Devices for the Handicapped in Private Residences."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wheelchair Lift" or "Stairway Chairlift," or other appropriate product name as shown in the individual Listings.

* *

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WIRE CERTIFIED FOR CANADA (ZGZX7)

FLEXIBLE CORD CERTIFIED FOR CANADA (ZJCZ7)

GENERAL

Flexible Cord Certified for Canada (ZJCZ7)−*Continued*

This category covers flexible cord constructed and certified for use in accordance with Section 4 of CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC). All conductors are stranded copper.

Voltage Rating

Types TX and PXT are rated 125 V.

Types E (12 – 2 AWG), ETT (12 – 2 AWG), ETP (12 – 2 AWG), EO (12 – 2 AWG), CXWT (14 – 12 AWG), S, SO, SOO, SOW, SOOW, ST, STO, STOO, STW, STOW and STOOW are rated 600 V.

Types E (20 – 12 AWG), ETT (20 – 12 AWG), ETP (20 – 12 AWG), EO (20 – 12 AWG), CXWT (18 – 16 AWG), SV, SVO, SVOO, SJ, SJO, SJOO, SJOW, SJOOW, SPT-1, SPT-1W, SPT-2, SPT-2W, SPT-3, NISPT-1, NISPT-2, SVT, SVTO, SVTOO, SJT, SJTO, SJTOO, SJTW, SJTOW, SJTOOW, TPT, TST, DRT, PXWT HPN, HSJ, HSJO, HSJOW, HSJOO and HSJOOW are rated 300 V.

Types E, EO, ETT and ETP in 12 AWG are rated 300 or 600 V, depending on insulation thickness.

Temperature Rating

Types S, SO, SOO, SOW, SOOW, SJ, SJO, SJOO, SJOW, SJOOW, SPT-1, SPT-1W, SPT-2, SPT-2W, SPT-3, NISPT-1, NISPT-2, SVT, SVTO, SVTOO, SJT, SJTO, SJTOO, SJTW, SJTOW, SJTOOW, ST, STO, STOO, STW, STOW and STOOW are rated 60, 75, 90 or 105°C.

Types SV, SVO and SVOO are rated 60, 75 or 90°C.

Type DRT is rated 60 or 90°C.

Types TX, PXT, TPT, TST, E, EO, ETT, CXWT, and PXWT are rated 60°C.

Types HPN, HSJ, HSJO, HSJOW, HSJOO and HSJOOW are rated 90 or 105°C.

Cord Types or Characteristics Not Covered by the CEC

Type TX is a twisted assembly of two conductors intended for use in decorative-lighting equipment.

Types HSJOW and HSJOOW are outdoor-use versions of types HSJO and HSJOO, respectively.

PRODUCT MARKINGS

"VW-1" indicates that the finished cord and the individual conductors comply with a vertical flame test.

"FT-1" indicates that only the finished cord complies with a vertical flame test.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 49, "Flexible Cords and Cables."

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Flexible Cord."

The Listing Mark for this category requires the use of a holographic label.

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GAS-TUBE-SIGN AND IGNITION CABLE CERTIFIED FOR CANADA (ZJQX7)

GENERAL

This category covers gas-tube-sign and ignition cable certified as single conductor Type GTO-5 (5,000 V), GTO-10 (10,000 V) or GTO-15 (15,000 V) intended for use with gas-tube systems for signs, outline lighting and interior lighting, and for use also in the ignition systems of oil- and gas-burning equipment at voltages up to 15,000 V.

Ignition cable is certified as single conductor Type ICS for use in the ignition systems of oil- and gas-burning equipment at voltages up to 10,000 V.

The letter "L" is used as a suffix in combination with any of the preceding Type GTO letter designations to indicate that an outer covering of lead has been applied.

ADDITIONAL INFORMATION

For conductor terminal information and additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 127, "Equipment and Lead Wires."

UL MARK

Gas-Tube-Sign and Ignition Cable Certified for Canada (ZJQX7)−*Continued*

The UL symbol on the product and the Listing Mark of UL on the attached tag, the coil, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," and the product name as appropriate: A cable containing a copper conductor has the product name "Gas Tube Sign and Ignition Cable"; a cable containing an aluminum conductor has the product name "Gas Tube Sign and Ignition Aluminum Cable."

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PROCESSED WIRE CERTIFIED FOR CANADA (ZKLU7)

GENERAL

This category covers Listed wire, flexible cord and cable, and Classified cable that has been subjected to processing subsequent to Labeling and identified as either processed wire or processed wire – respooled.

Listed wire, flexible cord and cable identified as "Listed Processed Wire" has been cut into certain lengths from which the insulation may be stripped from one or both ends. The stripped ends may be soldered or tinned and may have simple terminals of the eyelet, ring, open spade or quick-connect type attached by crimping, soldering or welding.

These lengths may be packaged for further processing. Single lengths of Listed processed wire and cable may be paralleled with other insulated wire and cable and may be held together by an open binder.

Products identified as "Listed Processed Wire – Respooled" are single, continuous lengths of wire, flexible cord or cable cut from a longer length and coiled or placed on a spool or reel.

Products identified as "Classified Processed Wire" has been cut into certain lengths from which the insulation may be stripped from one or both ends. These lengths may be packaged for further processing. Single lengths of Classified processed wire may be paralleled with other insulated cable and may be held together by an open binder.

Products identified as "Classified Processed Wire – Respooled" are single, continuous lengths of Classified cable cut from a long length and coiled or placed on a spool or reel.

The tag markings from the wire spooler reel (e.g., voltage, temperature, insulation thickness, usage) are provided on the processed wire tag attached to the product.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 49, "Flexible Cords and Cables," CSA-C22.2 No. 75, "Thermoplastic-Insulated Wires and Cables," or CSA-C22.2 No. 38, "Thermoset Insulated Wires and Cables," and CAN/CSA-C22.2 No. 65, "Wire Connectors," or CSA-C22.2 No. 188, "Splicing Wire and Cable Connectors."

UL MARK

The Listing or Classification Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing or Classification and Follow-Up Service. The Listing or Classification Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED" or "CLASSIFIED" respectively, a control number, and the product name "Processed Wire" or "Processed Wire – Respooled."

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THERMOSET-INSULATED WIRE CERTIFIED FOR CANADA (ZKST7)

GENERAL

This category covers thermoset-insulated wire intended for use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." The wire

Thermoset-insulated Wire Certified for Canada (ZKST7)−*Continued*

tabulated below is rated 600 or 1000 V, except that Types RW75, R90 and RW90 in conductor sizes 8 AWG and larger may be rated up to 5000 V.

PRODUCT MARKINGS

The wire is designated as follows:

RW75, RWU75 — Indicates a single-conductor thermoset-insulated construction having ratings of 75°C wet or dry. Type RW75 may also be cabled together with one or more Type RW75 conductors and jacketed.

RW90, RWU90 — Indicates a single-conductor thermoset-insulated construction having ratings of 90°C wet or dry. Type RW90 may also be cabled together with one or more Type RW90 conductors and jacketed.

R90 — Indicates a single-conductor thermoset-insulated construction having a rating of 90°C dry. Type R90 may also be cabled together with one or more Type R90 conductors and jacketed.

The above types may have the following optional ratings marked on the surface of the wire, where applicable:

The voltage rating, if other than 600 V.

"MINUS 40 C" — indicates that it can be handled down to -40°C.

"ALUMINUM" (or "ALUM") — indicates aluminum conductor.

"FTI" — indicates the wire meets the requirements of the FT1 Flame Test.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 38, "Thermoset-Insulated Wires and Cables."

UL MARK

The Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name as appropriate: Thermoset-insulated wire that contains copper conductors has the product name "Insulated Wire"; thermoset-insulated wire that contains aluminum conductors has the product name "Insulated Aluminum Wire."

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THERMOPLASTIC-INSULATED WIRE CERTIFIED FOR CANADA (ZLGR7)

USE

This category covers thermoplastic-insulated wire and cable rated 600 V and intended for use in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

PRODUCT TYPES

The wire and cable is designated as follows:

TW, TWU — Indicates a single-conductor, thermoplastic-insulated construction having ratings of 60°C wet or dry.

TW-75, TWU-75 — Indicates a single-conductor, thermoplastic-insulated construction having ratings of 75°C wet or dry.

T-90 NYLON — Indicates a single-conductor, thermoplastic-insulated, nylon-jacketed construction having a rating of 90°C dry.

TWN75 — Indicates a single-conductor, thermoplastic-insulated, nylon-jacketed construction having a rating of 75°C wet or dry.

SUBMERSIBLE PUMP CABLE — Indicates a 2, 3 or 4 conductor cable, with or without an overall jacket and bonding conductor, suitable for handling at -40°C.

PRODUCT MARKINGS

The above types may have the following ratings marked on the surface of the wire, where applicable:

"OIL RESISTANT" or "PR" (multinational marking) — Indicates 60°C oil resistance.

"MINUS 40C" — Indicates that it can be handled at temperatures down to -40°C.

"NYLON" — Indicates use of a nylon jacket (Types TW, TWU, TW-75, TWN75 and TWU-75 only).

"GASOLINE RESISTANT" or "GR" (multinational marking) — Indicates resistance to gasoline at ambient temperatures.

"ALUMINUM" or "ALUM" — Indicates aluminum conductor.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

Thermoplastic-insulated Wire Certified for Canada (ZLGR7)−*Continued*

The basic standard used to investigate products in this category is CSA-C22.2 No. 75, ''Thermoplastic-Insulated Wires and Cables.''

UL MARK

The Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Insulated Wire'' for products containing copper conductors, or ''Insulated Aluminum Wire'' for products containing aluminum conductors.

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UNDERGROUND LOW-ENERGY CIRCUIT CABLE CERTIFIED FOR CANADA (ZLIA7)

USE

This category covers wire and cable for use as extra-low-voltage control circuits (LVT) in wire sizes 22 to 16 AWG, as extra-low-voltage control cable (ELC) in wire sizes 26 to 16 AWG, in golf course sprinkler systems (GCS) or lawn sprinkler systems (LSS) in wire sizes 20 to 2 AWG, and low-voltage landscape lighting (LVLL) or underground low-energy circuits (ULEC) in wire sizes 18 to 8 AWG, intended for operation at no more than 30 V and 60°C, and as low-energy control cable (LECC) in wire size 18 AWG, intended for operation at no more than 30 V and 105°C.

PRODUCT MARKINGS

The wire is marked with the Listee's name, trade name or file number, type designation, conductor size, voltage rating and temperature rating (LECC only).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 35, ''Extra-low-voltage Control Circuit Cable, Low-energy Control Cable, and Extra-low-voltage Control Cable.''

UL MARK

The Listing Mark of UL on the attached tag, the reel, or the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the specific name or type designation of the wire, such as ''Lawn Sprinkler System Wire'' (or ''LSS Wire'').

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WELDING CABLE CERTIFIED FOR CANADA (ZMAY7)

USE AND INSTALLATION

This category covers welding cable, which is a single-conductor cable intended for use in accordance with CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

This cable is rated 60, 75, 90 or 105°C and is used in the secondary circuit of electric welders. The cable has no voltage rating. The cable is flame rated minimum FT2.

Welding cable employs flexible stranded copper conductors, 8 AWG – 300 kcmil, the individual strands of which are 34, 32 or 30 AWG.

PRODUCT MARKINGS

The temperature and flame ratings are identified by tag marking and by printing on the surface of the insulation. Cable is rated 60°C unless marked otherwise.

Cable marked ''Oil Resistant'' is suitable for exposure to oil at 60°C.

This cable may be marked ''-40C.'' If so marked, the cable complies with a cold bend test and a low-temperature impact test at -40°C. Cable marked ''-50C,'' ''-60C'' or ''-70C'' complies with a cold bend test and a low-temperature impact test at -50, -60 or -70°C, as applicable.

Welding Cable Certified for Canada (ZMAY7)−*Continued*

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 96, ''Portable Power Cables.''

UL MARK

The UL symbol on the product and the Listing Mark of UL on the attached tag, the coil, the reel, or the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the product name ''Welding Cable.''

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WIRE, SPECIAL PURPOSE CERTIFIED FOR CANADA (ZMHX7)

GENERAL

This category covers constructions of wire and cable, each intended for the particular application marked on the product, tag, carton or reel. Included in this category are: Golf Course Sprinkler (GCS) Wire, Lawn Sprinkler System (LSS) Wire, Low Voltage Landscape Lighting (LVLL) Wire, and Underground Low Energy Circuit (ULEC) Cable, all rated 60°C, 30 V.

PRODUCT MARKINGS

Information regarding installation, ampacity, etc., where appropriate, is included in the marking found on the tag, reel or carton.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic requirement used to investigate products in this category is CSA T.I.L. No. J-17C, ''Interim Certification Requirements for Golf Course Sprinkler (GCS) or Lawn Sprinkler System (LSS) Wire and Cable, for Low Voltage Landscape Lighting (LVLL) Wire and Cable, and for Underground Low Energy Circuits (ULEC).''

UL MARK

The Listing Mark of UL on the attached tag, the reel or the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word ''LISTED,'' a control number, and the specific name or type designation of the wire, such as ''Lawn Sprinkler System Wire'' (or ''LSS Wire''). The name of the category ''Special Purpose Wire Certified for Canada'' is not used.

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WIRE CONNECTORS CERTIFIED FOR CANADA (ZMKQ7)

CRIMP TOOLS CERTIFIED FOR USE WITH SPECIFIED WIRE CONNECTORS CERTIFIED FOR CANADA (ZMLS7)

USE

This category covers crimp tools suitable for use with specific certified Grounding and Bonding Equipment Certified for Canada (KDER7), Electrical Quick-connect Terminals Certified for Canada (RFWV7) and Wire Connectors and Soldering Lugs Certified for Canada (ZMVV7) in accordance with the Certification Mark and a compatibility list provided with the tool.

The inside cover of the tool storage case or a permanently attached label to the tool itself contains a compatibility list which tabulates the company

Crimp Tools Certified for Use with Specified Wire Connectors Certified for Canada (ZMLS7)−*Continued*

name and catalog number of the crimp tool and the company name, catalog number, wire size and number of crimps of the applicable certified grounding and bonding connectors, quick-connect terminals, and wire connectors for which the crimp tool has been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CSA-C22.2 No. 41 (2013), ''Grounding and Bonding Equipment,'' CSA-C22.2 No. 153 (2009), ''Electrical Quick-Connect Terminals,'' CSA-C22.2 No. 188 (2013), ''Splicing Wire Connectors,'' and/or CSA-C22.2 No. 65 (2013), ''Wire Connectors.''

UL MARK

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word ''CLASSIFIED'' above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

CRIMP TOOL
FOR USE WITH UL LISTED *
IDENTIFIED IN THE INSTRUCTIONS PROVIDED
Control No.

* One or more of the following: **GROUNDING AND BONDING CONNECTORS**, **QUICK CONNECT TERMINALS**, **WIRE CONNECTORS**

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MULTI-POLE SPLICING WIRE CONNECTORS CERTIFIED FOR CANADA (ZMNA7)

USE AND INSTALLATION

This category covers insulated multi-pole mating and nonmating splicing wire connectors intended for field wiring and factory wiring. Multi-pole splicing wire connectors are intended to facilitate the connection of hard-wired utilization equipment (e.g., prefabricated wiring assemblies, ceiling fans, smoke detectors, lighting products) to the branch-circuit conductors of buildings. They are multi-polarity devices used to connect to two or more branch-circuit conductors.

This category also covers luminaire disconnects, which are intended to be used:

1. internal to luminaires to facilitate replacement of the ballast, or
2. for LED retrofit applications.

Luminaire disconnects are not intended to be directly attached to the branch-circuit conductors for the purpose of interrupting (making and breaking) branch circuits other than those for the luminaire associated with the disconnect. Luminaire disconnects may have one or more conductors per contact.

Mating connectors consist of two separable mating members (usually consisting of a male/female connection) that can be readily engaged or disengaged without the use of tools. They are provided with a latching mechanism and are physically keyed to maintain correct polarity. Luminaire (ballast) disconnects need not be provided with a latch or locking mechanism, and have not been investigated as latching- or locking-type devices.

Nonmating connectors are single devices used to facilitate the direct connection to the branch-circuit conductors.

Multi-pole splicing wire connectors are not intended to be permanently mounted. They are floating in an outlet, junction box or within a piece of equipment, such as a luminaire.

These wire connectors are suitable for currents not exceeding the ampacity of insulated conductors or the rated ampacity of the connector.

These wire connectors are intended for use in installations covered by CAN/CSA-C22.1, ''Canadian Electrical Code, Part I.''

Reusability — These connectors have not been investigated for reusability, except for spring-action-type connectors without the one-time-use-only marking.

Make and break — These wire connectors have been subjected to 10 operations of making and breaking 150% of current.

Box fill — These wire connectors have not been investigated for volume (box fill) and their acceptance in this capacity should be determined by the Authority Having Jurisdiction.

Multi-pole Splicing Wire Connectors Certified for Canada (ZMNA7)−*Continued*

Use of specific tools — A specific tool and die used to assemble a multi-pole splicing wire connector to a conductor is identified on the connector, or on or within the unit container of the connector. The identification consists of a catalog or type designation, color coding, die index number, or equivalent means.

Multiple crimping operations — The number of crimps necessary to make a connection using the specific tool is identified on the connector, or on or within the unit container of the connector. Absence of information implies a single crimp.

Conductor strip length — Multi-pole splicing wire connectors requiring a specific strip length have this information identified on the connector, on or within the unit container of the connector, on an insulating cover, or on the tool or tool-carrying case.

PRODUCT MARKINGS AND RATINGS

Wire size — Multi-pole splicing wire connectors are rated for copper conductors only. The wire size or wire range is marked on the connector, or on or within the unit container.

Multi-pole splicing wire connectors have not been investigated for use with aluminum conductors.

Multiple conductors — Multi-pole splicing wire connectors generally accommodate a single conductor under each clamping mechanism unless otherwise identified (e.g., the number of conductors located parenthetically in front of the wire size or range). Some connectors may have a single-conductor wire range as well as a second multiple-conductor wire range.

Wire stranding — Unless clearly marked ''Solid,'' ''SOL,'' ''Stranded'' or ''STR'' for a given wire size, wire range or wire combination, conductors in the range 10–30 AWG are both solid and stranded, and 6–8 AWG are for stranded wire only.

Stranded conductor Class — Multi-pole splicing wire connectors are rated for use with stranded Class B concentric, Class B compressed, and Class C concentric copper conductors.

Strip length — Multi-pole splicing wire connectors are marked with an insulation strip length for the conductor before assembly to the wire connector.

Conductor material — Multi-pole splicing wire connectors are marked ''CU'' or ''Copper Wire Only.''

Ampacity level — Other than luminaire disconnects, multi-pole splicing wire connectors are suitable for currents not exceeding the ampacity of insulated conductors rated 90°C. Use of higher-temperature-rated conductors is permitted, provided the ampacity levels continue to be based on the 90°C ratings.

Assigned ampere rating — A luminaire (ballast) disconnect is marked with its assigned ampere rating on the device or the unit container.

Luminaire disconnect — Multi-pole splicing wire connectors are intended to hot disconnect a ballast within a luminaire and are marked ''Luminaire Disconnect.''

Insulation temperature rating (maximum operating temperature) — Insulated multi-pole splicing wire connectors are marked with an insulation temperature rating. Insulated connectors, insulating caps and insulating covers that have an insulation temperature greater than the connector ampacity level are marked ''Temperature Rating of Insulating Material ___°C.''

Voltage rating — Insulated multi-pole splicing wire connectors are marked with a voltage rating on the device or the unit container.

Flammability rating — Insulated multi-pole splicing wire connectors may be additionally marked with a flammability rating of V-2, V-1, V-0, VTM-2, VTM-1 or VTM-0.

Assigned torque rating — Multi-pole splicing wire connectors may be marked with an assigned torque value for which the connector was investigated.

Circuit identification — Unless provided with color-coded integral lead wires, multi-pole splicing wire connectors are marked to identify each terminal with the intended conductor polarity (e.g., G, B, W, L1, L2). Color-coded integral lead wires may also be used for circuit identification. The ground terminal, if provided, is marked with the international symbol for ground or with ''G,'' ''GR,'' ''GND,'' ''Ground,'' ''Grounding,'' or similar marking. An integral lead wire for grounding is color-coded green.

One-time use — Multi-pole splicing wire connectors employing spring-action-type terminations and intended for one-time use only are marked ''One-Time Use Only - Do Not Reuse,'' or the equivalent.

Limited current interruption — Mating-type multi-pole splicing wire connectors are marked ''Limited Number of Current Interrupting Operations,'' or the equivalent, to identify that the device has been investigated for a maximum of 10 make-and-break current operations.

Installation instructions — Multi-pole splicing wire connectors are marked ''To be sold only with installation instructions.''

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

Multi-pole Splicing Wire Connectors Certified for Canada (ZMNA7)−*Continued*

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 2459 (2008), "Insulated Multi-Pole Splicing Wire Connectors."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Multi-pole Splicing Wire Connector" or "Luminaire Disconnect," or other appropriate product name as shown in the individual Listings.

