

Subject 854

October 19, 2018

SUMMARY OF TOPICS

The following changes in requirements to the Standard for Service-Entrance Cables, UL 854, are being proposed:

1. Sunlight Resistance Marking, Revised 1.6, 30.3, 40.7, and Deleted 40.8

STP BALLOTS AND ALL COMMENTS DUE: NOVEMBER 19, 2018

UL's goal is to have no interest category comprise more than one-third of the STP membership balance. To improve the current balance for STP 83, UL is looking for participants in the (list categories needed) interest categories. Definitions for these interest categories are available on the Standards STP Internet site:

<http://ulstandards.ul.com/develop-standards/participation/interest-categories/>

If you are interested in applying for STP 83 membership or are aware of potential candidates for this STP, please contact the STP Project Manager, Linda.L.Phinney@ul.com.

For your convenience in review, proposed additions to existing requirements are shown underlined and proposed deletions are shown ~~lined-out~~.

1. Sunlight Resistance Marking, Revised 1.6, 30.3, 40.7, and Deleted 40.8

RATIONALE

Proposal submitted by: Dave Mercier, Southwire Co.

This proposal aligns UL 854 with the Standard for Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables, UL 493, to allow Type SE and Type USE cables that pass the 300-h sunlight resistance test requirements of UL 854, clause 30.3, to be marked sunlight-resistant. Cables used in cable trays would continue to require compliance with clause 30.2 (720-h test). This proposal is based on marking requirements in UL 493 for underground feeder cables.

Clause 24.6 of UL 493 states that *Cable that complies with the 300-h test requirements in 23.1 may have a durable marking on the outside surface of the cable consisting of the words "sunlight resistant"*. Clause 24.7 states that *The designation "sunlight resistant, for CT use" or "sunlight resistant, for use in cable trays" may be marked on the outer surface of finished 14 – 6 AWG cables that contain two or three circuit conductors with or without a grounding conductor if finished cable containing two 14 or 12 AWG circuit conductors with or without a grounding conductor complies with one of the flame tests referenced in clause 14.1 and with the 720-h sunlight-resistance requirements in clause 23.1. Where the flame tests consisted of the FT4/IEEE 1202 Type of Flame Exposure, the cable may additionally be marked "FT4/IEEE 1202" or "FT4"; where used, this marking is to be spaced from the other cable markings required in this Standard.*

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Unmarked cables cause problems in the field when installers and inspectors look for a "sun res" marking and then must stop and research UL Standards to determine that SE/USE cables are required by the standard to be sunlight resistant. Proposals have been made to the NEC (NFPA 70, National Electrical Code) by the International Association of Electrical Inspectors (IAEI) to require sunlight resistance marking for cables or conductors that are for use exposed to direct sunlight. If the NEC proposal is accepted, it would inadvertently increase the minimum test requirements for UL 854 conductors and cables from 300 hours to 720 hours. As currently written, UL 854 only allows cables tested to clause 30.1 or clause 30.2 (720 hours) to be marked sunlight-resistant. Cables that meet clause 30.3 (300 hours) are intended for use exposed to direct sunlight, but cannot be marked even though they have a proven track record.

PROPOSAL

1.6 The outer surface of each single- and multiple-conductor cable that is marked for sunlight-resistance use and the outer surface of each Type SE cable that is marked for sunlight-resistance use in cable trays complies with a 720-h sunlight-resistance test. Each insulated conductor under an overall covering on such multiple-conductor cable complies with a 300-h sunlight-resistance test. All other cables ~~are not~~ marked "sunlight resistant" ~~however~~ comply with a 300-h or equivalent (see 30.4) sunlight-resistance test (each insulated conductor complies and, except in the case of submersible pump cable, any overall covering also complies).

30.3 With the exception that any overall covering from a submersible-pump cable is not to be tested, any overall covering and the individuals from all cables that are not tested to 30.1 or 30.2 ~~are not marked for sunlight-resistant use or for sunlight-resistant use in cable trays~~ shall comply with the following sunlight-resistance requirements ~~(see marking 40.8)~~. The ratio of the average tensile strength and ultimate elongation of five conditioned (300 h) specimens of the individual thermoset jacket or unjacketed insulation or the individual nylon or similar jacket and PVC insulation of a Type THHN or THWN conductor and either any overall thermoset jacket or the PVC finish to the average tensile strength and ultimate elongation of five unconditioned specimens of the same individual jacket or insulation and overall jacket or PVC finish shall be 0.85 or more (see 30.4) when the individual jacket or insulation and overall jacket or PVC finish are tested as outlined in the Carbon-Arc and Xenon-Arc Tests, Section 1200 of UL 1581.

40.7 The designation "sun-res" or sunlight-resistant" is marked on the outer surface of finished Type SE cables, jacketed multiple-conductor Type USE and USE-2 cables, and single conductor Type USE and USE-2 cables that comply with the 720 h sunlight-resistant test required in 30.1 or with the 300-h sunlight-resistance test required in 30.3.

40.8 ~~No marking indicative of sunlight resistance shall appear on or in a Type SE, USE, or USE-2 cable or on the tag, reel, or carton for such cable despite the fact that such cable complies with the 300-h sunlight-resistance test required in 30.3.~~

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