



UL 5

Underwriters Laboratories Inc. Standard for Safety

Surface Metal Raceways and Fittings



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UL Standard for Safety for Surface Metal Raceways and Fittings, UL 5

Fourteenth Edition, Dated September 16, 2011

Summary of Topics

The following revisions are being issued as part of the fourteenth edition of UL 5:

Requirements for Ceiling-Suspended (Paddle) Fan Support

The revised requirements are substantially in accordance with Proposal(s) on this subject dated April 8, 2011.

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The following table lists the future effective date with the corresponding reference.

Future Effective Date	References
January 18, 2012	Paragraphs 4.4 and 20.7
March 20, 2013	Paragraphs 3.4, 5.2, 8.1, 11.1, 11.2, 20.1, 20.8, 21.6, 21.7, Sections 10 and 12 and Figure 12.1

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Fourteenth Edition

September 16, 2011

This ANSI/UL Standard for Safety consists of the Fourteenth edition including revisions through September 16, 2011.

The most recent designation of ANSI/UL 5 as an American National Standard (ANSI) occurred on September 16, 2011. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or effective date information.

The Department of Defense (DoD) has adopted UL 5 on July 9, 1984. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover surface metal raceways and fittings for use in accordance with the National Electrical Code, NFPA 70.

1.2 Raceways of the following thicknesses are intended to enclose circuits operating at potentials not exceeding 600 volts between conductors:

- a) Raceways that are entirely of metal at least 0.040 inch (1.02 mm) thick nominal and
- b) Raceways consisting of nonmetallic covers on metal bases of the thickness indicated in (a).

Thinner all-metal raceways or raceways of thinner metal bases with nonmetallic covers are intended to enclose circuits operating at potentials lower than 300 volts between conductors.

1.3 These requirements do not cover cable trays, wireways or nonmetallic raceways.

1.4 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, and that involves a risk of fire or of electric shock or injury to persons shall be evaluated using appropriate additional component and end-product requirements to maintain the level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this standard does not comply with this standard. Revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components used in the products covered by this standard.

2.1.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.2 Units of measurement

2.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

2.4 Installation

2.4.1 The method of installation, as outlined in the instructions accompanying the raceway and fittings, shall be practical and feasible under the conditions met in practice.

2.4.2 The raceway, fittings and any wiring devices or accessories are to be installed as intended and examined with regard to the feasibility of installation, as well as for compliance with the construction, performance, and marking requirements in this standard. Attention is to be given to items that require particular care on the part of the raceway installer.

2.5 Nonmetallic parts

2.5.1 A nonmetallic cover, fitting or other part of a metal raceway shall comply with the applicable requirements in the Standard for Nonmetallic Surface Raceways and Fittings, UL 5A.

3 Glossary

3.1 For the purposes of this standard, the following definitions apply:

3.2 **ACCESSORY** – A part that is added to a raceway system for a special purpose (for example, guards, hangers, or retainers).

3.3 **BOX, CEILING FAN** – A box that has been evaluated and determined to be acceptable as the support of a ceiling-suspended (paddle) fan.

Added 3.3 effective March 20, 2013

3.4 **BOX, FIXTURE** – A box that has been evaluated and determined to be acceptable as the support of a lighting fixture, lampholder, or other equipment intended for similar installation.

3.5 **FITTING** – A part used to connect, change direction, or terminate a raceway (for example, a transition coupler, an end cap, a corner, a tee, an adapter, or a box).

3.6 **NONMETALLIC** – A polymeric part.

3.7 **RACEWAY, SURFACE METAL** – A raceway for surface or pendant mounting with a metal base and a metal or nonmetallic cover.

3.8 RACEWAY SYSTEM – A system consisting of a surface metal raceway, associated fittings, and possibly wiring devices and accessories.

3.9 WIRING DEVICE – A part of an electrical system that is intended to carry, provide a means of connection to, or control of, electrical energy within a raceway system (for example, switches or receptacles).

CONSTRUCTION

4 General

4.1 A raceway system shall be constructed to facilitate compliance with the requirements for the installation of insulated wires and cables as given in the National Electrical Code, NFPA 70.

4.2 Each element of a raceway system shall comply with the requirements for the construction, performance, and use of that element.

4.3 A raceway shall consist of one or more pieces formed and constructed to make the raceway readily distinguishable from electrical conduit, electrical metallic tubing, electrical nonmetallic tubing, and other raceway systems.

4.4 A raceway system shall provide a complete enclosure that protects the wires installed therein against damage. The complete system, when installed as intended, shall comply with the following:

- a) There shall not be any openings that exceed 1/16 inch (1.59 mm) in width on surfaces that are accessible following installation of the system.
- b) A knockout or break-away tab shall completely cover the opening in which it is located, and the clearance between the knockout or break-away tab and the opening shall not be more than 0.030 inch (0.76 mm).
- c) Mounting holes having a maximum diameter of 9/32 inch (7.1 mm), or slotted openings for mounting of one dimension not larger than 5/8 inch (15.9 mm) and the other dimension not larger than 1/8 inch (3.2 mm), provided on the raceway base or fitting base surface that is installed flush with the mounting surface, are not prohibited.
- d) A partition in a raceway system shall not have any openings through which wires are capable of being passed, intentionally or otherwise, from one compartment to another.

Exception No. 1: A gap of 1/8 inch (3.2 mm) shall be used only when means is provided to completely contain conductors in their individual compartments, such as wire retaining clips.

Exception No. 2: On lengths of surface metal raceway provided with openings that are intended for wiring devices, fittings or accessories, those openings are not required to be blocked by knockouts or break-away tabs where the installation instructions provided with that surface metal raceway comply with 20.7.

4.4 effective January 18, 2012

4.5 The interior surface of the raceway system shall have a smooth finish that is free from projections, sharp edges, burrs, fins, and other faults damaging to wires when installed as intended.

4.6 A raceway shall be provided with means for securing it to the mounting surface at intervals of not more than 4 feet (1.2 m).

4.7 Where the base is intended to be secured to the mounting surface by screws or bolts extending from the inside, the arrangement shall not result in damage to the conductors.

4.8 Mounting hardware such as screws or bolts shall either be packaged with the raceway, or the installation instructions packaged with the raceway or fittings shall specify the appropriate mounting means. See 20.3.

4.9 An adhesive strip, when provided on the raceway, shall serve only as a positioning aid during the installation process. The raceway shall also have provisions for mechanical fastening as required in 4.6 – 4.8.

Exception: An adhesive strip provided on a raceway shall be used as the sole means of securement only when the raceway is marked for use with Class 2 circuits only, as defined in Article 725 of the National Electrical Code, NFPA 70.

4.10 Provision shall be made for securing the cover to the base of a two-piece raceway at intervals of not more than 4 feet (1.2 m). A cover shall be held in place by continuous grooves, flanges, or similar constructions only when it is securely fixed in place. See 4.12.

4.11 For raceways using conductors larger than 6 AWG (13.30 mm²), the Short Circuit Test, Section 19, shall be performed on conductors in the raceway to determine whether the cover is secure.

4.12 Raceway or fitting covers shall be constructed such that the use of a tool (such as the prying action of a screwdriver) or two simultaneous deliberate actions are required for their removal for gaining access to internal areas of the raceway after installation.

4.13 A partition provided in a raceway or fitting shall be secured in position. The partition shall have the strength required to support the maximum wire fill by weight.