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WIRE CONNECTORS AND SOLDERING LUGS CERTIFIED FOR CANADA (ZMVV7)

USE

This category covers single-polarity wire connectors for use with all alloys of copper or aluminum conductors, or both, for the purpose of providing contact between current-carrying parts. Wire connectors may be uninsulated, supplied with integral insulation, or separable insulation in the form of insulating caps or covers.

Terminal connectors establish a connection between one or more conductors to a terminal plate or stud, or to any similar device by means of mechanical pressure. They are fixed in position.

Splicing wire connectors establish a connection between two or more conductors by means of mechanical pressure and are not intended to be permanently mounted. They are floating, such as a twist-on connector in an outlet box.

Insulating caps or covers are for general use when installed on specific connectors. Information covering use of the caps or cover on specific connectors appears on the unit containers in which the caps or covers are packaged.

Soldering lugs are terminal connectors designed for attachment to a conductor by means of solder (nonpressure).

Reusability — Wire connectors have not been investigated for reusability. Reusability should be determined by the installer and the Authority Having Jurisdiction.

Direct burial — Wire connectors have not been investigated for direct burial. See **RELATED PRODUCTS**.

Use in service equipment — Where wire connectors are used as a part of service equipment, dead-front switchboards, panelboards, meter sockets, enclosed switches, circuit breakers, etc., reference should be made to the General Information for those categories concerning the use of the wire connectors. When wire connectors suitable for use with aluminum conductors are employed in such equipment, the suitability for wiring with aluminum conductors of such equipment will be indicated by a marking on the equipment and is independent of any marking on the wire connector.

INSTALLATION

Wire connectors are intended for use in installations covered by CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC), and should be installed using the prescribed manufacturer's installation instructions.

Stacking of connectors (multiple connectors assembled using a single bolt, nut and washers) may be permitted where mechanical interference is reduced or eliminated with the use of offset tangs, stacking adapters, and the like. The surface contact area of the mounting tang should make complete contact with the mounting surface or the previously stacked connector tang.

PRODUCT MARKINGS AND RATINGS

Wire size and wire combinations — Wire connectors are rated for 30 AWG or larger copper conductors and/or 12 AWG or larger aluminum conductors. The wire size, wire range or wire combinations are marked on the connector, or on or within the unit container. Wire connectors additionally investigated for metric-size conductors are marked with the metric wire sizes expressed in mm^2.

Multiple conductors — Connectors generally accommodate a single conductor under a clamping mechanism unless otherwise identified, such as with the number of conductors located parenthetically in front of the wire size or range. Some connectors may have a single-conductor wire range as well as a second multiple-conductor wire range. Some connectors, such as twist-on connectors, will have multiple conductors expressed in a list of wire combinations.

Wire Connectors and Soldering Lugs Certified for Canada (ZMVV7)−*Continued*

Parallel conductors — Connectors intended for paralleling of conductors are intended to be used in accordance with Section 12-108 of the CEC. Parallel connectors may have multiple-conductor clamping mechanisms, each accepting a single conductor or a singular clamping mechanism accepting multiple conductors.

Wire stranding — Unless clearly marked "Solid," "SOL," "Stranded" or "STR" for a given wire size, wire range or wire combination, conductors in the range 30–10 AWG are both solid and stranded, and 8 AWG and larger are for stranded wire only. Connectors additionally rated for metric conductor sizes may be marked with the letter "r" for rigid solid and rigid stranded conductors, or the letter "f" for flexible conductors.

Stranded conductor Class — Connectors rated for use with stranded conductors are for the following strand configurations:

- Aluminum – Class B concentric, compressed or compact, and SIW (single input wire)
- Copper – Class B concentric or compressed, Class B compact (sizes 8 AWG and larger) and Class C concentric

Wire connectors additionally rated for use with compact copper conductors are additionally marked "For compact-stranded copper conductors" or equivalent on the connector, or on or within the unit container.

Wire connectors additionally rated for use with other Class conductors, such as Class M, are marked with the additional class designation and number of strands.

Strip length — Some connectors or their unit containers are marked with a strip length for the conductor before assembly to the wire connector.

Conductor material — Wire connectors or the unit containers are marked with the type of conductor material(s) as follows:

Marking (or equivalent)	For Use With
"CU"	Copper wire only
"AL"	Aluminum wire only
"AL-CU" or "CU-AL"	Copper to copper, aluminum to aluminum, and copper to aluminum but not intermixed or in direct physical contact
"AL-CU (intermixed – dry locations)"	Copper to copper, aluminum to aluminum, and copper to aluminum intermixed

Except as otherwise noted on or in the shipping carton, copper and aluminum conductors are not intended to be used in direct physical contact in the same connector. A wire connector for securing an aluminum wire in combination with a copper conductor, where physical contact occurs between the wires of different metals, is limited to dry locations only and is marked "AL-CU (intermixed – dry locations)."

Ampacity level rating:

A. **Equipment use** — Equipment wiring requirements may restrict the sizing, ampacity and temperature ratings of connected conductors. Equipment requirements may limit 90°C or higher-rated conductors to 60 or 75°C ampacity in accordance with Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

B. **General use** — Connectors rated 75°C are intended for use at ampacities not greater than those for 75°C-rated conductors, and connectors rated 90°C are for use at ampacities not greater than those for 90°C-rated conductors. Connectors may be marked with "75C" or "90C" to represent these levels. Alternatively, these rating levels may be represented by a 7 or 9 associated with the marking "CU," "AL" or "AL-CU," e.g., "AL9," "AL9CU," "AL7CU," "CU7," "CU9." Connectors not marked with an ampacity number 7 or 9 have an assumed level per the following table. Use of higher-temperature-rated conductors is not prohibited, provided the ampacity levels continue to be based on the 75 or 90°C ratings.

Connectors are rated and marked as follows:

Type of Connector	Rated For	Wire Range	Temp Marking	Rating
Terminal (CU body)	CU only	All	Not marked	90
Terminal (AL body)	CU only	All	75 or 90	As marked@
Terminal	AL or AL-CU	All	75 or 90	As marked@
Splicing wire	CU only	30-6	Not marked	90
Splicing wire (CU body)	CU only	4 and larger	Not marked	90
Splicing wire (AL body)	CU only	4 and larger	75 or 90	As marked
Splicing wire	AL or AL-CU	30–6	Not marked	75
Splicing wire	AL or AL-CU	4 and larger	75 or 90	As marked

@ Terminal connectors rated for 6 AWG or smaller conductors may have the markings on the connector, the unit container, or on an information sheet packed in the unit container.

Wire Connectors and Soldering Lugs Certified for Canada (ZMVV7)−*Continued*

Insulation temperature rating (maximum operating temperature) — Insulated connectors, insulating caps and insulating covers have an insulation temperature rating marked on the device or the unit container. Insulated connectors, insulating caps and insulating covers that have an insulation temperature greater than the connector ampacity level rating are marked "Temperature Rating of Insulating Material ___°C."

Voltage rating — Uninsulated wire connectors are rated for general use in circuits up through 2000 V. Uninsulated wire connectors may be used in circuits over 2000 V up through 35,000 V where the effects of corona have been investigated in the end-use application. Uninsulated wire connectors are not marked with a voltage rating.

Insulated wire connectors, insulating caps and insulating covers have voltage ratings for which they have been found acceptable. The voltage rating is marked on the device or the unit container and may be stated as "300 volts maximum," "600 volts maximum," or "600 volts maximum building wire, 1000 volts maximum, in signs or luminaires," or equivalent wording.

Flammability rating — Insulated connectors and insulating caps and covers may be additionally marked with a flammability rating of V-2 or VTM-2 or better.

Assigned torque rating — A connector or its unit container may be marked with an assigned torque value for which the connector was investigated.

INSTALLATION INSTRUCTIONS

Use of specific tools — A specific tool and die used to assemble a wire connector to a conductor is identified on the connector, or on or within the unit container of the connector. The identification consists of a catalog or type designation, color-coding, die index number, or equivalent means. Color-coding of the crimp barrel is common.

Multiple crimping operations — The number of crimps necessary to make a connection using the specific tool is identified on the connector, or on or within the unit container of the connector. Location and number of crimping points is commonly located on the crimp barrel of the connector.

Conductor strip length — Wire connectors requiring a specific strip length have this information identified on the connector, on or within the unit container of the connector, on an insulating cover, or on the tool or tool-carrying case. Strip-length marking is optional for some constructions.

Preliminary preparation of conductor — Some wire connectors supply instructions for the preliminary preparation of conductors, such as use of conductor termination compound (antioxidant compound) or pre-twisting of conductors, on or within the unit container.

Pre-twisting — Some connectors may specify that conductors are to be pre-twisted before assembly onto the connector.

Conductor termination compound — Some connectors are shipped prefilled with conductor termination compound (antioxidant compound). For non-prefilled connectors, conductor termination compound may be used if recommended by the connector manufacturer as preliminary preparation of the conductor. Wire brushing of the conductor may also be performed if recommended.

RELATED PRODUCTS

Sealed wire-connector systems intended for direct burial, below-grade use, or similar damp or wet locations are covered under Sealed Wire-connector Systems Certified for Canada (ZMWQ7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 65, "Wire Connectors," and CSA-C22.2 No. 188, "Splicing Wire and Cable Connectors."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged, with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Wire Connector," "Soldering Lug," "Terminal Connector," "Splicing Wire Connector," or other appropriate product name as shown in the individual Listings.

* *

SEALED WIRE-CONNECTOR SYSTEMS CERTIFIED FOR CANADA (ZMWQ7)

USE AND INSTALLATION

This category covers sealed wire-connector systems intended for wet or damp locations and other installations, such as direct burial, below grade, or above grade where protected from direct exposure to sunlight. These systems may also be used indoors or in dry locations.

Sealed wire-connector systems are intended for use in installations covered by CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

Sealed wire-connector systems have not been investigated for direct exposure to sunlight. Additional performance considerations to show equivalency to the connected conductors should be considered for UV exposure.

This category covers a complete system or insulating caps, covers, resins, tubing and tapes that are part of the system for use with specific wire connectors where the seal is made at the conductor. Pressure wire connectors may or may not be provided with the system.

CONDUCTOR TYPES

Sealed wire-connector systems are intended for use with Types USE, RHW, XHHW, RW90 EP, RW90 XLPE or TWU, 30 AWG through 2000 kcmil copper or aluminum conductors with currents not exceeding the ampacity of insulated conductors rated either 75 or 90°C and intended for use at 600 V or less.

When so marked, sealed wire-connector systems may also be intended for use with conductors of single- or multiple-conductor underground feeder cable (Type UF), golf course sprinkler cable, underground low-energy cable, irrigation cable, or other cable with insulation acceptable for direct burial, below grade use, or wet locations.

PRODUCT MARKINGS AND RATINGS

Sealed wire-connector systems are marked with the following:

1. catalog number
2. wire range or wire combinations
3. voltage rating
4. operating temperature rating
5. the statement "For Use in Wet or Damp Locations"
6. special conductor types, if applicable

Sealed wire-connector systems are marked with the following:

1. all required wire-connector markings and assembly information (see ZMVV7)
2. complete assembly instructions for the sealed wire-connector system

Sealed wire-connector systems not provided with a wire connector in the same unit container include a statement that the sealed wire-connector system is intended to be used only with certified wire connectors and are marked with one or more of the following:

1. the catalog number of the specific wire connector intended to be used
2. the physical dimensions of a specific wire connector intended to be used, or
3. the minimum and maximum envelope dimensions of any wire connector intended to be used

Some sealed wire-connector systems may additionally be marked "Direct Burial," "Raintight," "Watertight" or "Submersible," as applicable.

All markings on located on:

1. all parts that comprise the system,
2. the packaging carton,
3. the unit container, or
4. the information sheet provided in each unit container.

RELATED PRODUCTS

See Wire Connectors and Soldering Lugs Certified for Canada (ZMVV7) for additional information on wire connectors used within a sealed wire-connector system.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 198.2 (2005), "Sealed Wire Connector Systems."

UL MARK

The Listing Mark of UL on the smallest unit container in which the product is packaged is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Sealed Wire Connector System."

* *

WIRED CABINETS CERTIFIED FOR CANADA (ZNXR7)

USE AND INSTALLATION

This category covers wired cabinets, such as illuminated and nonilluminated jewelry, display and showcases.

Wired cabinets may be permanently connected or cord-and-plug connected. Cord-and-plug-connected wired cabinets are limited to groups of not more than six sections coupled together by flexible cord and locking connectors, with one of the wired-cabinet sections connected by a flexible cord and plug cap rated 15 or 20 A to a permanently installed receptacle in the building structure.

Permanently wired cabinets may be provided with convenience outlets for connection of equipment, such as POS (point-of-sale) equipment. Cord-and-plug-connected wired cabinets may have receptacles installed for connection of factory-installed equipment, such as luminaires. These receptacles are not intended for powering additional equipment and are occupied by factory-installed equipment.

Wired cabinets may be divided into sections when of such size that shipment as one cabinet is impractical. Each major subassembly bears a "Wired Cabinet Section" Certification Mark. Each group of wired-cabinet sections are provided with installation instructions describing or illustrating the proper assembly and electrical connection of the sections when applicable.

These products are intended to be installed in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I."

RELATED PRODUCTS

Other commercial display cabinets are covered under Commercial Displays Certified for Canada (IYMX7).

Cabinets provided with or designed for use with refrigeration equipment are covered under Commercial Refrigerators and Freezers Certified for Canada (SGKW7).

Nonilluminated advertising displays are covered under Advertising Displays, Nonilluminated Certified for Canada (AAVU7).

Custom-built commercial products, such as ticket machines, electronic point-of-sale products, Internet communication stands and the like, are covered under Custom-built Kiosks Certified for Canada (EMHH7).

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standards used to investigate products in this category are CAN/CSA-C22.2 No. 0 (2010), "General Requirements – Canadian Electrical Code, Part II," and CSA-C22.2 No. 0.4 (2004), "Bonding of Electrical Equipment."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wired Cabinet" or "Wired Cabinet Section ____ of ____" (the first blank identifies the number of the section, and the second blank identifies the total number of sections that constitute the complete wired cabinet).

****

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

POSITIONING DEVICES CERTIFIED FOR CANADA (ZODZ7)

GENERAL

This category covers cable ties, cable-tie mounts, and similar types of related hardware for field installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I" (CEC).

The investigation of cable ties to CAN/CSA-C22.2 No. 62275 (2010), "Cable Management Systems – Cable Ties for Electrical Installations," generally includes flammability, installation, minimum and maximum operating temperature, minimum installation temperature, and mechanical property considerations. In addition, cable ties may also be investigated for smoke and heat generation, corrosion resistance, and weatherability characteristics as appropriate for the product.

The investigation of fixing devices (cable-tie mounts) to CAN/CSA-C22.2 No. 62275 (2010) generally includes flammability, minimum and maximum operating temperature, and mechanical property considerations. In addition, fixing devices may also be investigated for smoke and heat generation, corrosion resistance, and weatherability characteristics as appropriate for the product.

The investigation of devices to CSA-C22.2 No. 18.5 (2002), "Positioning Devices," generally includes flammability, maximum operating temperature, and mechanical property considerations. In addition, such devices may also be investigated for smoke and heat generation, corrosion resistance, and weatherability characteristics as appropriate for the product.

RATINGS

Type Designations for Products Investigated to CAN/CSA-C22.2 No. 62275 (2010)

Type 2 — A Type 2 product retains 100% of its declared loop tensile strength (cable ties) or declared mechanical strength (fixing devices) after test conditions. The declared maximum operating temperature for products designated and marked as "Type 2" is based solely on performance criteria in CAN/CSA-C22.2 No. 62275 (2010). The polymeric material comprising the product has not been separately investigated for long-term thermal properties according to CAN/CSA-C22.2 No. 0.17 (2000), "Evaluation of Properties of Polymeric Materials."

Type 21 — A Type 21 product retains 100% of its declared loop tensile strength (cable ties) or declared mechanical strength (fixing devices) after test conditions. The declared maximum operating temperature for products designated and marked as "Type 21" is limited to the Relative Thermal Index – Strength (RTI – Strength) at 1.5 mm (0.06 in.) thickness for the polymeric material that comprises the product. The RTI – Strength for the material is determined by separate investigation for long-term thermal properties according to CSA-C22.2 No. 0.17 (2000), and the declared maximum operating temperature of the product is based on the performance criteria in CAN/CSA-C22.2 No. 62275 (2010).

Type 2S and Type 21S — Type 2S and Type 21S products meet the same requirements as Type 2 and Type 21 products, respectively, but have been additionally investigated for use as primary support for a flexible conduit, flexible tubing, or cable in accordance with the CEC. Such products may also be marked "Support" in lieu of the "S" designation.

Products Investigated to CSA-C22.2 No. 18.5 (2002)

Load Rating — When a load rating is declared, the device retains the declared mechanical strength following test conditions.

Temperature Rating — The temperature rating of the device is limited to the RTI – Strength at 1.5 mm (0.06 in.) thickness for the polymeric material that comprises the product. The RTI – Strength for the material is determined by separate investigation for long-term thermal properties according to CAN/CSA-C22.2 No. 0.17 (2000), and the declared maximum operating temperature of the product is based on the performance criteria in CSA-C22.2 No. 18.5 (2002).

Limited Support — Products marked "Limited Support" are able to provide support for nonflexible conduit or tubing up to the maximum load rating marked on the device. The devices are not intended to provide primary support for nonflexible conduit or tubing at the maximum spacing intervals specified in the CEC.

MARKINGS

For cable ties investigated to CAN/CSA-C22.2 No. 62275 (2010), the product, the smallest unit container in which the product is packaged, or the installation instructions provided with the product are marked with the manufacturer's identifier (company name or registered trademark), catalog or model number, the product's maximum and minimum operating temperature, minimum installation temperature if below 0°C, minimum and maximum bundle diameter, loop tensile strength, and type designation in accordance with CAN/CSA-C22.2 No. 62275 (2010).

For separately supplied fixing devices investigated to CAN/CSA-C22.2 No. 62275 (2010), the product, the smallest unit container in which the product is packaged, or the installation instructions provided with the product are marked with the manufacturer's identifier (company name or registered trademark), catalog or model number, the product's maximum and minimum operating temperature, declared mechanical strength, and type designation in accordance with CAN/CSA-C22.2 No. 62275 (2010).

Fixing devices or cable ties having integral fixing devices investigated to CAN/CSA-C22.2 No. 62275 (2010) that are dependent on specific maximum and minimum mounting-hole size, panel thickness, mounting orientation, or other variables critical to proper installation include this information in their marking on the product, smallest unit container in which the product is packaged, or installation instructions provided with the product.

For devices investigated to CSA-C22.2 No. 18.5 (2002), the product or the smallest unit container in which the product is packaged is marked with the product's maximum load and thermal ratings, together with the manufacturer's identifier (company name or registered trademark) and catalog or model number.

Products covered under this category have not been investigated for outdoor use unless marked "Resistant to Ultraviolet Light," "For Use Outdoors," "For Use Outdoors or Indoors," or similar wording, in which case they have been found acceptable for both indoor and outdoor use.

All metallic products are suitable for use in air-handling areas and may be marked "Suitable for use in air handling spaces in accordance with Rules 12-010 (3), (4), and (5), and 12-020 of the Canadian Electrical Code," "AH-1," or equivalent wording, as appropriate.

All nonmetallic and composite products that have been investigated to determine their suitability for use in air-handling areas may be marked "Suitable for use in air handling spaces in accordance with Rules 12-010 (3), (4), and (5), and 12-020 of the Canadian Electrical Code," "AH-2," or equivalent wording, as appropriate.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 18.5 (2002), "Positioning Devices," or CAN/CSA-C22.2 No. 62275 (2010), "Cable Management Systems – Cable Ties for Electrical Installations."

UL MARK

The Listing Mark of UL on the product, or on the smallest unit container in which the product is packaged with or without the UL symbol on the product, is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Positioning Device" or "Cable Tie," or other appropriate product name as shown in the individual Listings.

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

WIRE-PULLING COMPOUNDS CERTIFIED FOR CANADA (ZOKZ7)

USE

This category covers wire-pulling compounds intended for use as lubricants in installing electrical conductors in raceways. These compounds have been investigated to determine their compatibility with specific types of wire and cable jacket or other exterior coverings.

Other compound properties including friction reduction, toxicity and combustibility have not been investigated.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 249, "Standard Tests for Determining Compatibility of Cable-Pulling Lubricants With Wire and Cable."

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wire-pulling Compound."

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UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

WIREWAY, AUXILIARY GUTTERS AND ASSOCIATED FITTINGS CERTIFIED FOR CANADA (ZOYX7)

USE

This category covers wireway, auxiliary gutters and fittings for installation in accordance with CAN/CSA-C22.1, "Canadian Electrical Code, Part I." Products installed in accordance with product markings and manufacturer's instructions are suitable for use as equipment grounding conductors.

ADDITIONAL INFORMATION

For additional information, see Electrical Equipment for Use in Ordinary Locations Certified for Canada (AALZ7).

REQUIREMENTS

The basic standard used to investigate products in this category is CSA-C22.2 No. 26, "Construction and Test of Wireways, Auxiliary Gutters and Associated Fittings."

