

Subject 514A

February 10, 2017

SUMMARY OF TOPICS

The following changes in requirements to the Standard for Metallic Outlet Boxes, UL 514A, are being proposed:

- 1. Addition of Requirement for Solid or Stranded Copper Equipment Grounding Conductor Lead.***
- 2. Correction in Explanatory or Approximate Value in Clause 12.8.2.1(c).***

STP BALLOTS AND ALL COMMENTS DUE: March 27, 2017

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

1. Addition of Requirement for Solid or Stranded Copper Equipment Grounding Conductor Lead.

RATIONALE

Proposal submitted by: Brian Rock, Hubbell Incorporated

The construction requirement for the minimum size of equipment grounding conductor (EGC) wire lead(s) has been in place since the Fourth Edition of UL 514 was revised in August 1969, with an effective date of September 1, 1971. This change also introduced the minimum sizes for the EGC wire as being SOLID conductor. This requirement could be ambiguously interpreted to mean that the wire lead could be ONLY of SOLID copper or aluminum. Prior to this revision of UL 514, there was no requirements for or mention of grounding wire leads in UL 514.

This revision to UL 514 originated from a revision to Table 250-95 of the 1968 NEC® (equivalent to today's NEC® Table 250.122) that increased the minimum EGC conductor sizes, effectively eliminating 16 AWG previously permitted in 1965 NEC® Table 250-95. (Relevant extracts from the General Session Proceedings for that revision to the 1968 NEC® are attached for reference.) The inclusion of "solid" in conjunction with this then-new requirement to UL 514 was incidental and unnecessary. As indicated in 250.118(1) of today's NEC® and NOM-001-SEDE, the EGC can be solid or stranded. Similarly, Rule 10-804(a) of CE Code, Part I, imposes no restriction on the use of stranded conductors for bonding conductors.

It is common for grounding wire leads provided with Listed/Certified floor boxes, poke-throughs, and other outlet boxes to be STRANDED Type THHN for U.S. and Mexico and STRANDED Type T90 NYLON for Canada. Therefore, this 8.1.7 requirement in standard NMJ-J-023/1-ANCE • CSA-C22.2 No. 18.1 • UL 514A should be revised so that no ambiguity exists about the acceptability of stranded grounding/bonding wire leads.

Based on shorter lengths used for grounding (bonding) wire leads and the tendency to unravel and fray in shorter lengths if uninsulated, it is proposed that lengths of stranded-conductor wire leads shorter than 61 cm (24 inches) be insulated.

PROPOSAL

8.1.7 A wire conductor provided as the means for grounding (bonding) shall be solid copper not smaller than 14 AWG (2.08 mm²) or solid aluminum not smaller than 12 AWG (3.31 mm²). The length shall not be less than 152 mm (6 in). A stranded wire type conductor that is factory-terminated to the box shall be captivated by upturned lugs, or the equivalent, to hold the wire strands under the head of the screw, or shall employ a factory-installed spade or ring terminal. A stranded wire type conductor less than 61 cm (24 in) in length shall be insulated and identified in accordance with 8.1.8.

2. Correction in Explanatory or Approximate Value in Clause 12.8.2.1(c).

RATIONALE

Proposal submitted by: David Gerstetter, UL LLC

This proposal corrects an error discovered in the explanatory or approximate values provided in Clause 12.8.2.1(c).

PROPOSAL

12.8.2.1 Six samples for each of the following conditions of each nonmetallic plug or other nonmetallic closure shall be tested as specified in Clause 12.8.3:

- a) As received,
- b) At room temperature after exposure for 168 h at a temperature of 90.0 ± 2.0 °C (194.0 ± 3.6 °F) in an air-circulating oven that has been preheated at full draft, and
- c) Immediately after exposure for 24 h to a temperature of minus 25.0 ± 1.0 °C (minus ~~4.0~~ 13.0 ± 1.8 °F).

Copyright © 2017 Underwriters Laboratories Inc.