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STANDARDS BULLETIN 2009-35

CAN/ULC-S548-08, DEVICES AND ACCESSORIES FOR WATER TYPE EXTINGUISHING SYSTEMS

INTERPRETATION OF CLAUSE 7.19.1.1

The following is an interpretation of Clause 7.19.1.1 by the ULC Subcommittee on Accessory Devices for Fire Alarm Systems, on CAN/ULC-S548-08 (Devices and Accessories for Water Type Extinguishing Systems).

The Clause in question reads…

7.19 TESTS OF ELASTOMERIC MATERIALS

7.19.1 Oxygen Aging Test

7.19.1.1 Nonmetallic materials, which are employed as functional parts of a waterflow indicator, such as gaskets, "O" rings, seals, and diaphragms, shall not show signs of deterioration when subjected to visual examination and hand flexing following air-oven aging for 70 h at 100 ±2°C. This test is to be conducted in accordance with ASTM D572, Standard Test Method for Rubber Deterioration by Heat and Oxygen. Three samples of each material are to be tested.

Issue 1:
There is an inconsistency between the aging time and temperature in 7.19.1.1 and the aging time and temperature in ASTM D572 (Standard Test Method for Rubber-Deterioration by Heat and Oxygen). Clause 7.19.1.1 specifies an aging time and temperature of 70 hours at 100 ±2°C, while ASTM D572 specifies an aging time and temperature of 96 hours at 70°C.
Interpretation:
The test specified in Clause 7.19.1.1 is intended to be carried out in accordance with ASTM D572 (Standard Test Method for Rubber Deterioration by Heat and Oxygen), except that the exposure period shall be 70 h at 100 ±2 °C, as currently specified in the Standard.

Issue 2:
The requirement for "visual examination and hand flexing" in 7.19.1.1 is subjective and does not provide a pass/fail criteria.
Interpretation:
The test specified in Clause 7.19.1.1 is intended to include a visual examination for rips, tears, perforations or such, while being hand flexed in the direction and range of motion as anticipated by the intended application.

Issue 3:
Clause 7.19.1.1 specifies that nonmetallic materials be tested in accordance with ASTM D572 (Standard Test Method for Rubber Deterioration by Heat and Oxygen), which specifies test methods for rubber. It is unclear what tests to conduct if the material being used is not rubber.
Interpretation:
The test specified in Clause 7.19.1.1 is intended to be applied for all types of materials, as stated in the beginning sentence.

The intent of Clause 7.19.1.1 is as summarized below:

7.19.1.1 Nonmetallic materials, which are employed as functional parts of a waterflow indicator, such as gaskets, "O" rings, seals, and diaphragms, shall not show signs of deterioration when subjected to visual examination *for rips, tears, perforations or such, while being hand flexed* ~~*and hand flexing*~~ *in the range of motion as anticipated by the intended application* ~~*following air-oven aging for 70 h at 100 ±2°C*~~*. This test is to be conducted* *on all types of material* *in accordance with ASTM D572, Standard Test Method for Rubber Deterioration by Heat and Oxygen*, *with the exception that the material be air-oven aged for 70 h at 100 ±2°C. Three samples of each material are to be tested.*

The proposed revisions to clarify this Clause shall be considered during the next review cycle of this Standard.

Should you require additional information, please contact Mike Prasad at (416) 757-5250 ext. 61242 or by email at mahendra.prasad@ca.ul.com.

Yours truly,

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