WIREWAY, AUXILIARY GUTTERS AND ASSOCIATED FITTINGS CERTIFIED FOR CANADA (ZOYX7)

UL MARK

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL Mark for Canada symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Wireway or Auxiliary Gutter" or "Wireway or Auxiliary Gutter Fitting."

* *

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

ULC DIRECTORIES AND STANDARDS

DIRECTORIES PUBLISHED BY UNDERWRITERS LABORATORIES OF CANADA

You can order or view on-line the following ULC directories.

Building Materials

Burglar and Fire Alarm Systems and Components

Fire Protection Equipment

Fire Resistance

Firestop Systems and Components

Heating and Ventilating Equipment and Flammable Liquids and Gases Equipment

The label or listing mark on a product is evidence that such a device or material has been produced under the Listing Program of Underwriters Laboratories of Canada. Such marking does not mean that products of the same classification are necessarily equivalent in quality or merit.

Listing Directories can be ordered in softcover (single and in sets) as well. These can be ordered by going to http://www.ulc.ca, click on "ULC Standards" then click on "Sales of ULC Standards Materials" then click on "ULC Online Store" and select "Listing Directories."' ULC standards and ORDs can also be ordered from the same site or by calling 1-866-937-3852 ext. 61744, fax to 613-231-5977 or by e-mail at publications@ulc.ca (in subject line enter: Standards Order Request). ULC also has a number of resellers of its standards and ORDS. Email the publication department or check on our website for a current list.

ADVISORY COUNCILS

Issues relating to ULC Standards and Other Recognized Documents having a bearing on listings covered in this directory are brought to the Advisory Council of Underwriters Laboratories of Canada for information, input and comment.In addition to the above, Underwriters Laboratories of Canada liases as appropriate with various federal, provincial, territorial and munIcipal regulatory authorities.

The foregoing advisory bodies are also consulted by the staff of Underwriters Laboratories of Canada in connection with the development or revision of ULC Standards and Other Recognized Documents and with respect to special problems that may arise in connection with the Laboratories' engineering and listing services.

STANDARDS AND OTHER RECOGNIZED DOCUMENTS OF UNDERWRITERS LABORATORIES OF CANADA

ULC Standards develops and publishes standards and specifications for products having a bearing on fire, safety and security, crime prevention, thermal insulation and systems, air barriers, live working and other areas. ULC Standards is accredited by the Standards Council of Canada as a Standards Development Organization under the National Standards System of Canada.

If you are interested in taking part in Standards Development please contact the Manager of Standards, ULC Standards. If you are interested in having a standard developed please contact the Director of Standards, ULC Standards. ULC Standards has 17 Standards development committees covering the following areas

Committee on Fire Tests –ULC- S100A

Committee on Security and Burglar Alarm Equipment and Systems – ULC-S300A

Committee on Physical Security Equipment – ULC-S300B

Committee on Automobile Theft Deterrent Equipment and Systems – ULC-S300V

Committee on Live Working – ULC – S400A

Committee on Solid State & LED Lighting – ULC – S400B

Committee on Portable Fire Extinguishers – ULC-S500A

Committee on Fire Fighting Apparatus and Equipment – ULC-S500B

Committee on Fire Alarm and Life Safety Equipment and Systems – ULC-S500F

Committee on Fire Fighting Foams – ULC-S500G

Committee on Stationary Steel Storage Containers for Flammable and Combustible Liquids – ULC-S600A

Committee on Stationary Non-Metallic Storage Containers for Flammable and Combustible Liquids – ULC-S600B

Committee on Factory-Built Fireplaces, Chimneys and Vents – ULC-S600E

Committee on Fittings for Flammable and Combustible Liquids – ULC-S600H

Committee on Kitchen Exhaust Equipment and Systems - ULC-S600K

Committee on Oil-Water Separators – ULC-S600L

Committee on Thermal Insulation Materials and Systems – ULC-S700A

Committee on Air Barrier Materials and Systems – ULC-S700B

Committee on Electric Utility Workplace Electrical Safety – ULC - S800A

The Engineering Department of Underwriters Laboratories of Canada also develops and publishes Other Recognized Documents (ORDs) to deal with certification of products where standards do not yet exist or do not deal with the product.

A list of Standards and ORDs currently available may be obtained through our web site at http:www.ul-c.ca. In addition, the current standards work program of ULC Standards Department can be found on the same web site by selecting ''ULC Standards'' as well as being linked through the web site of the Standards Council of Canada at http:/ /www.scc.ca. This work program is updated online on a regular basis

Where applicable, conformance of a product with pertinent requirements found in Canadian Codes and Standards and regulations published by other agencies is required before listing is established. For further details concerning the significance of the listing, reference should be made to the explanatory texts preceding each of the various classifications of products covered herein.

For judging acceptability of devices incorporating electrical features, reference is made to applicable requirements contained in the Canadian Electrical Code, Parts I and II, and compliance therewith is a prerequisite to listing.

Other UL Services

In addition to its Listing, Classification and Component Recognition Services, UL can provide manufacturers with a variety of related assessment, inspection and facility registration services.

Specialized Services

UL has specialized services and staff to assist customers and others with various product certification and information needs.

Local Engineering Services

UL's Local Engineering Services (LES) offices give customers access to UL engineers in their own local areas. In key centers around the U.S., UL operates LES offices that offer fast and convenient service. Customers can use these offices as quick sources of information or to receive on-site product investigations, Field Engineering Services or other engineering evaluations locally. The locations and addresses of these LES offices are listed at the back of the White Book.

Fact-Finding Investigations

In the interest of public safety, UL conducts Fact-Finding Investigations on an individual contract basis for manufacturers, trade associations, government agencies and others. Fact-Finding Investigations provide information or data that the sponsor can use, in seeking support for a proposed amendment to a nationally recognized installation code. These investigations result in a Fact-Finding Report. Contact a Customer Service Professional for referral to the appropriate engineering staff.

Research Services

UL also serves the interests of the public by conducting research investigations -- both for its own use and use by others -- on products or materials to help identify safety concerns and to assist in the development of appropriate safety requirements. This research is particularly useful when new technologies emerge or new safety concerns are explored. UL's research expertise and facilities are available to manufacturers, trade associations, government and other groups. Contact a Customer Service Professional for referral to the appropriate engineering staff.

Verification Services — Commercial Inspection, Testing and Auditing

UL Verification Services offers expertise in commercial testing, inspection and auditing that is recognized and respected around the world. Currently, UL Verification Services provides support to the appliance, high-tech, lighting, and retail industries through our global footprint, technical expertise, commitment to quality and unmatched customer service. Our full range of technical services support manufacturing business operations from initial design through prototyping and into final production and enhance retail or go-to-market supply chain quality management operations. For more information, call Customer Service at 1-877-UL-HELPS (1-877-854-3577) or e-mail cits@ul.com.

UL Information Services

UL's Technical Information Services

Manufacturers, AHJs and other groups look to UL as a uniquely broad and accessible source of technical information in areas such as product testing and certification, domestic and international standards, international compliance requirements, and quality system registration. UL provides a variety of technical information services.

Online Certifications Directory

UL's Online Certifications Directory of UL certified products can be accessed at www.ul.com/database.

The White Book and CDs

The UL White Book/CD and the Canadian White Book CD are published annually. Order these by visiting https://applications.tweddle.com/ulecommerce/Products.aspx.

Following are the distribution months.

Title	Month Distributed
Guide Information for Electrical Equipment - The White Book - Print and CD	April
Guide Information for Canadian Certified Equipment - The Canadian White Book - CD	September

UL's Website

Visit www.ul.com for information on UL's products and services. Topics include:

- UL Marks
- UL product testing and certification, facility registration, and related services
- Seminars
- Technical information resources, such as Standards (including access to the Standards Electronic Bulletin Board System) and UL's Online Certifications Directory
- UL news and activities, including the latest news releases
- Information for AHJs, consumers and retailers

Regulatory Services Staff

To contact UL Regulatory Services staff members, call 800-595-9844 or e-mail ulregulatoryservices@ul.com or visit www.ul.com/codeauthorities. For more detailed contact information including contact names, phone, fax and e-mail addresses, visit the code authorities website at www.ul.com/codeauthorities.

INDEX OF ULC PRODUCT CATEGORIES AND INDUSTRY TERMS

This index includes all product categories sorted alphabetically. In addition, those product categories that are a sub-set of a main product category are indented under the main category to illustrate the grouping of a family of related categories. This index also includes specific product types covered within a product category and these product names are followed by the applicable product category title in parentheses.

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INDEX OF CUL PRODUCT CATEGORIES AND INDUSTRY TERMS

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Quick Guide to
ULC's Online Certification Directories

Guide de consultation rapide
des répertoires de certifications ULC en ligne

Welcome to the ULC Online Certification Directories, a faster way to access ULC Listings and Classifications. You can use the ULC Online Certification Directories to:

Verify a ULC Listing or Classification
Verify a ULC Listed product use
Verify a product safety standard

Bienvenue aux répertoires de certifications ULC en ligne, une manière plus rapide d'avoir accès aux inscriptions et aux classifications ULC. Vous pouvez utiliser les répertoires de certifications ULC en ligne pour :

vérifier une inscription ou une classification ULC;
vérifier l'utilisation d'un produit inscrit ULC;
vérifier la norme de sécurité d'un produit.

Search The ULC Online Certification Directories Using:

- **Company name/location**
- **ULC File Number**
- **ULC Category Code/Guide Information**
- **Standard or ORD Number**
- **ULC Guide Number (used up to 2003)**
- **Fire Resistance Assemblies and Systems**
- **Keyword**

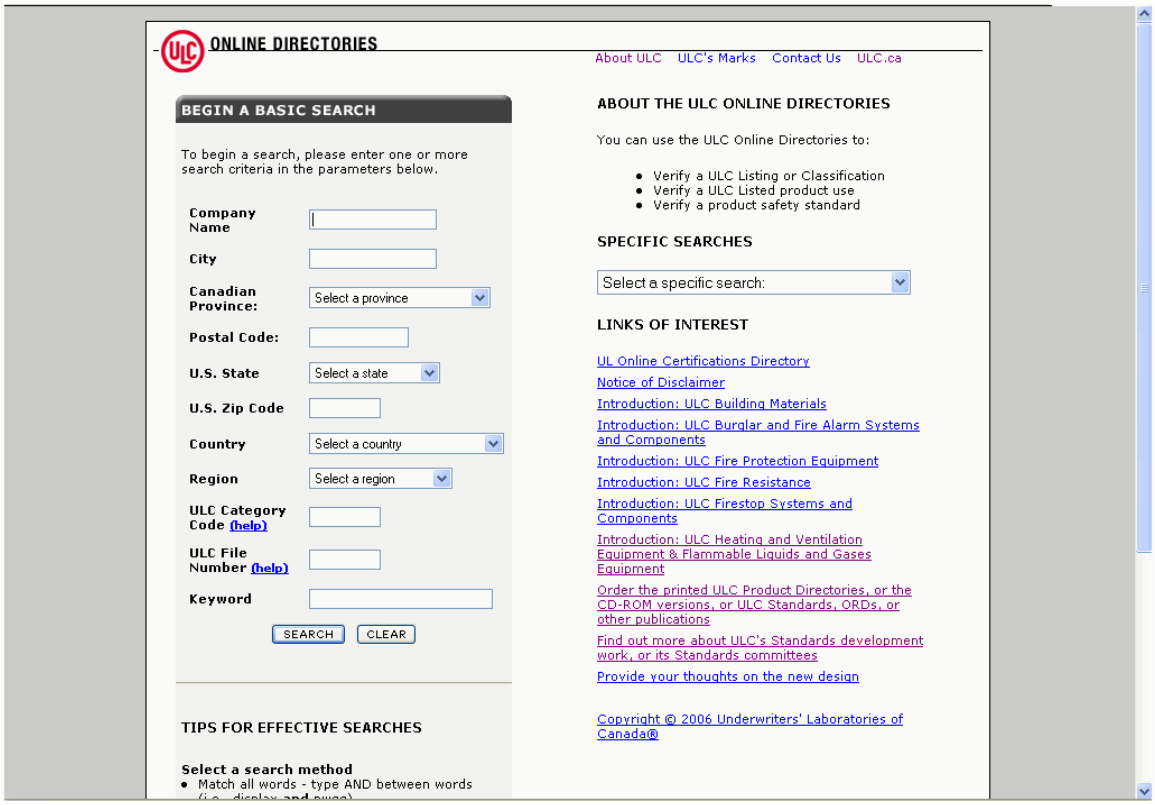
Effectuez une recherche dans les répertoires de certifications ULC en ligne en utilisant :

- le nom de l'entreprise ou l'emplacement;
- le numéro de dossier ULC;
- le numéro de code de catégorie ULC ou le Guide information;
- le numéro de norme ou ORD;
- le numéro du guide ULC (utilisé jusqu'en 2003);
- les systèmes et assemblages résistant au feu;
- un mot clé.

To begin, log on to:
Pour commencer, ouvrez une session à l'adresse suivante :

www.ULC.ca

Now Click on "ULC Online Directories" which appears in the column on the left hand side of the page. You will go to the primary search engine:
Cliquez maintenant sur « ULC Online Directories » (répertoires ULC en ligne) qui apparaît dans la colonne gauche de la page. Cela vous amènera au premier moteur de recherche :



BOOKMARK THIS PAGE
MARQUEZ CETTE PAGE D'UN SIGNET

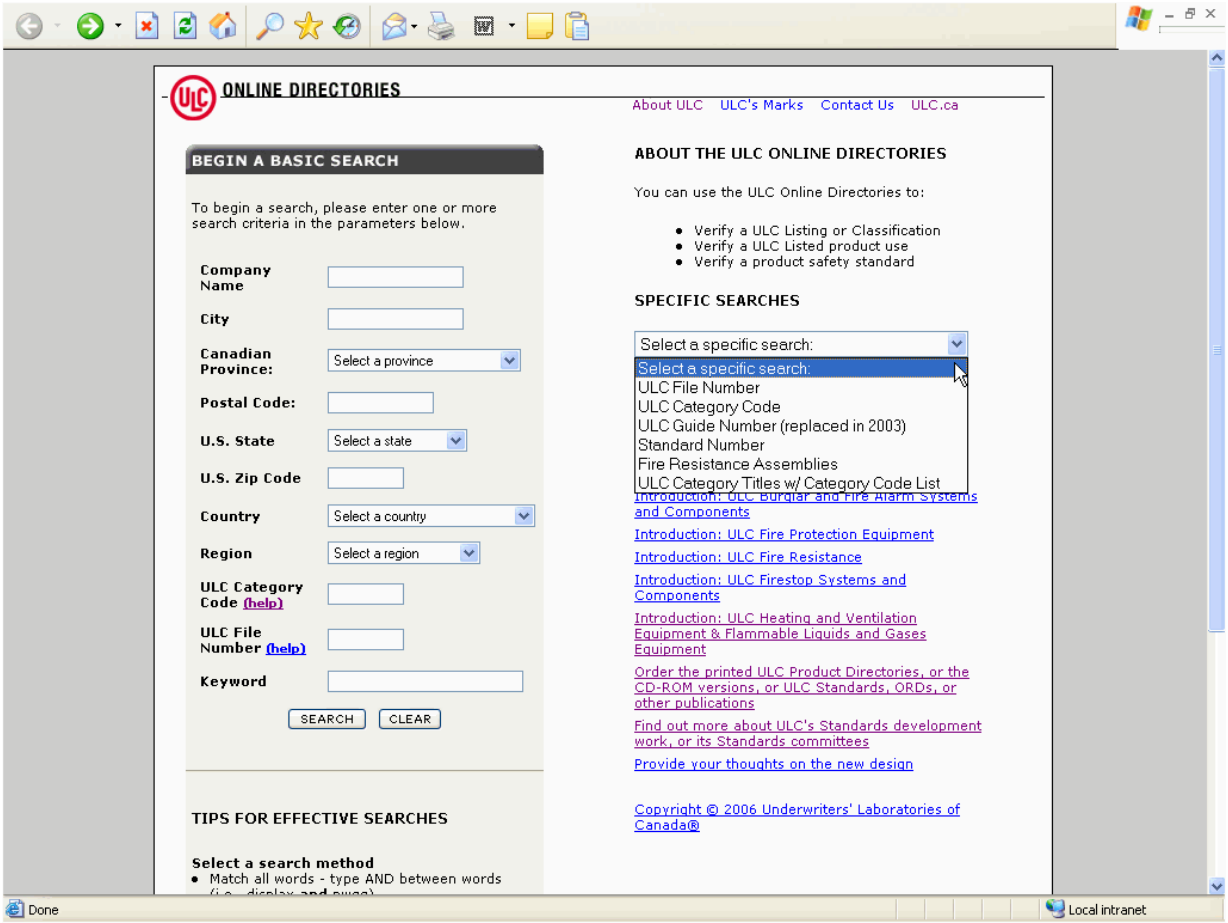
From here you can enter anyone of several choices, by company name, by ULC Category Code, by ULC File Number or by a keyword search. Just enter the information and click on "Search".
À partir de là, vous pouvez entrer n'importe quel choix parmi plusieurs, nom d'entreprise, code de catégorie ULC, numéro de fichier ULC ou effectuer une recherche par mot clé. Vous n'avez qu'à entrer l'information et à cliquer sur « Search » (recherche).

On the primary search page, there is a pull-down "Specific Searches", on the right of the page that allows additional specific searching by, among other things:

- **Standard Number**
- **Fire Resistance Assemblies**
- **ULC Category Titles with Category Code Lists (this is the Guide Information)**

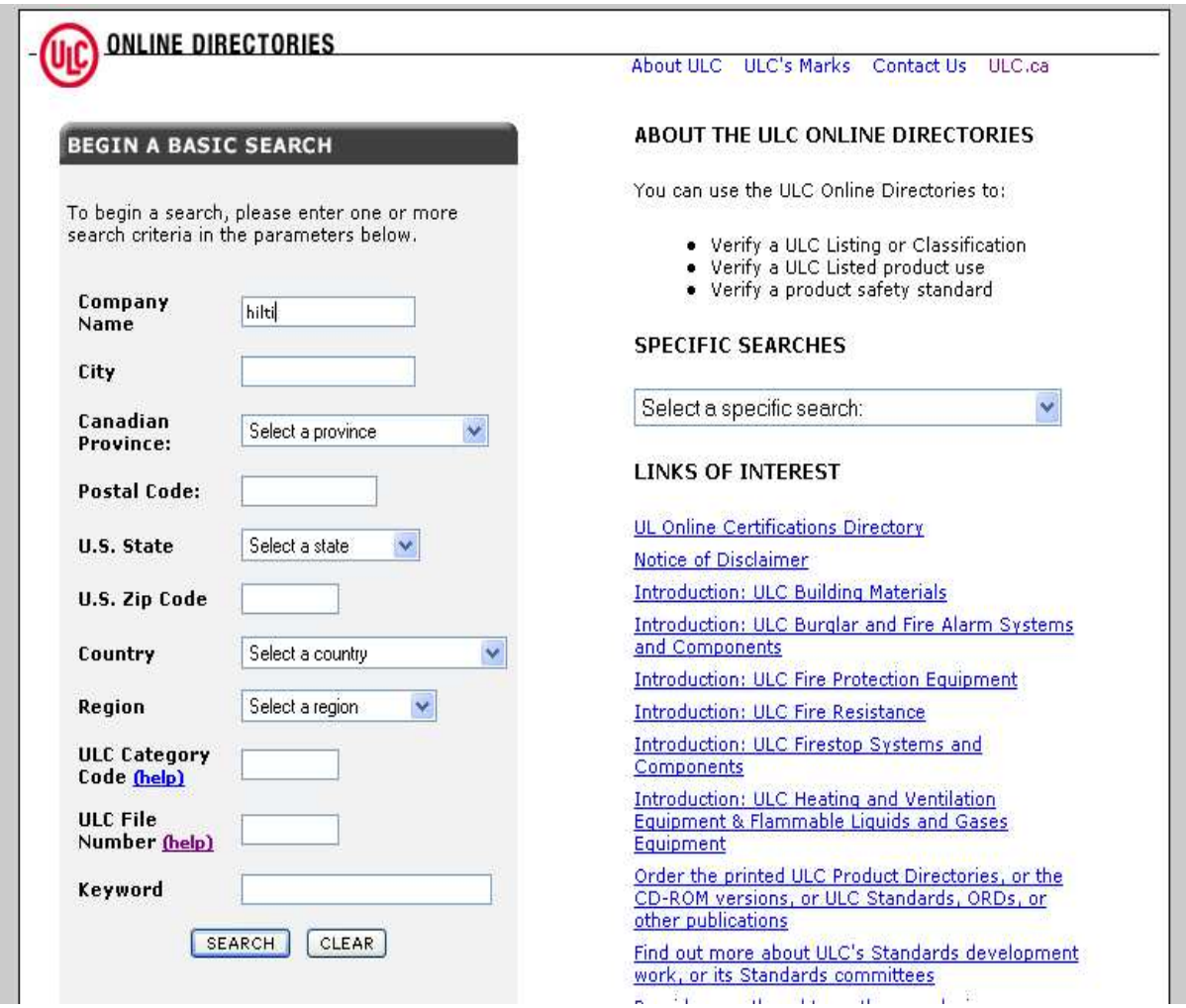
Sur la page de recherche principale, une liste déroulante « Specific searches » (recherches spécifiques), à droite de la page, permet des recherches additionnelles spécifiques, en utilisant entre autres :

