STANDARDS UPDATE NOTICE (SUN)
ISSUED: April 16, 2021

STANDARD INFORMATION

Standard Number: UL 44 / CSA C22.2 No. 38
Standard Name: Thermoset-Insulated Wires and Cables
Standard Edition and Issue Date: 19th / 11th Dated January 9, 2018
Date of Revision: January 9, 2018
Date of Previous Revision of Standard: 18th / 10th Edition Revised February 9, 2015

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **March 21, 2022**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: A review of all Listing Reports is necessary to determine which products comply with new/revised requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

Overview of Changes:

- Revision to the Sunlight resistance test for Canada
- Revision to the requirements for wires marked PRII
- Revision to the requirements for jacket materials
- Revision to the marking of conductors
- Revision to the requirements for pump cables in Canada

Specific details of new/revised requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.

STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		Additions to existing requirements are underlined and deletions are shown lined out below.
5	Info	**Test Requirements**
5.15		**Weather (sunlight) resistance (optional)**
5.15.1		In the United States and Mexico: to be marked SR, materials shall retain 80 percent of their initial tensile strength and elongation values after being subjected to 720 hours xenon or carbon arc exposure in accordance with the test, Physical properties (ultimate elongation and tensile strength) – Weather (sunlight) resistance, in UL 2556, CSA C22.2 No. 2556, or NMX-J-553-ANCE. ~~In Canada: To be marked SR, unfilled XL material shall contain a minimum of 2.0 percent carbon black content, determined in accordance with the test, Carbon black content, in UL 2556, CSA C22.2 No. 2556, or NMX-E-034-SCFI, and having a particle size of 35 nm or less.~~ In Canada: To be marked SR, materials shall retain 80 percent of their initial tensile strength and elongation values after being subjected to 1000 hours xenon arc exposure in accordance with the test, Physical properties (ultimate elongation and tensile strength) – Weather (sunlight) resistance, in UL 2556 and CSA C22.2 No. 2556. In addition, following the 1000-hour xenon-arc exposure described above, the sample shall comply with the requirements in 5.11.1 at minus 25°C in accordance with the test, Cold Bend, in UL 2556 and CSA C22.2 No. 2556.
5.15.2		In the United States: XL material containing a minimum of 2.0 percent carbon black measured to a depth of at least 0.76 mm (0.030 in) need not be tested in accordance with 5.15.1. The carbon black content shall be determined in accordance with the test, Carbon black content, in UL 2556 and CSA C22.2 No. 2556, and shall have a particle size of 35 nm or less. The carbon black shall be C or higher with an agglomerate size of 2 or less as measured in accordance with ASTM D2663, Test Method B – Agglomerate Method. ~~In Canada: To be marked SR, materials other than unfilled XL shall retain 80 percent of their initial tensile strength and elongation values after being subjected to 720 h xenon or carbon arc exposure in accordance with the test, Physical properties (ultimate elongation and tensile strength) – Weather (sunlight) resistance, in UL 2556 and CSA C22.2 No. 2556.~~ In Canada, XL material containing a minimum of 2.0 percent carbon black measured to a depth of at least 0.76 mm (0.030 in) or to a depth of 50% of the min avg.

CLAUSE	VERDICT	COMMENT
		thickness whichever is greater need not be tested in accordance with 5.15.1. The carbon black content shall be determined in accordance with the test, Carbon black content, in UL 2556 and CSA C22.2 No. 2556, and shall have a particle size of 35 nm or less. In Mexico, this requirement does not apply.
5.16		**Oil resistance (optional)**
5.16.1		Oil resistance at 60°C To be marked PR I, ~~retention of tensile strength and elongation of the insulation, or jacket where used,~~ the tensile strength and elongation of the insulation of a non-jacketed insulated conductor, or the jacket of a jacketed conductor or cable shall not be less than 50 percent of the unconditioned value after immersion of the finished wire in IRM 902 oil for 96 hours at 100°C. Compliance shall be determined in accordance with ~~as described in~~ the test, Physical properties (ultimate elongation and tensile strength) – Oil resistance, in UL 2556, CSA C22.2 No. 2556, or NMX-J-194-ANCE.
5.16.2		Oil resistance at 75°C To be marked PR II, ~~retention of tensile strength and elongation of the insulation, or jacket where used~~, in addition to complying with the requirements of 5.14.1, the tensile strength and elongation of the insulation of a non-jacketed insulated conductor, or the jacket of a jacketed conductor or cable, shall not be less than 65 percent of the unconditioned value after immersion of the finished wire in IRM 902 oil for 60 d at 75°C ~~as described in~~. Compliance shall be determined in accordance with the test, Physical properties (ultimate elongation and tensile strength) – Oil resistance, in UL 2556, CSA C22.2 No. 2556, or NMX-J-194-ANCE.
5.17		**Gasoline and oil resistance (optional)** To be marked GR I or GR II, the insulation, ~~or jackets where used~~ of a non-jacketed insulated conductor, or the jacket of a jacketed conductor or cable, shall comply with the requirements of 5.16.1 or 5.16.2, respectively, and shall retain not less than 65 percent of their original tensile strength and elongation after 30 d immersion in water saturated with equal volumes of iso-octane and toluene (ASTM Reference Fuel C) maintained at 23 ±1°C, in accordance with the test, Physical properties (ultimate elongation and tensile strength) – Gasoline resistance, in UL 2556, CSA C22.2 No. 2556, or ~~NMX-J-556-ANCE~~ NMX-J-194-ANCE.

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5.22		**Evaluation of new materials – establishment of temperature rating** For the insulation and jacketing materials identified in 4.10, the projected elongation of the insulation and jacket shall not be less than 50 percent, and the projected tensile strength calculated for 300 d shall not be less than 2 MPa (300 lbf/in2) for jacketed insulation, and 4 MPa (600 lbf/in2) for unjacketed insulation and jackets, after being subjected to long-term aging in an air oven for a minimum of 150 d, in accordance with the test, Dry temperature rating of new materials (long-term aging test), in UL 2556, CSA C22.2 No. 2556, or NMX-J-556-ANCE.
6	Info	**Marking**
6.1	Info	**Marking on product**
6.1.5		***New clause added;*** **Conductor stranding** A wire employing other than ASTM Class B, C or SIW stranding shall be marked with the conductor class or classes and the number of strands. Example: 2 AWG (259w Class H)
7	Info	**Deep-Well Submersible Water-Pump Cable**
7.1		The construction of deep-well submersible water-pump cable shall consist of assemblies comprising two or more insulated circuit conductors having a wet rating and an optional insulated equipment-grounding conductor. The assemblies shall be with or without an overall jacket. ~~A low-temperature rating of –40°C shall be optional~~. Either twisted or parallel configurations shall be permitted. In the United States and Mexico, a low-temperature rating of minus 40°C shall be optional. In Canada, the minus 40°C rating is required as specified in the CE Code, Part I.