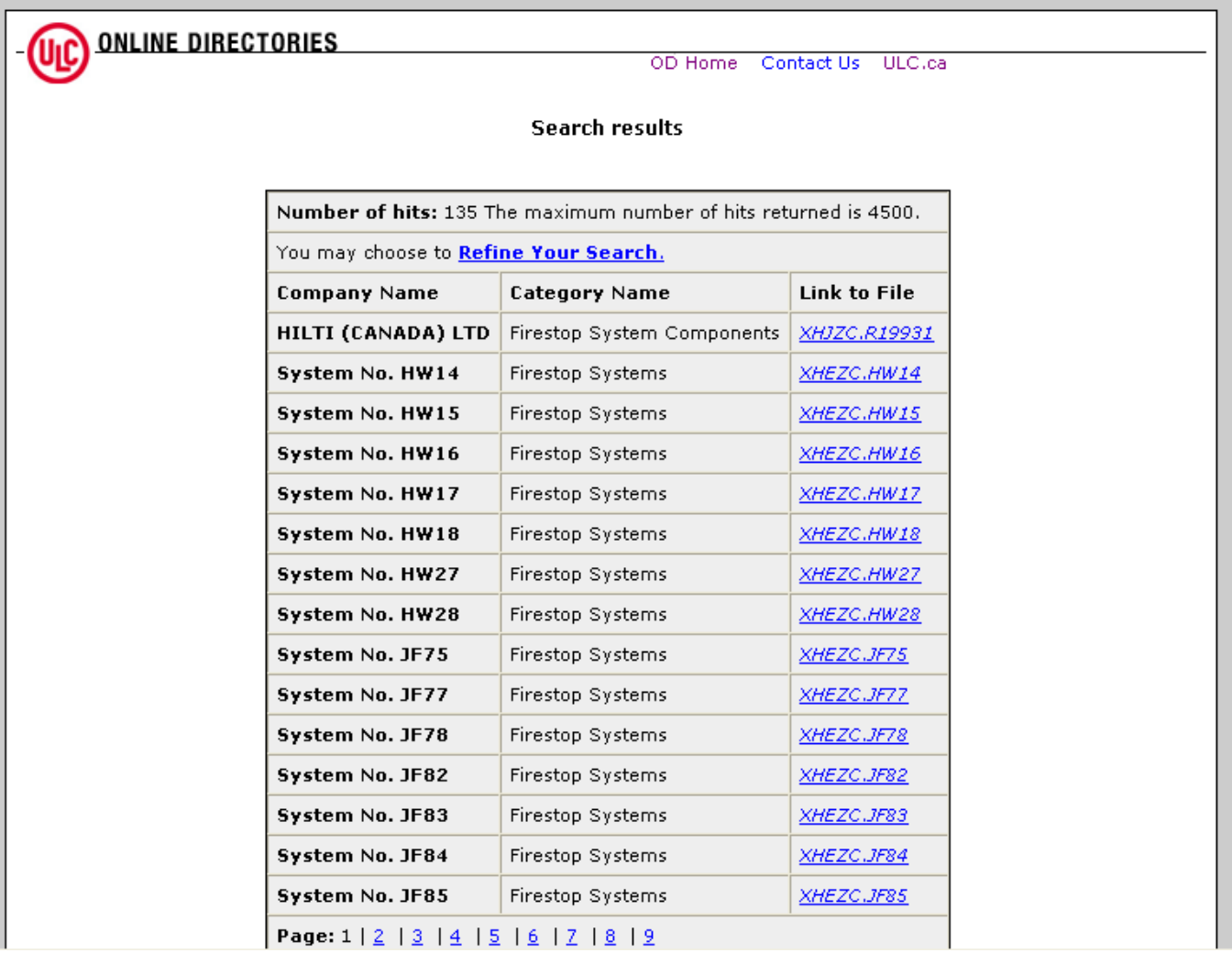
- le numéro de la norme;
- les assemblages résistant au feu;
- les titres de catégorie ULC avec les listes de code de catégorie (c'est le Guide information).



1. SEARCH BY "COMPANY NAME"
1. RECHERCHE PAR « COMPANY NAME » (nom d'entreprise)

To begin this search, enter the "Company Name" and other available information in the fields provided, then click "Search".
Avant d'entreprendre cette recherche, entrez le « Company Name » (nom d'entreprise) et les autres renseignements disponibles dans les champs fournis à cet effet, puis cliquez sur « Search » (recherche).





ONLINE DIRECTORIES

OD Home Contact Us ULC.ca

Search results

Number of hits: 135 The maximum number of hits returned is 4500.

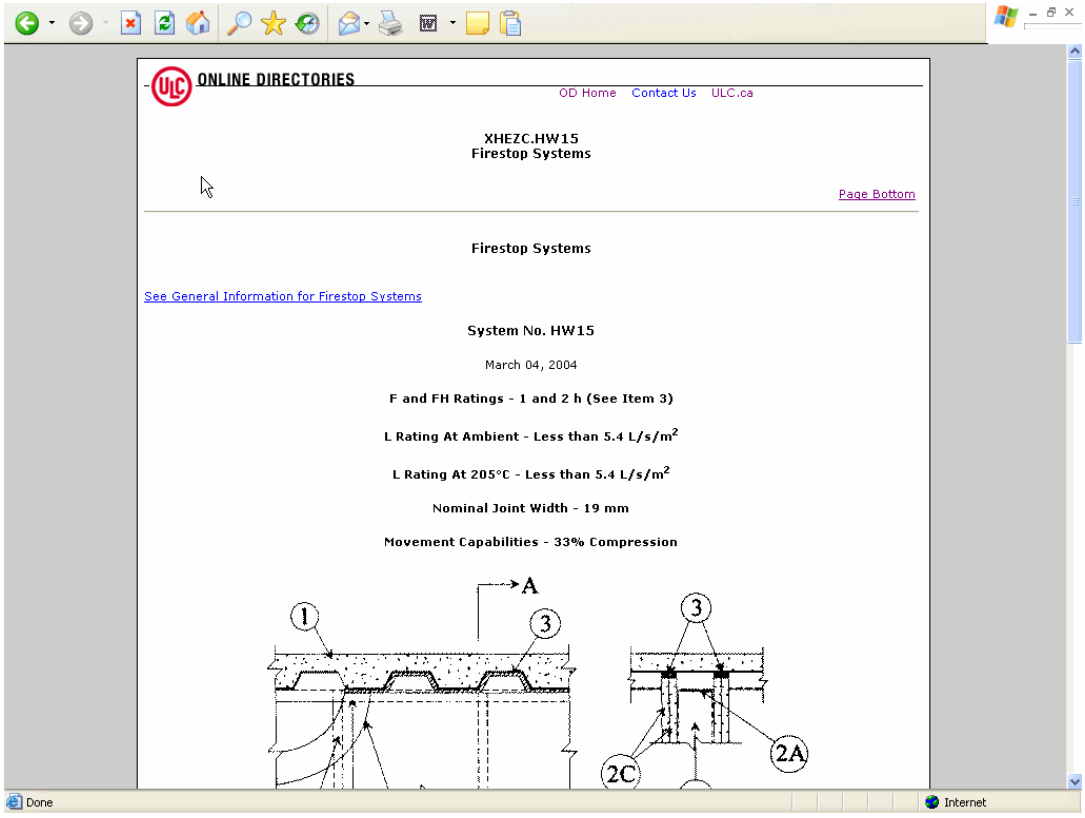
You may choose to **Refine Your Search.**

Company Name	Category Name	Link to File
HILTI (CANADA) LTD	Firestop System Components	XHJZC.R19931
System No. HW14	Firestop Systems	XHEZC.HW14
System No. HW15	Firestop Systems	XHEZC.HW15
System No. HW16	Firestop Systems	XHEZC.HW16
System No. HW17	Firestop Systems	XHEZC.HW17
System No. HW18	Firestop Systems	XHEZC.HW18
System No. HW27	Firestop Systems	XHEZC.HW27
System No. HW28	Firestop Systems	XHEZC.HW28
System No. JF75	Firestop Systems	XHEZC.JF75
System No. JF77	Firestop Systems	XHEZC.JF77
System No. JF78	Firestop Systems	XHEZC.JF78
System No. JF82	Firestop Systems	XHEZC.JF82
System No. JF83	Firestop Systems	XHEZC.JF83
System No. JF84	Firestop Systems	XHEZC.JF84
System No. JF85	Firestop Systems	XHEZC.JF85

Page: 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

Search results often yield multiple hits, which are listed in alphabetical order. To reduce the number of hits, you can choose "Refine Your Search", located towards the top of the table.
Les résultats de la recherche donnent souvent lieu à de multiples appels de fichiers énumérés par ordre alphabétique. Pour réduire le nombre d'appels de fichiers, vous pouvez choisir « Refine Your Search » (affiner votre recherche), près de la partie supérieure du tableau.

Once you have determined the listing you want to see, click in the appropriate link in the "Link to File" column (at the right side) and you get…
Une fois que vous avez défini l'inscription que vous désirez voir, cliquez sur le lien approprié dans la colonne « Link to File » (Lier au fichier) (du côté droit) et vous aurez...



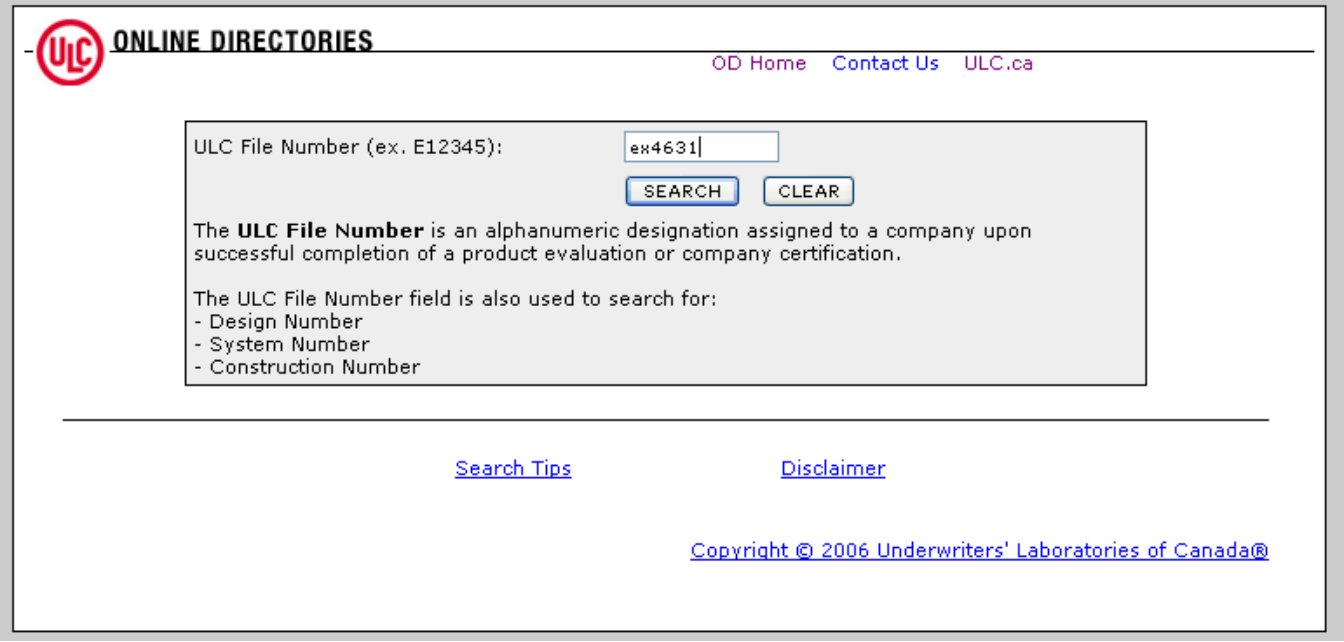
This shows the listing information. To see a description/specifications for the category (in this example it is "XHEZC"), click on "See Guide Information for …." towards the upper left side of the page. The ULC Guide outlines the scope and limitations of a product category, the standard used to carry out the evaluation, and the applicable marking requirements by which the product can be identified in the field.

Cet écran montre l'information relative à l'inscription. Pour voir une description ou les spécifications de la catégorie (dans cet exemple, c'est « XHEZC »), cliquez sur « See Guide Information for …. » (voir le Guide information pour..) près de la partie supérieure gauche de la page. Le Guide ULC précise la portée et les limites d'une catégorie de produit, la norme utilisée pour effectuer l'évaluation, et les exigences applicables relatives à la marque par lesquelles le produit peut être identifié sur place.

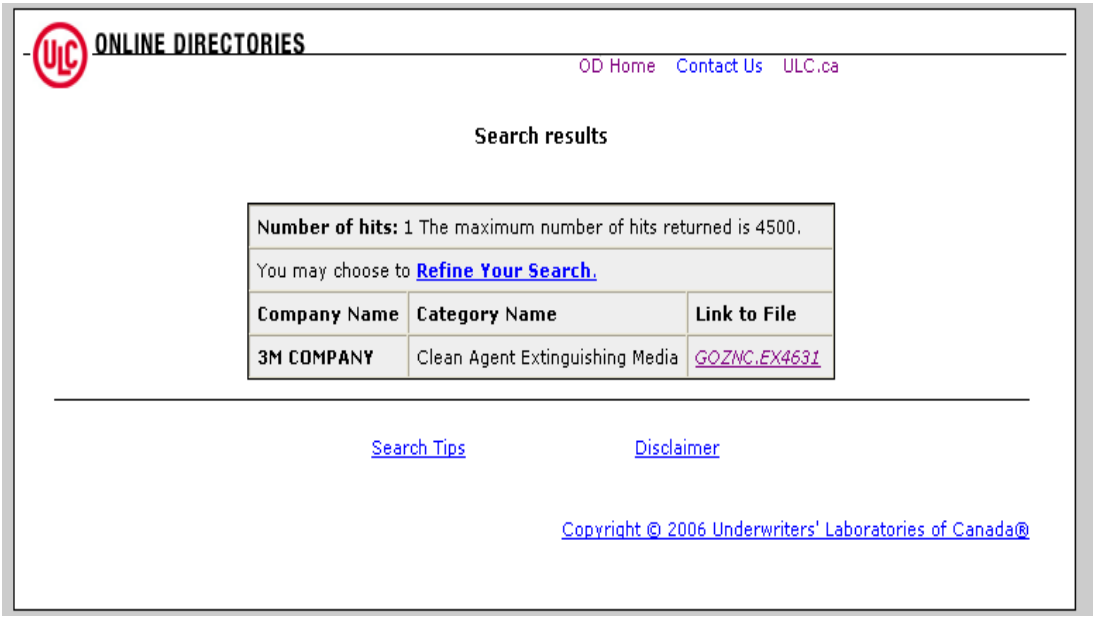
2. **SEARCH BY FILE NUMBER**
2. RECHERCHE PAR NUMÉRO DE FICHIER

A file number is an alphanumeric designation assigned by ULC and associated with a specified company and product category.
Un numéro de fichier est une désignation alphanumérique assignée par ULC et liée à une entreprise et à une catégorie de produit spécifiques.

To search by "File Number", enter the file number in the appropriate box (note there is a 'Help' box for this field) or select ULC File number under "Specific Searches" and then enter the file number in the search box.
Pour effectuer une recherche par « File number » (numéro de fichier), entrez le numéro de fichier dans la case appropriée (prenez note qu'il y a une case « Help » [aide] dans ce champ) ou sélectionnez un numéro de fichier ULC sous « Specific Searches » (recherches spécifiques), puis entrez le numéro de fichier dans la case de recherche.



This will take you to a specific file …
Cette option vous mènera à un fichier spécifique...



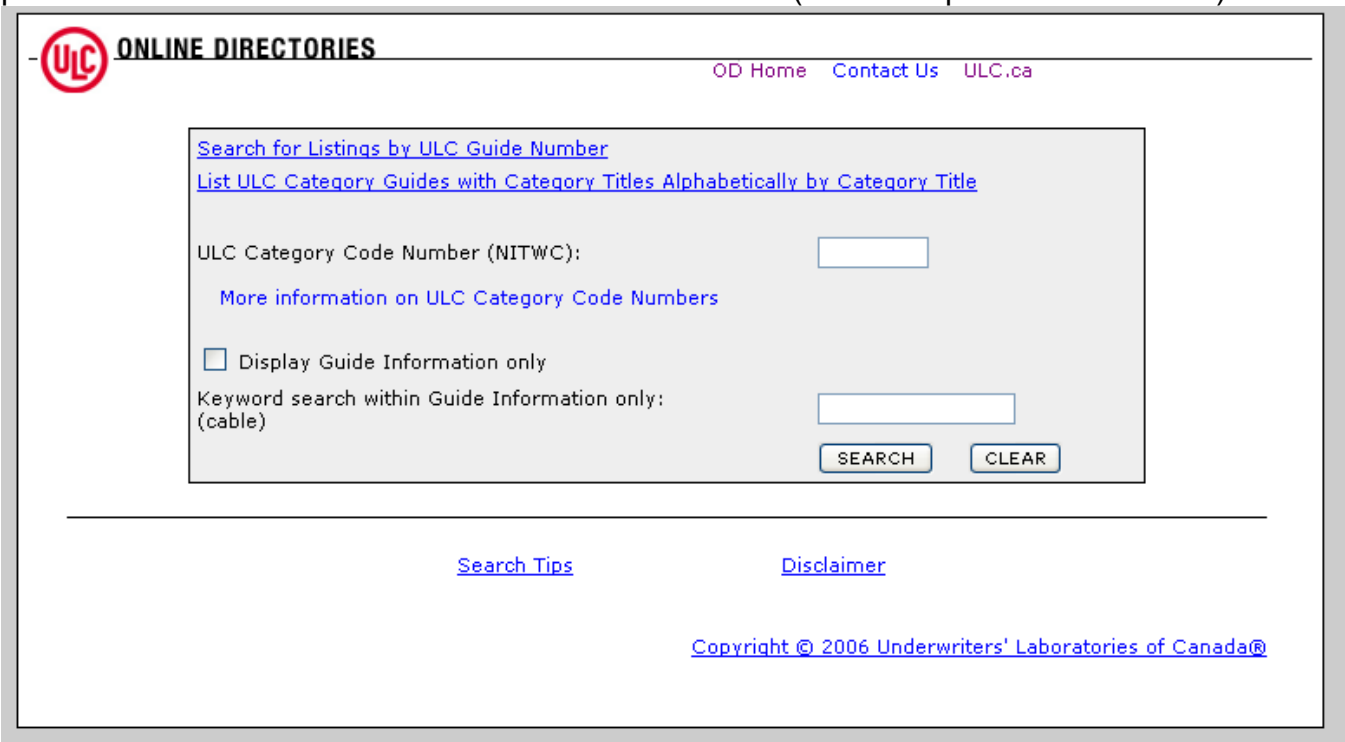
As with the previous example, click on the 'Link To File" to get the listing information.
Comme dans l'exemple précédent, cliquez sur « Link to File » (lier au fichier) pour obtenir l'information relative à l'inscription.

3. SEARCH BY CATEGORY CODE / GUIDE INFORMATION
3. RECHERCHE PAR CODE DE CATÉGORIE OU GUIDE INFORMATION

A Category Code is an alphabetic or alphanumeric code used to identify product categories covered by ULC's Listing, Classification, & Recognition Services. (For example: XHJZC, BXUVC, etc.)
Un code de catégorie est un code alphabétique ou alphanumérique utilisé pour identifier les catégories de produits couvertes par les services d'inscription, de classification et de reconnaissance ULC. (Par exemple : XHJZC, BXUVC, etc.)

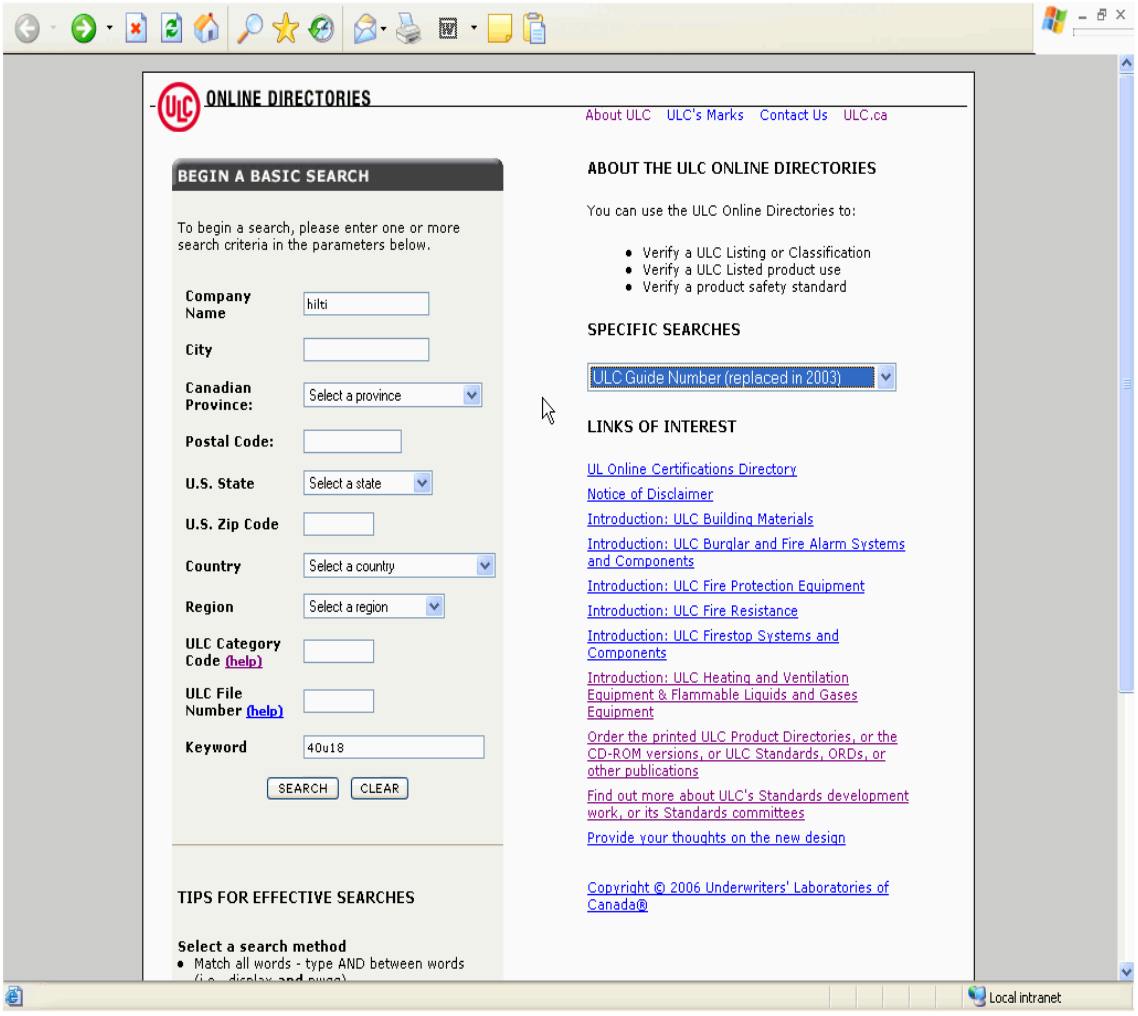
The Guide Information for each product category provides important information regarding the scope and limitations of ULC Certifications and a general description of the ULC marking authorized for products in that category.
Le Guide information pour chaque catégorie de produit fournit d'importantes informations relatives à la portée et aux limites des certifications ULC et une description générale de la marque ULC autorisée pour les produits de cette catégorie.

To search for a specific Category Code, enter the Category Code in the 'ULC Category Code' field in the main 'Search' page. (Hint: You can also use the pull-down menu 'Specific Searches' on the right of the page. Using the 'ULC Category Code' on this pull-down menu has the advantage of providing a link to a 'List ULC Category Guides with Category Titles Alphabetically by Category Titles'. It also lets you display the 'Guide Information' only. See Slide below.)
Pour effectuer une recherche d'un code de catégorie spécifique, entrez le code de catégorie dans le champ « ULC Category Code » (code de catégorie ULC) de la page de recherche principale. (Conseil : Vous pouvez aussi utiliser le menu déroulant « Specific Searches » (recherches spécifiques) du côté droit de la page. L'utilisation du « ULC Category Code » (code de catégorie ULC) sur ce menu déroulant a l'avantage de fournir un lien à « List ULC Category Guides with Category Titles Alphabetically by Category Titles » (établir la liste des guides de catégorie ULC avec les titres de catégorie énumérés alphabétiquement). Cela vous permet aussi d'afficher le Guide information seulement. (Voir la diapositive ci-dessous)

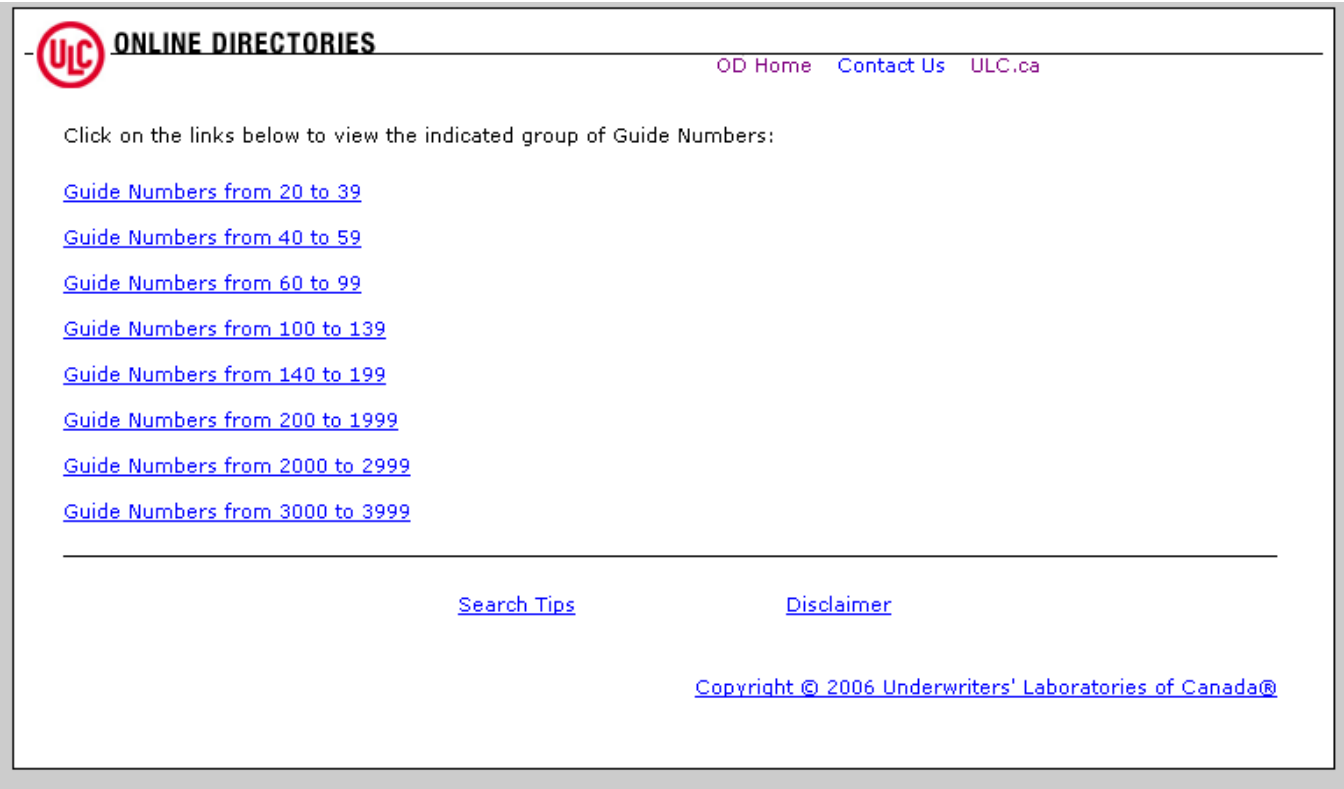


4. SEARCH BY ULC GUIDE NUMBER
4. RECHERCHE PAR LE NUMÉRO DU GUIDE ULC

Up until 2003 ULC did not use Category Code but used what were called Guide Numbers. To ensure that those familiar with the ULC Guide Number can still find the information they need and identify the replacement Category Code, you can search for the Guide Number table and then select the corresponding Category Code.
Jusqu'en 2003, ULC n'utilisait pas le code de catégorie mais plutôt ce qui était appelé les numéros du Guide. Pour ceux qui connaissent bien les numéros du Guide ULC, ils peuvent encore trouver l'information dont ils ont besoin et identifier le code de catégorie de remplacement, en recherchant le tableau des numéros du Guide et en sélectionnant ensuite le code de catégorie correspondant.

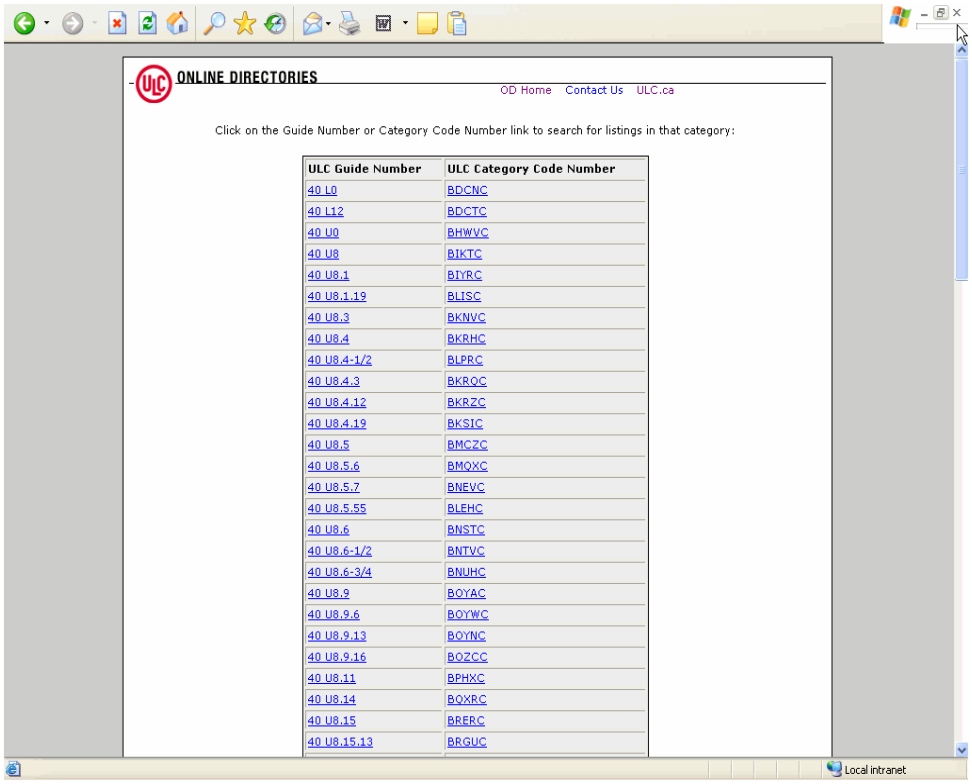


Under specific search choose "ULC Guide Number. The following window will pop up.
Sous « Specific Search » (recherche spécifique), choisissez « ULC Guide Number » (numéro du Guide ULC). La fenêtre suivante s'ouvrira.



Find the ULC Guide Number range you want and click on it. The next window will show all the ULC Guide Numbers in the selected range and for each of them the corresponding Category Code Number.
Trouvez la plage de numéros du Guide ULC voulue et cliquez dessus. La fenêtre suivante affichera tous les numéros du Guide ULC de la plage sélectionnée ainsi que, pour chacun d'eux, le numéro de code de catégorie correspondant.

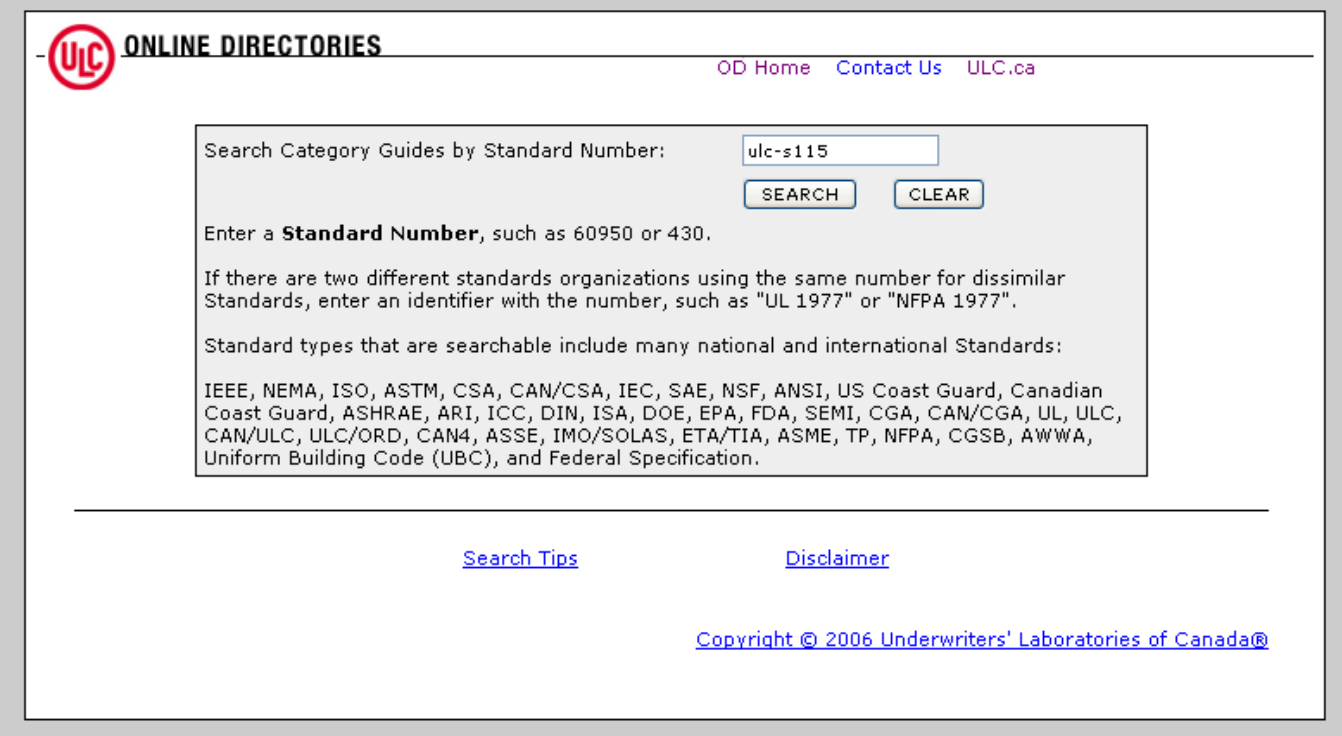
Note: Category Code Numbers assigned after 2003 will not have a corresponding ULC Guide Number.
Remarque : Les numéros de code de catégorie assignés après 2003 n'auront pas de numéro du Guide ULC correspondant.



Select the ULC Category Code Number you want and click on it.
Sélectionnez le numéro de code de catégorie ULC que vous désirez et cliquez dessus.

5. SEARCH BY STANDARD NUMBER
5. RECHERCHE PAR LE NUMÉRO DE NORME

This option searches all the ULC Guide Information for the requested standard number. To begin, go to the Specific Searches' pull-down menu on the right side of the 'Search' page. Pull down to 'Standard Number" and you get …
Cette option effectue une recherche du numéro de norme demandé dans tout le Guide information ULC. Pour commencer, allez au menu déroulant « Specific Searches » (recherches spécifiques) du côté droit de la page « Search » (recherche). Faites défiler la page jusqu'à « Standard Number » (numéro de la norme) et vous avez...



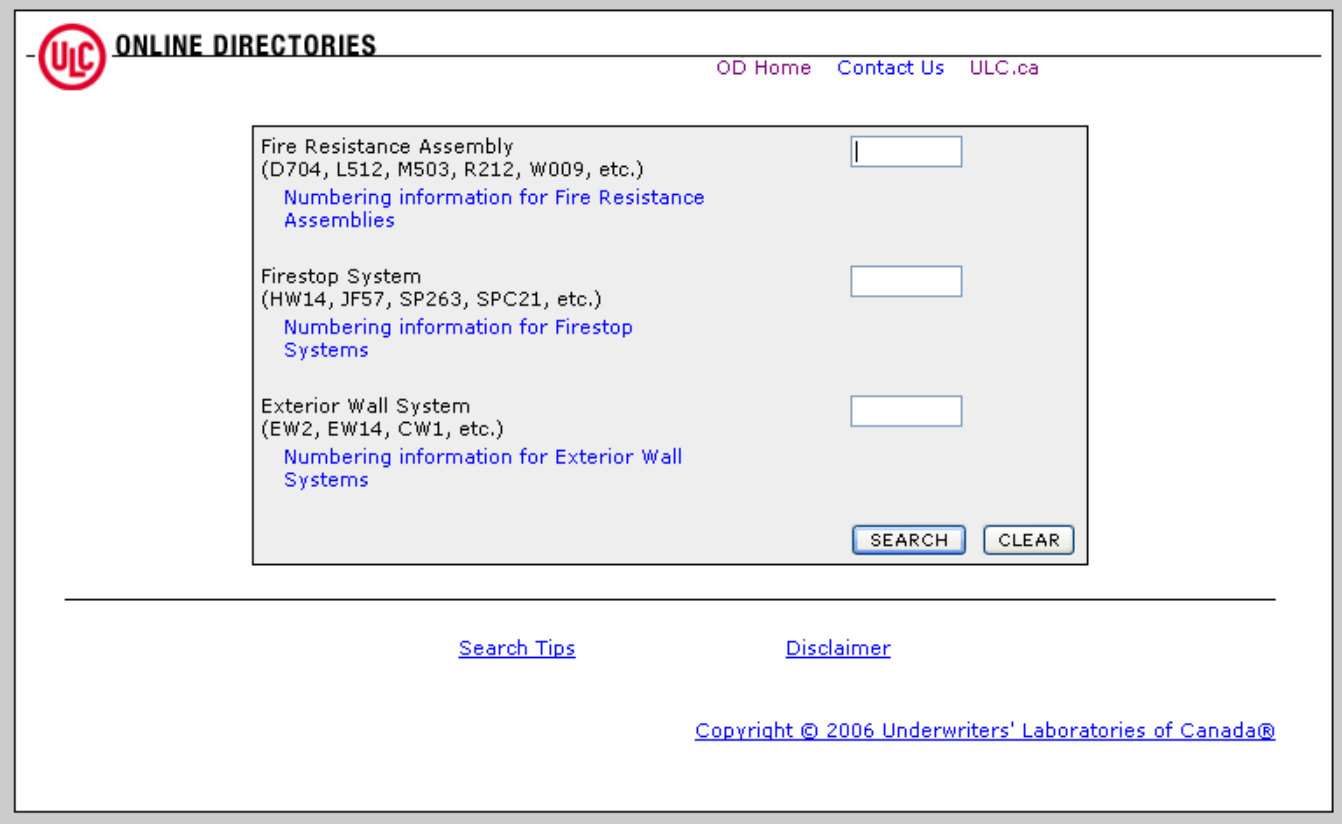
Now, enter in the exact standard (e.g., ULC-S115, CAN/ULC-S603) in the field and click 'Search'. This will result in the ULC Guide Information for one or more categories. Choose the appropriate category by clicking the 'Guide Info' under the 'Link To File' column.
Maintenant, entrez le numéro exact de la norme (p. ex. ULC-S115, CAN/ULC-S603) dans le champ et cliquez sur « Search » (recherche). Le Guide information ULC vous donnera une ou plusieurs catégories. Choisissez la catégorie appropriée en cliquant sur le « Guide Info » sous la colonne « Link to File » (lier au fichier).

(Note: if the search does not result in any hits, try again using only the standard number or *s followed by the standard number or for an ORD *c followed by the ORD number)
(Remarque : Si la recherche ne donne aucun appel de fichier, essayez de nouveau en utilisant uniquement le numéro de la norme ou *s suivi du numéro de la norme ou pour un ORD, *c suivi du numéro ORD.)

6. SEARCH BY FIRE RESISTANCE ASSEMBLIES AND SYSTEMS
6. RECHERCHE D'ASSEMBLAGES ET DE SYSTÈMES RÉSISTANT AU FEU

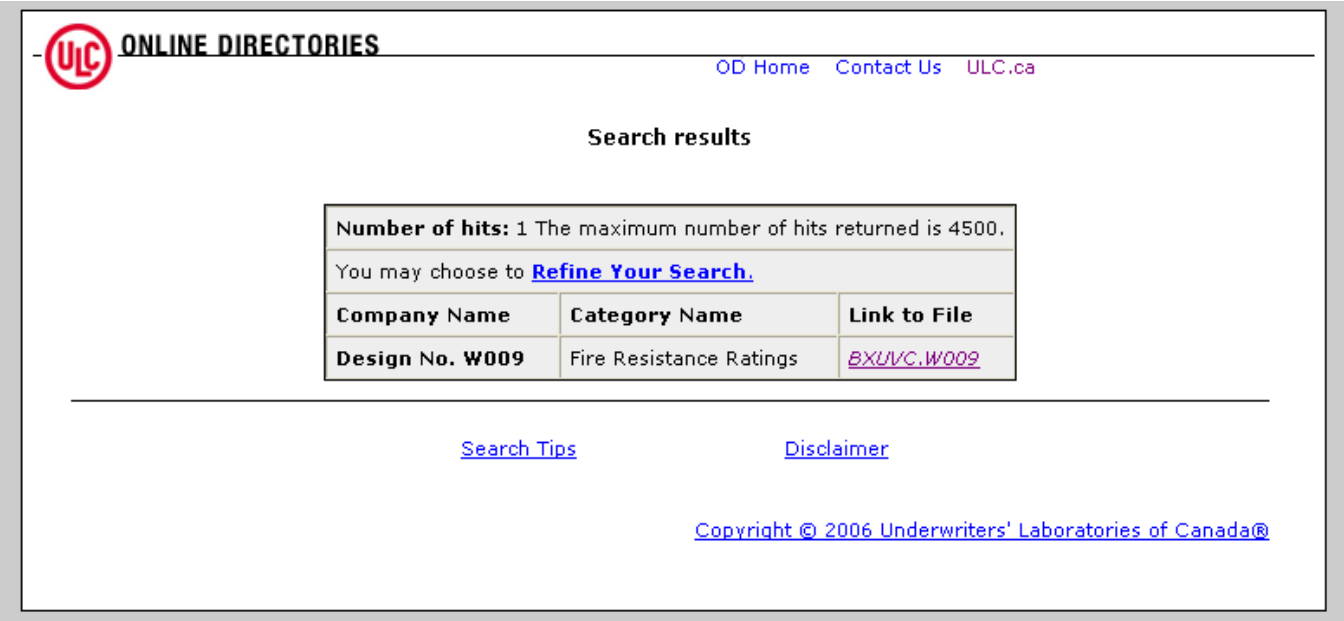
A search of fire resistance assemblies and systems can be done two ways, depending on the information available to you.
Une recherche d'assemblages et de systèmes résistant au feu peut être effectuée de deux façons, selon l'information dont vous disposez.

If you know the exact number for the design or system, go to the 'Specific Searches' pull-down menu on the right side of the main 'Search' page and select "Fire Resistance Assemblies" and you will see …
Si vous connaissez le numéro exact du modèle ou du système, allez au menu déroulant « Specific Searches » (recherches spécifiques) à droite de la page principale de recherche et sélectionnez « Fire Resistance Assemblies » (assemblages résistant au feu) et vous aurez ceci…



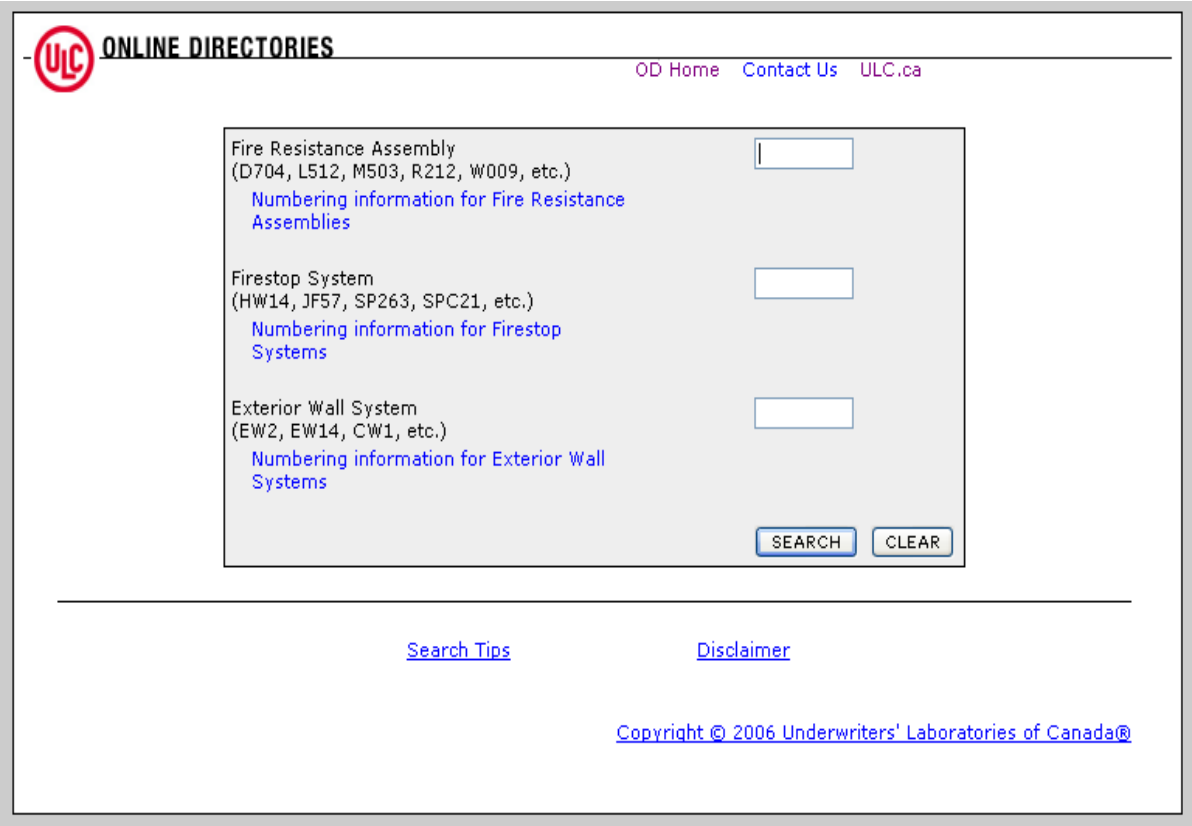
Enter the exact number in the appropriate field. Once you get the Search result, click on the 'Link To File' and you will get the complete ULC design …
Entrez le numéro exact dans le champ approprié. Une fois que vous avez obtenu le résultat de la recherche, cliquez sur « Link to File » (Lier au fichier) et vous obtiendrez le modèle ULC complet …

(Note: Images can be downloaded.)
(Remarque : Les images peuvent être téléchargées.)



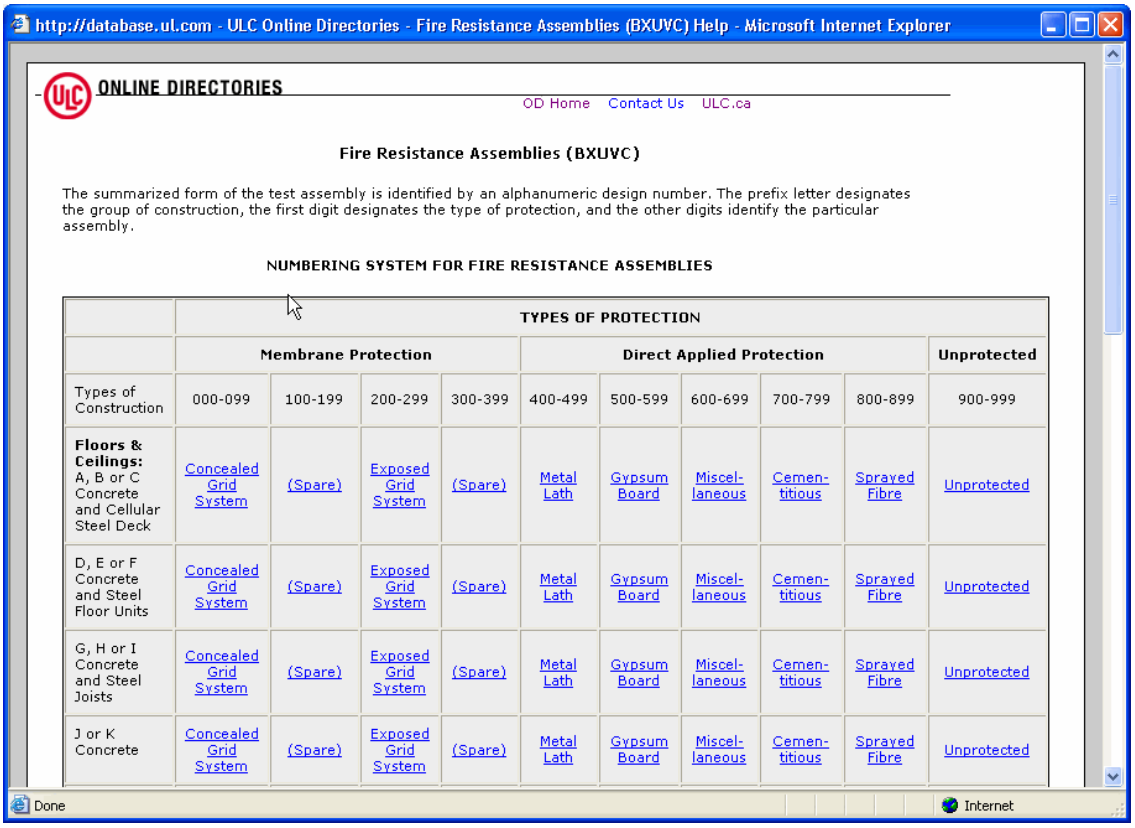
What do you do if you do not know the design number? (Note: This feature is only applicable to assemblies, and not to Firestop and exterior wall systems.)
Que faire lorsque vous ne connaissez pas le numéro de modèle? (Remarque : Cette caractéristique ne s'applique qu'aux assemblages, et non aux éléments coupe-feu ni aux systèmes de murs extérieurs.)

Again, on the main 'Search' page, go to the 'Specific Searches' pull-down menu, open it and click on 'Fire Resistance Assemblies' and you go to …
Encore une fois, sur la page de recherche principale, allez au menu déroulant « Specific Searches » (recherches spécifiques), ouvrez-le et cliquez sur « Fire Resistance Assemblies » (assemblages résistant au feu) et vous allez à...



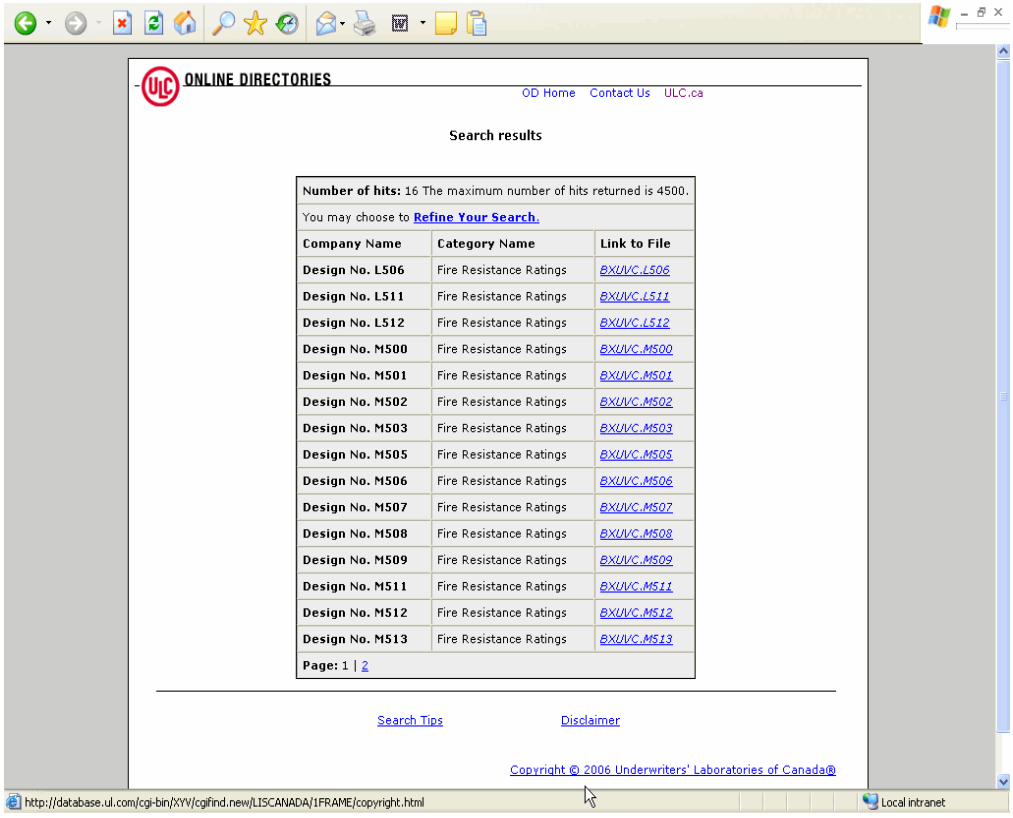
This time, click on the text 'Numbering Information for Fire Resistance Assemblies', (under the 'Fire Resistance Assembly Rating' heading. And you will link to the Fire Resistance Assemblies matrix chart …

Cette fois, cliquez sur le texte « Numbering Information for Fire Resistance Assemblies » (Numérotage de l'information pour les assemblages résistant au feu) (sous l'en-tête « Fire Resistance Assembly Rating » (évaluation des assemblages résistant au feu). Et vous serez en lien avec le graphique matriciel des assemblages résistant au feu ...



Using the scroll bars at the right side and bottom of the page, scroll down the left hand column to find the type of construction needed, then scroll across the top to see the types of protection. Then, click on the appropriate link.
En utilisant les barres de défilement à droite et au bas de la page, faites dérouler la colonne de gauche pour trouver le type de fabrication nécessaire, puis faites défiler horizontalement pour voir les types de protection. Puis, cliquez sur le lien approprié.

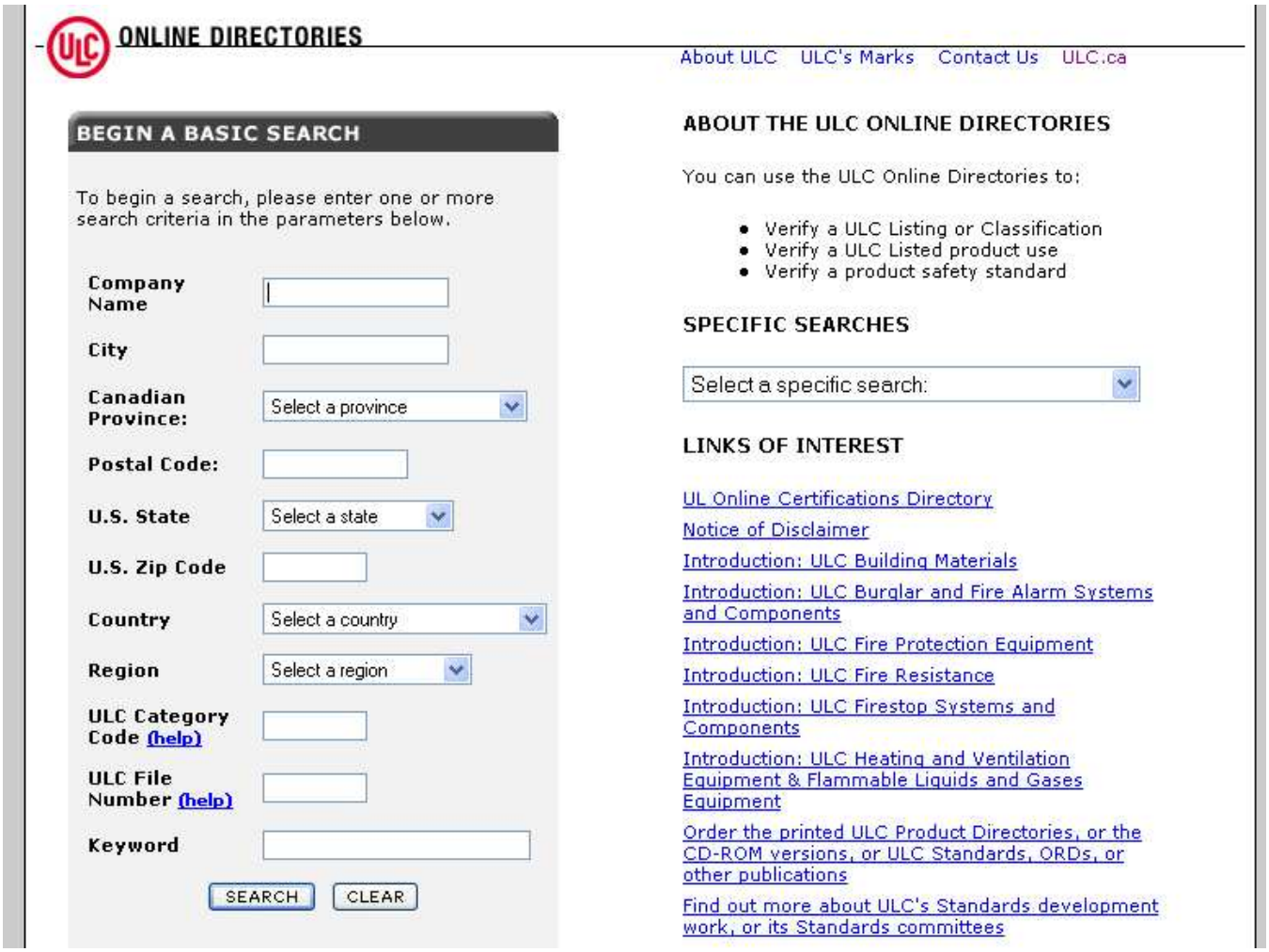
For example, 'Floors & Ceilings', with 'Wood Joists' and 'Gypsum Board' would bring up the following Designs from L500 to M599 …
Par exemple, « Floors & Ceilings » (planchers et plafonds) avec « Wood Joists » (solives de bois) et « Gypsum Board » (panneau de gypse) donneraient les modèles suivants de L500 à M599...



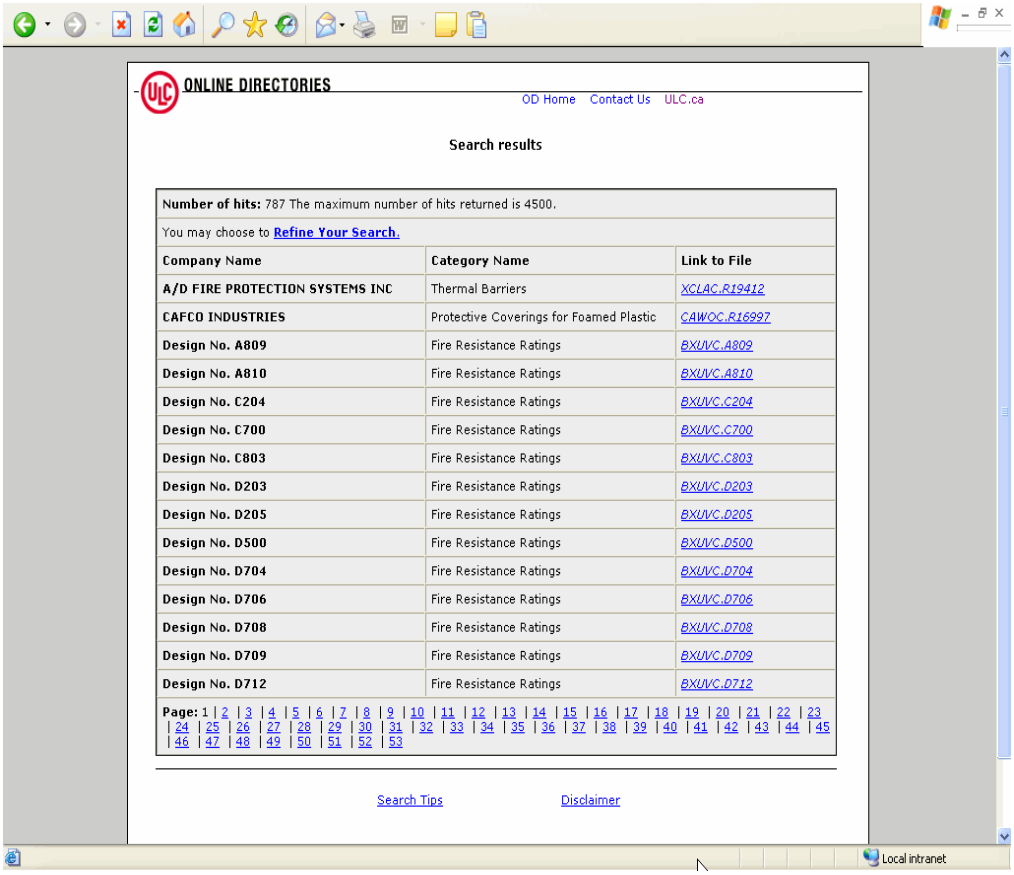
Remember, you can always 'Refine Your Search' if you have a large number of listings. Just click on 'Refine Your Search' at the top of the Table.
N'oubliez pas que vous pouvez toujours « Refine Your Search » (affiner votre recherche) si vous avez un grand nombre d'inscriptions. Cliquez simplement sur « Refine your Search » (affiner votre recherche) en haut du tableau.

7. SEARCH BY KEYWORD
7. RECHERCHE PAR MOT CLÉ

The 'Keyword' search function searches the entire Online Certification Directory database. Using the 'Tips for Effective Searches' provided, enter the available information and click 'Search'
La fonction de recherche « Keyword » (mot clé) effectue des recherches dans toute la base de données du répertoire de certifications en ligne. En utilisant les « Tips for Effective Searches » (conseils pour des recherches efficaces) qui vous sont fournis, entrez l'information disponible et cliquez sur « Search » (recherche).



For example, entering 'Fire Resistance' will give the following 'hits' …
Par exemple, si vous entrez « Fire Resistance » (résistant au feu), vous obtiendrez les appels de fichiers suivants :



Again, when a large number of hits appear, you can refine your search, or you can click on the appropriate link in the 'Link To File' column.
Encore une fois, lorsqu'un grand nombre d'appels de fichiers se produit, vous pouvez affiner votre recherche, ou vous pouvez cliquer sur le lien approprié dans la colonne « Link to File » (Lier au fichier).

NOTE: If a search result yields '0" hits the screen will read "Sorry, No Match Found". When this shows, click on the 'Back' or 'Previous Page' button to return to the main search page. Verify the input information was correct and click 'Search' again.
REMARQUE : Si le résultat d'une recherche ne donne aucun appel de fichier, l'écran affichera « Sorry, No Match Found » (désolé, aucune correspondance n'a été trouvée). Lorsque cela survient, cliquez sur le bouton « Back » (précédent) ou « Previous Page » (page précédente) pour revenir à la page de recherche principale. Vérifiez si l'information entrée était exacte et cliquez de nouveau sur « Search » (recherche).

If the input information was correct, try using alternate wording.
Si l'information entrée était exacte, essayez d'utiliser une autre formulation.

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Online Certification Directory Quick Guide

Guide de consultation rapide du répertoire de certifications en ligne

Welcome to the UL Online Certifications Directory, a faster way to access UL Certifications. You can use the UL Online Certification Directory to:
Bienvenue au répertoire de certifications UL en ligne, une manière plus rapide d'avoir accès aux certifications UL. Vous pouvez utiliser le répertoire de certifications en ligne UL pour :

- **Verify a UL Certification**
- **Verify a UL Certified product use**
- **Verify a product safety standard**
- vérifier une certification UL;
- vérifier l'utilisation d'un produit certifié UL;
- vérifier la norme de sécurité d'un produit.

Search The UL Online Certification Directory Using:

- **Company name/location**
- **Keyword**
- **Standard Number**
- **UL File Number**
- **UL Category Code/Guide Information**
- **Fire Resistance Assemblies and Systems**
- **Food Safety Equipment**
- **Sprinkler Identification Number**

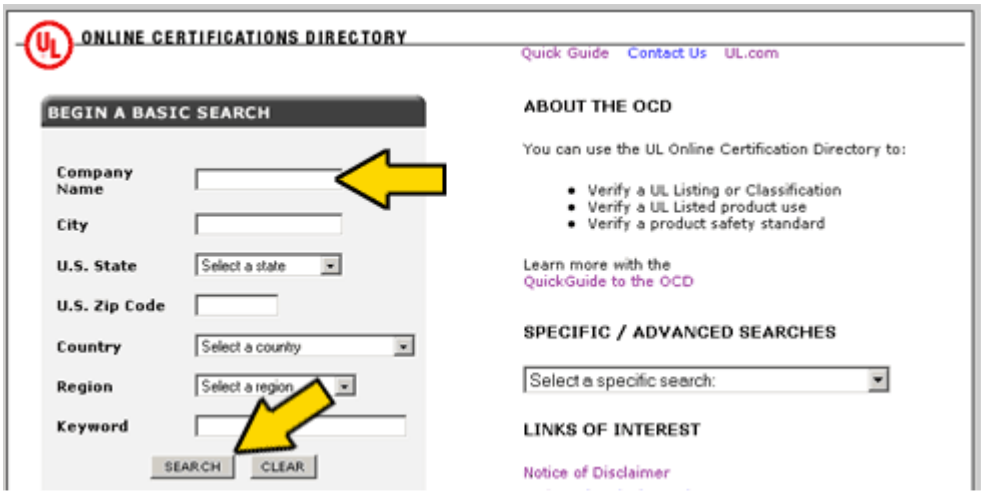
Effectuez une recherche dans le répertoire de certifications UL en ligne en utilisant :

- le nom de l'entreprise ou l'emplacement;
- un mot clé;
- le numéro de la norme;
- le numéro de dossier UL;
- le numéro de code de catégorie UL ou le Guide information;
- les systèmes et assemblages résistant au feu;
- l'équipement de sécurité alimentaire;
- le numéro d'identification de gicleur.

To begin, log on to www.ul.com/database
Pour commencer, ouvrez une session à l'adresse www.ul.com/database.

Search By Company Name:
Recherche par nom d'entreprise :

To begin a search for information regarding a specific company, enter the company name and other available information in the fields provided, and then click "Search".
Pour entreprendre une recherche d'information concernant une entreprise spécifique, entrez le nom de l'entreprise et les autres renseignements disponibles dans les champs fournis à cet effet, puis cliquez sur « Search » (recherche).



Search results often yield multiple "hits," which are listed in alphabetical order by Company Name.
Les résultats de la recherche donnent souvent lieu à de multiples appels de fichiers énumérés par ordre alphabétique de nom d'entreprise.

To reduce the number of "hits," choose "Refine Your Search."
Pour réduire le nombre d'appels de fichiers, choisissez « Refine Your Search » (affiner votre recherche).

To refine, enter additional information in the "Keyword" field and click "Search".
Pour affiner votre recherche, entrez de l'information additionnelle dans le champ « Keyword » (mot clé) et cliquez sur « Search » (recherche).

Refining using multiple pieces of information is possible by using "and", "or" and "not" statements, and wildcards as demonstrated through the "Search Tips" link or the following Tips for Effective Searches:
Il est possible d'affiner une recherche en utilisant des éléments d'information comme « and » (et), « or » (ou) et « not » (sans) ou des caractères de remplacement tels que l'illustre le lien « Search Tips » (conseils de recherche) ou les Conseils pour des recherches efficaces suivants :

TIPS FOR EFFECTIVE SEARCHES
CONSEILS POUR DES RECHERCHES EFFICACES

Select a search method

- **Match all words - type AND between words (i.e., display and nwgq)**
- **Match any word - type OR between words (i.e., hair dryer or blow dryer)**
- **Match phrase(s) - type exact phrase (i.e., washing machine)**

- **Exclude a word - type NOT before word (i.e., roof panel not metal)**
- **Match a partial word or phrase - To replace any characters or words that you may not know, add an asterisk (*) in the middle or at the end of the characters or words in your search.**

  Examples
  - **Company Name - company***
  - **Keyword - submersible***

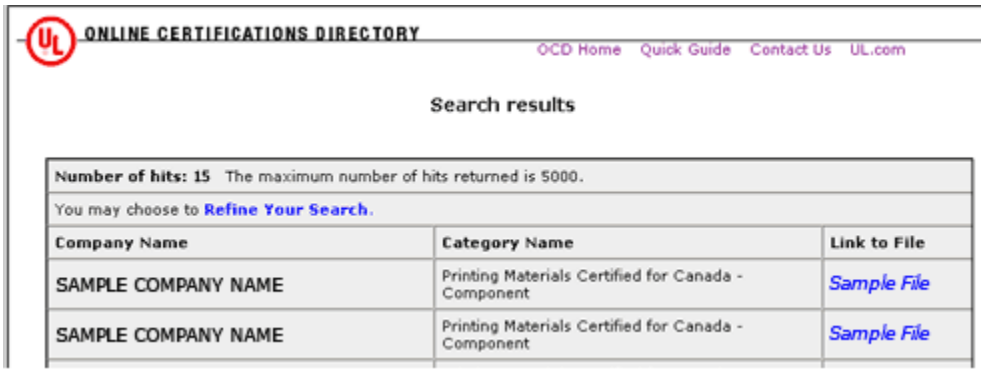
Sélectionnez une méthode de recherche

- Apparier tous les mots : tapez AND (et) entre les mots (p. ex. display and nwgq)
- Apparier n'importe quel mot : tapez OR (ou) entre les mots (p. ex. hair dryer or blow dryer)
- Apparier les syntagmes : tapez le syntagme exact (p. ex. washing machine)
- Exclure un mot : tapez NOT (sans) avant le mot (p. ex. roof panel not metal)
- Apparier un mot ou un syntagme partiel. Pour remplacer des caractères ou des mots que vous ne connaissez pas, ajoutez un astérisque (*) au milieu ou à la fin de la chaîne de caractères ou de mots dans votre recherche.

  Exemples
  - Company Name (Nom d'entreprise) – company* (entreprise)
  - Keyword (Un mot clé) – submersible*

Once the number of "hits" has been reduced, click on the appropriate link in the "Link to File" column to view the company's current Certification(s) or refine further by again clicking "Refine Your Search."

Une fois que le nombre d'appels de fichiers a été réduit, cliquez sur le lien approprié dans la colonne « Link to File » (lier au fichier) pour visualiser les certifications actuelles de l'entreprise ou affinez davantage votre recherche en cliquant de nouveau sur « Refine Your Search » (affiner votre recherche).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Search results

Number of hits: 15 The maximum number of hits returned is 5000.

You may choose to **Refine Your Search**.

Company Name	Category Name	Link to File
SAMPLE COMPANY NAME	Printing Materials Certified for Canada - Component	*Sample File*
SAMPLE COMPANY NAME	Printing Materials Certified for Canada - Component	*Sample File*

The electronic Certifications contain the same, if not more, UL Certification information than is available in the printed directory.

Les certifications en ligne contiennent autant, sinon plus, d'informations quant aux certifications UL que le répertoire imprimé.

To view the description/specifications for the category, click the "See General Information for…" link located above the company name.
Pour voir une description et les spécifications de la catégorie, cliquez sur le lien « See General Information for...» (voir les renseignements généraux sur...) au-dessus du nom de l'entreprise.

Note: wording may read "Guide Information for …" in place of General Information.
Remarque : le libellé peut se lire « Guide Information for » (Guide information pour) au lieu de « General Information » (renseignements généraux).

UL Guide Information outlines the scope and limitations of a product category, the Standard for Safety used to evaluate products, and the applicable UL Mark by which the products can be identified in the field. View the next level of Guide Information by again clicking the "See General Information for…" link.
Le Guide information UL précise la portée et les limites d'une catégorie de produits, les normes de sécurité utilisées pour évaluer les produits, et la marque UL applicable par laquelle le produit peut être identifié sur place. Visualisez le prochain niveau du Guide information en cliquant de nouveau sur le lien « See General Information for... » (voir Renseignements généraux pour...).

Search By Keyword:
Recherche par mot clé :

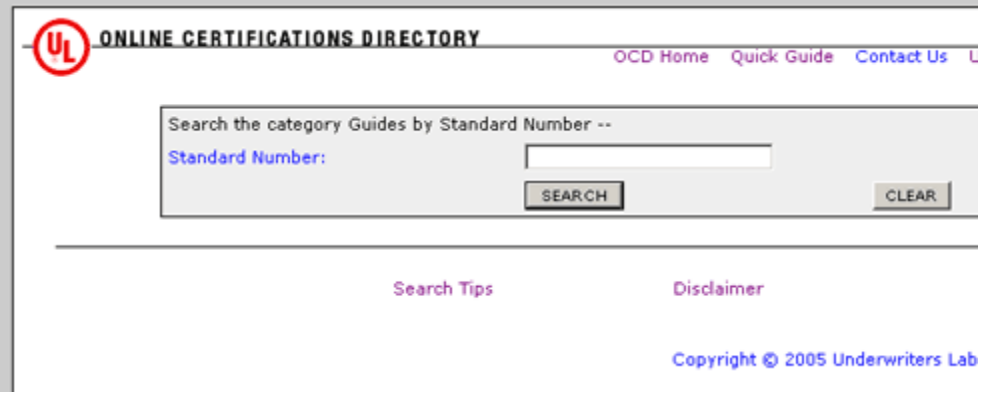
This "Keyword" search function will search the entire Online Certification Directory database. Using the "Search Tips" provided, enter the available information and click "Search".
Cette fonction de recherche par « Keyword » (mot clé) effectuera des recherches dans toute la base de données du répertoire de certifications en ligne. En utilisant les « Search Tips » (conseils de recherche) fournis, entrez l'information disponible et cliquez sur « Search » (recherche).

Refine your search or click the appropriate link in the "Link to File" column.
Affinez votre recherche ou cliquez sur le lien approprié de la colonne « Link to File » (lier au fichier).

Search by Standard Number:
Recherche par « Standard Number »(numéro de norme) :

This option searches all UL Guide Information for the requested standard number (UL and other). Your results, a list of product categories whose products were evaluated to or whose Guide Information references the standard.
Cette option effectue une recherche du numéro de norme demandé (UL et autres) dans tout le Guide information UL. Vos résultats, une liste de catégories de produits dont les produits ont été évalués ou pour lesquels le Guide information fait référence à la norme.

To begin search, enter the exact standard (ASTM E84, UL 300, ANSI/NSF 61, etc.) number in the available "Standard Number" field and click "Search."
Pour commencer la recherche, entrez le numéro exact de la norme (ASTM E84, UL 300, ANSI/NSF 61, etc.) dans le champ « Standard Number » (numéro de norme) disponible et cliquez sur « Search » (recherche).



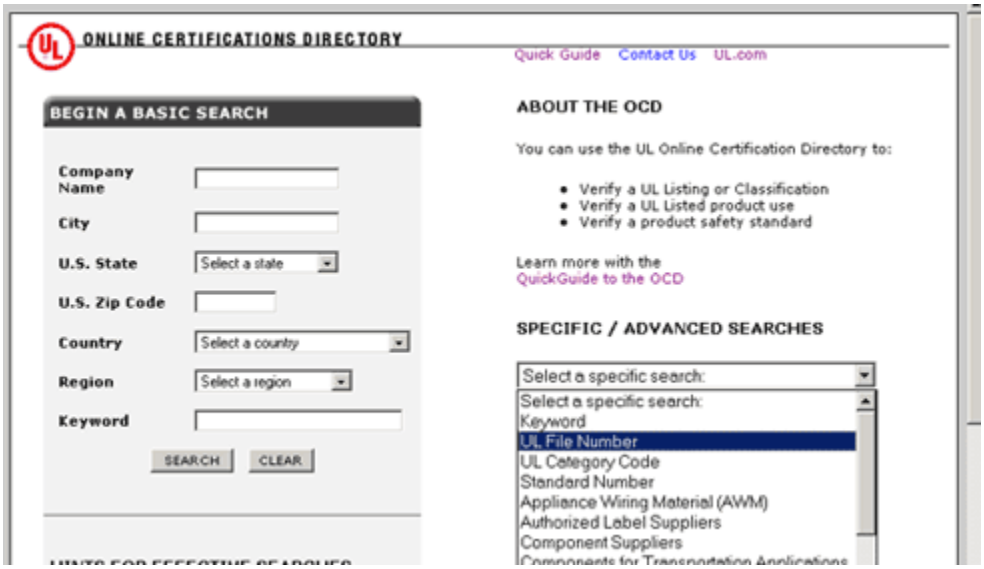
This search results in the UL Guide Information for one or more categories. Choose the correct category by clicking the "GuideInfo" link in the "Link to File" column.
Les résultats de cette recherche vous donneront une ou plusieurs catégories dans le Guide information UL. Choisissez la catégorie appropriée en cliquant sur le lien « GuideInfo » de la colonne « Link to File » (lier au fichier).

Note: If your search does not result in any "Hits", try it again using only the number (i.e. E84, 300, 61, etc.).
Remarque : Si votre recherche ne donne aucun appel de fichiers, essayez de nouveau en n'utilisant que le numéro (p. ex. E84, 300, 61, etc.).

Search By UL File Number:
Recherche par« UL File Number » (numéro de fichier UL) :

A "File Number" is an alphanumeric designation (e.g. E12346, MH3456, R4600, etc.) assigned by UL and associated with a specified company and product category.
Un « File Number » (numéro de fichier) est une désignation alphanumérique (p. ex. E12346, MH3456, R4600, etc.) assignée par UL et liée à une entreprise et à une catégorie de produit spécifiques.

To search by "File Number", first use the drop-down menu on the main page.
Pour effectuer une recherche par « File Number » (numéro de fichier), utilisez d'abord le menu déroulant de la page principale.



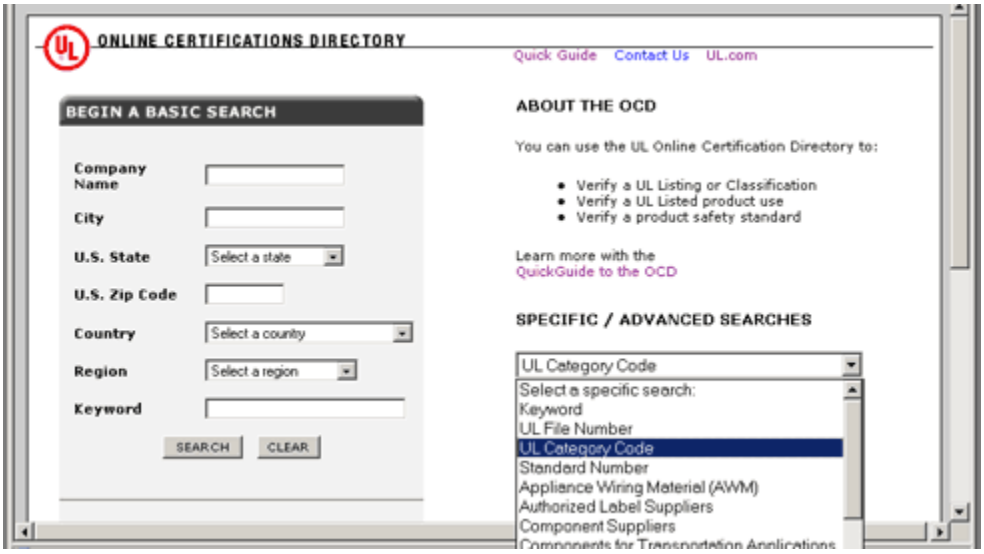
Next, enter the file number and click "Search".
Tapez ensuite le numéro de fichier et cliquez sur « Search » (recherche).

As in the previous example, click the appropriate File Number link in the "Link to File" column.
Comme dans l'exemple précédent, cliquez sur le numéro de fichier approprié dans la colonne « Link to File » (Lier au fichier).

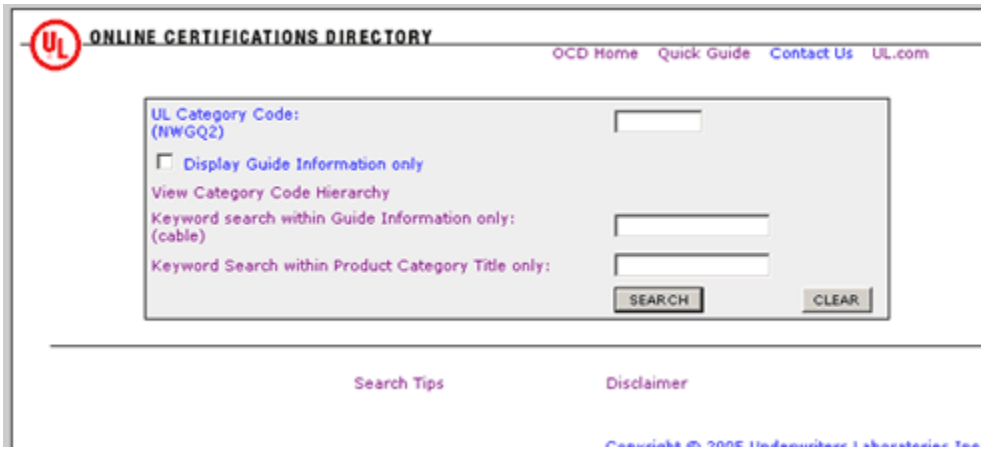
Search by UL Category Code:
Recherche par « UL Category Code » (code de catégorie UL) :

“Category Code” allows for four search options. They are 1) UL Category Code, 2) Keyword search within Guide Information only, 3) Keyword Search within Product Category Title only, and 4) Category Code Hierarchy view.
Le « Category Code » (code de catégorie) offre quatre options de recherche. Ce sont 1) « UL Category Code » (le code de catégorie UL), 2) la recherche par « Keyword » (mot clé) dans le Guide information seulement, 3) la recherche par « Keyword » (mot clé) dans « Product Category Title » (titre de catégorie de produit) seulement, et 4) la vue de la « Category Code Hierarchy » (hiérarchie du code de catégorie).

A UL Category Code is an alphanumeric designation (GBTV, QMFZ2) assigned by UL and associated with a specific product category. To search by UL Category Code, use the drop-down menu on the main page.
Un code de catégorie UL est une désignation alphanumérique (GBTV, QMFZ2) assignée par UL et liée à une catégorie de produit spécifique. Pour effectuer une recherche par « UL Category Code » (code de catégorie UL), utilisez d'abord le menu déroulant de la page principale.



To search for keywords in either the Guide Information or product category title, enter the information in the respective “Keyword search within Guide Information Only” “or “Keyword search within Product Category Title only” field and click “Search.” Note: This “keyword” search function searches only the UL Guide Information. To search for keyword(s) throughout the entire database, use the Keyword option described in full below.
Pour effectuer une recherche par mots clés dans le Guide information ou dans le titre de catégorie de produit, entrez l'information dans le champ respectif « Keyword search within Guide Information Only » (recherche par mot-clé dans le Guide information seulement) ou « Keyword search within Product Category Title only » (recherche de mot clé dans le titre de catégorie de produit seulement) et cliquez sur « Search » (recherche). **Remarque :** Cette fonction de recherche par mot clé n'effectue les recherches que dans le Guide information UL. Pour effectuer une recherche par mots clés dans toute la base de données, utilisez l'option « Keyword » (mot clé) dont la description détaillée est donnée ci-après.



To search for the UL Guide Information for a specific category code, enter the category code in the available "Category Code" field, click the "Display Guide Information Only" box and then click "Search".
Pour effectuer une recherche dans le Guide information UL pour un code de catégorie spécifique, entrez le code de catégorie dans le champ disponible « Category Code », cliquez sur la case « Display Guide Information Only » (afficher le Guide information seulement), puis cliquez sur « Search » (recherche).

Note: Omitting the "Display Guide Information Only" box will result in the UL Guide Information AND all current Certifications for a given category code.
Remarque : Le fait d'omettre la case « Display Guide Information Only » (afficher le Guide information seulement) entraînera une recherche dans le Guide information UL ET dans toutes les certifications actuelles pour un code de catégorie donné.

This search results in the UL Guide Information for one or more categories. Choose the correct category by clicking the "GuideInfo" link in the "Link to File" column.
Les résultats de cette recherche vous donneront une ou plusieurs catégories dans le Guide information UL. Choisissez la catégorie appropriée en cliquant sur le lien « GuideInfo » de la colonne « Link to File » (lier au fichier).

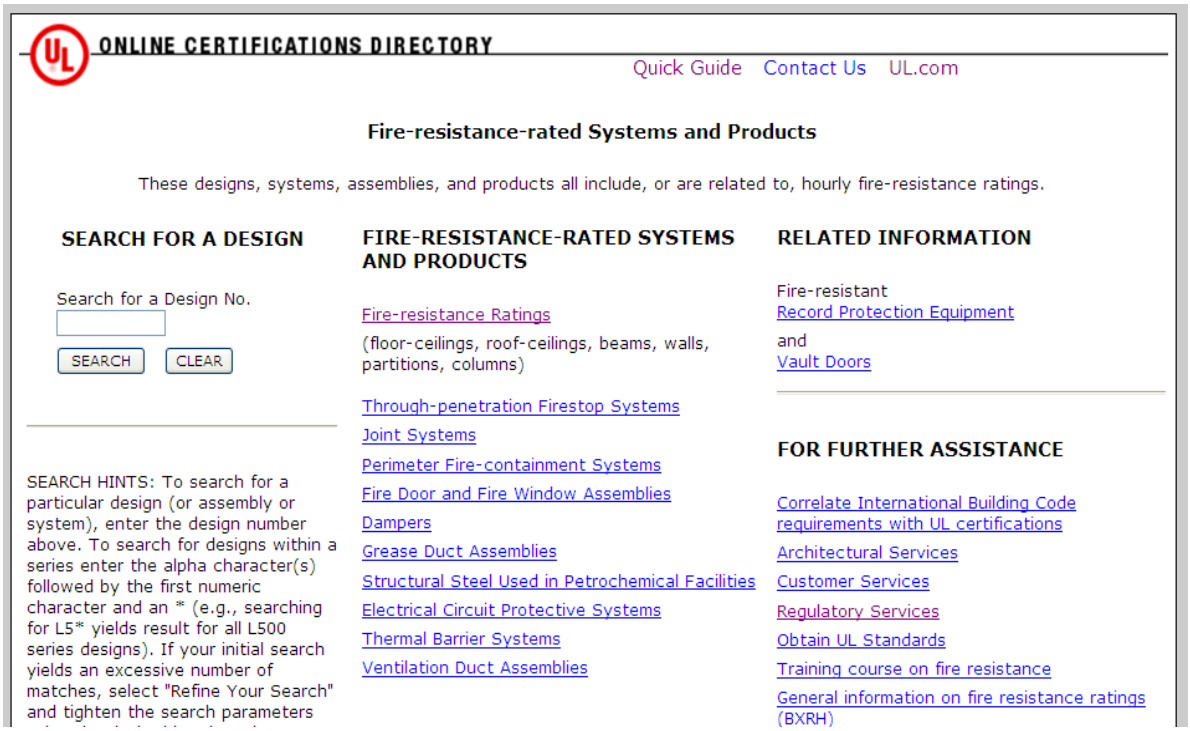
To view all current UL Certifications for a Category Code from within the Guide Information, click "View Listings".
Pour visualiser toutes les certifications UL actuelles pour un code de catégorie du Guide information, cliquez sur « View Listings » (voir inscriptions).

Click the appropriate link in the "Link To File" to view the individual UL Certifications.
Cliquez sur le lien approprié « Link to File » (lier au fichier) pour visualiser les certifications UL individuelles.

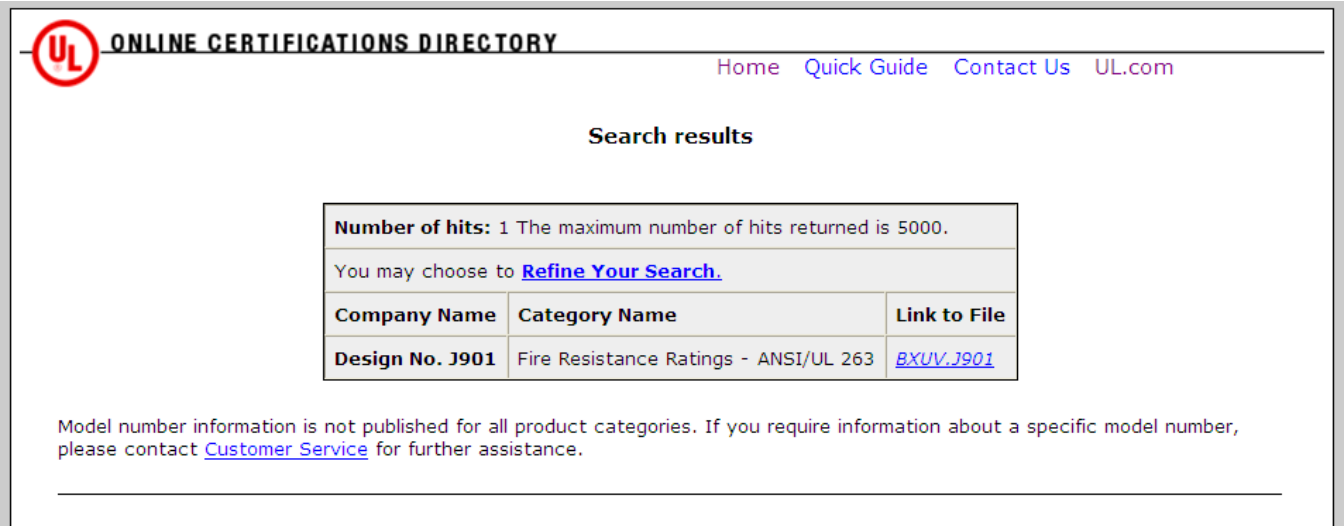
Search Fire Resistance:
Recherche de résistance au feu :

A search for fire resistive assemblies or systems can be performed two ways, depending on the information available.
Une recherche sur les assemblages et les systèmes résistant au feu peut être effectuée de deux façons, selon l'information disponible.

Enter the exact UL Design, System, Construction or Assembly number in the appropriate field and click "Search."
Entrez le numéro UL exact de modèle, de système, de fabrication ou d'assemblage dans le champ approprié et cliquez sur « Search » (recherche).

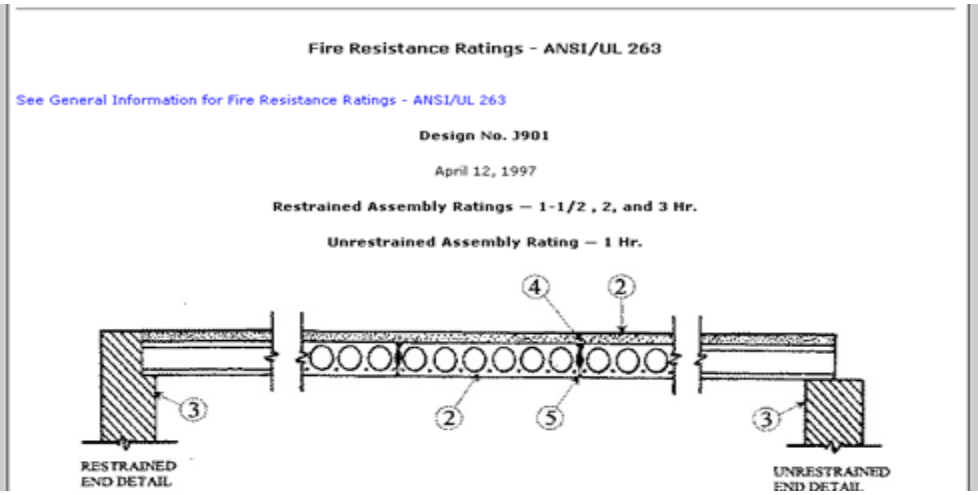


Click the appropriate link in the “Link to File” column.
Cliquez sur le lien approprié dans la colonne « Link to File » (lier au fichier).



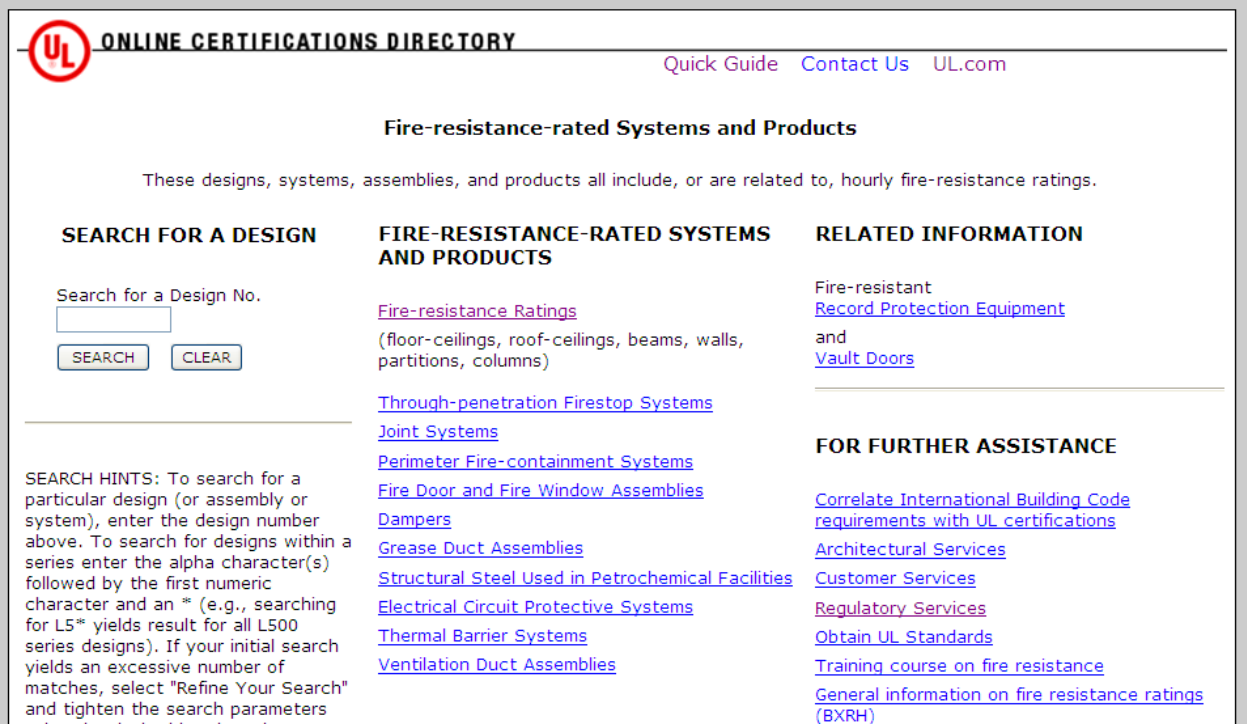
The result is a complete UL Design, including illustration and specifications.
Vous aurez comme résultat le modèle UL complet, y compris l'illustration et les spécifications.

Note: Images can be downloaded for use in architectural drawings.
Remarque : Les images peuvent être téléchargées pour être utilisées dans des dessins d'architecture.

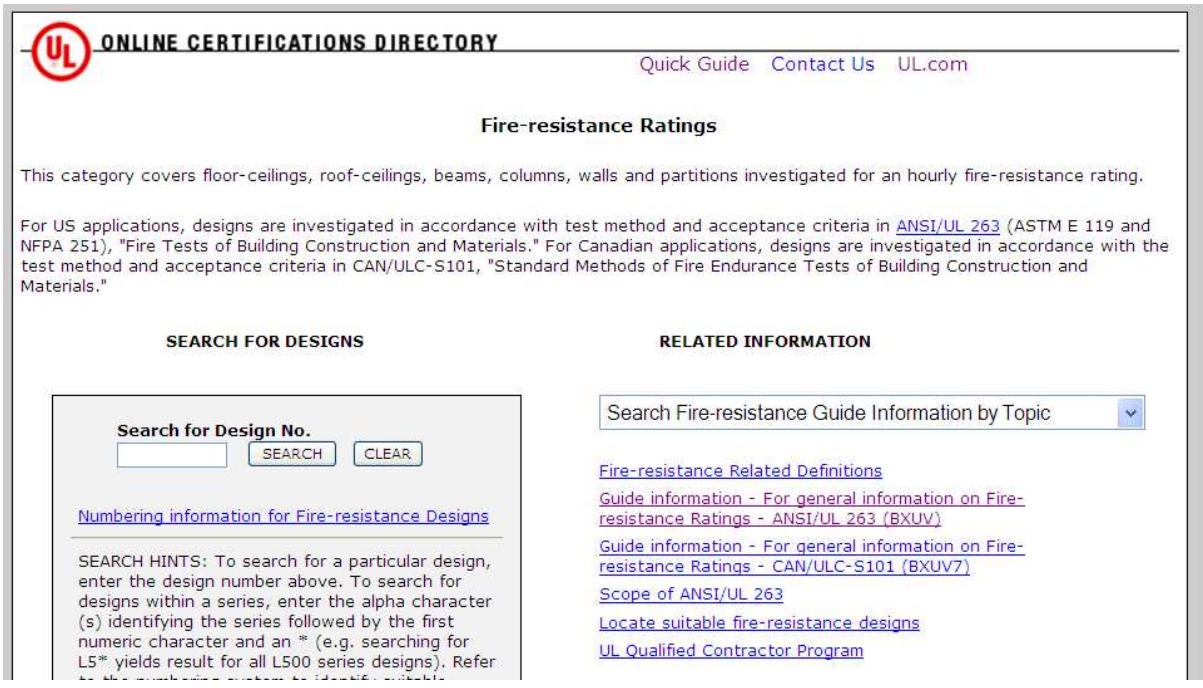


But what do you do when you don't know the design or system number?
Mais que faire lorsqu'on ne connaît pas le numéro de modèle ni le numéro de système?

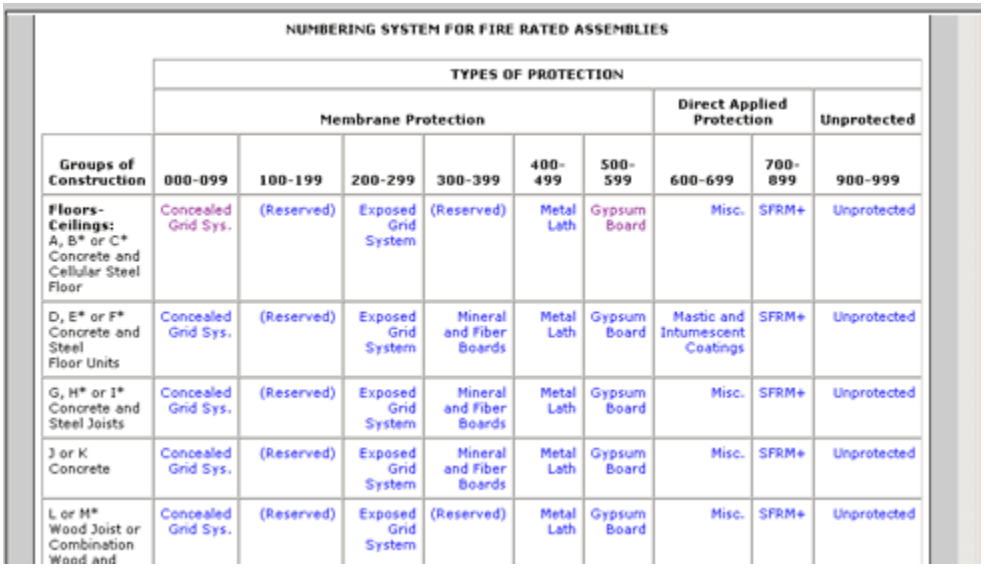
Click on the Fire Resistance Ratings link
Cliquez sur le lien « Fire Resistance Ratings » (Degré de résistance au feu)



Click the blue "Numbering System for Fire Rated Assemblies" link to view the interactive Fire Resistive Design Matrix.
Cliquez sur le lien en bleu « Numbering System for Fire Rated Assemblies » (numérotage de système pour les assemblages cotés pour leur résistance au feu) pour afficher la Matrice de conception résistante au feu interactive.



Scroll down the left-hand column to the type of construction needed; then, scroll across to view the types of membrane protection. Click the appropriate link. For example, Floors & Ceilings assemblies with concrete and cellular steel floor (construction) + Exposed Grid System (protection) = all current Designs between A200-A299.
Faites défiler la colonne gauche jusqu'au type de fabrication nécessaire; puis, faites défiler horizontalement pour voir les types de protection de membrane. Cliquez sur le lien approprié. Par exemple, « Floors & Ceilings » (planchers et plafonds) avec « Concrete and cellular steel floor » (plancher en béton et en acier cellulaire) (fabrication) + « Exposed Grid System » (système de grille apparent) (protection) = tous les modèles actuels entre A200-A299.



NUMBERING SYSTEM FOR FIRE RATED ASSEMBLIES

	TYPES OF PROTECTION								
	Membrane Protection						Direct Applied Protection		Unprotected
Groups of Construction	000-099	100-199	200-299	300-399	400-499	500-599	600-699	700-899	900-999
Floors-Ceilings: A, B* or C* Concrete and Cellular Steel Floor	Concealed Grid Sys.	(Reserved)	Exposed Grid System	(Reserved)	Metal Lath	Gypsum Board	Misc.	SFRM+	Unprotected
D, E* or F* Concrete and Steel Floor Units	Concealed Grid Sys.	(Reserved)	Exposed Grid System	Mineral and Fiber Boards	Metal Lath	Gypsum Board	Mastic and Intumescent Coatings	SFRM+	Unprotected
G, H* or I* Concrete and Steel Joists	Concealed Grid Sys.	(Reserved)	Exposed Grid System	Mineral and Fiber Boards	Metal Lath	Gypsum Board	Misc.	SFRM+	Unprotected
J or K Concrete	Concealed Grid Sys.	(Reserved)	Exposed Grid System	Mineral and Fiber Boards	Metal Lath	Gypsum Board	Misc.	SFRM+	Unprotected
L or M* Wood Joist or Combination Wood and	Concealed Grid Sys.	(Reserved)	Exposed Grid System	(Reserved)	Metal Lath	Gypsum Board	Misc.	SFRM+	Unprotected

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Search results

Number of hits: 4 The maximum number of hits returned is 5000.

You may choose to **Refine Your Search.**

Company Name	Category Name	Link to File
Design No. A202	Fire Resistance Ratings - ANSI/UL 263	*BXUV.A202*
Design No. A210	Fire Resistance Ratings - ANSI/UL 263	*BXUV.A210*
Design No. A211	Fire Resistance Ratings - ANSI/UL 263	*BXUV.A211*
Design No. A212	Fire Resistance Ratings - ANSI/UL 263	*BXUV.A212*

Model number information is not published for all product categories. If you require information about a specific model number, please contact Customer Service for further assistance.

Search Tips Disclaimer

Click “Refine Your Search” to further narrow your results. Refine your results using hourly ratings (drop down menu) and/or a key word or phrase, such as a fixture, batts and blankets, or even a specific manufacturer’s name.
Cliquez sur « Refine Your Search » (affiner votre recherche) pour concentrer davantage vos résultats. Affinez vos résultats en utilisant les taux horaires (du menu déroulant), un mot clé ou un syntagme, comme accessoire fixe, coussins et matelas isolants, ou même le nom d'un fabricant en particulier.

Note: Remember, "Keyword" searches benefit from using "and", "or" and "not" statements, and wildcards.
Remarque : Ne pas oublier que dans les recherches par mot clé, il y aurait avantage à utiliser les mots « and » (et), « or » (ou) et « not » (sans), de même que les caractères de remplacement.

Troubleshooting:
Diagnostic de pannes :

If the search results yield 0 hits the screen will read "Sorry, No Match Found." Use your browser's "Back" button to return to the search page. Verify the input information, correct and click "Search".
Si le résultat de la recherche ne donne aucun appel de fichiers, l'écran affichera « Sorry, No Match Found » (Désolé, aucune correspondance n'a été trouvée). Utilisez le bouton « Back » (précédent) de votre navigateur pour retourner à la page de recherche. Vérifiez l'information entrée, corrigez et cliquez sur « Search » (recherche).

If the input information was correct, try using alternate wording (e.g. sheetrock vs. wallboard).
Si l'information entrée était exacte, essayez d'utiliser une autre formulation (p. ex. panneau de placoplâtre par opposition à panneau mural).