



UL 1773

STANDARD FOR SAFETY Termination Boxes

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UL Standard for Safety for Termination Boxes, UL 1773

Sixth Edition, Dated October 9, 2018

Summary of Topics

This new edition of ANSI/UL 1773 includes the following changes in requirements:

Addition of Compact Stranded AA-8000 Aluminum Alloy Conductors To Tables 9.1, 9.2, and 9.3 for Minimum Wire Bending Space at Terminals

Removal of Requirements for Inlet Assemblies for Cord Connections of Generators Used in Conjunction with Transfer Switch Equipment

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated May 4, 2018, July 27, 2018, and August 17, 2018.

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ANSI/UL 1773-2018

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UL 1773

Standard for Termination Boxes

Previous numbered and unnumbered editions of standards covering termination boxes have been published since 1988.

First Edition – April, 1988
Second Edition – May, 1993
Third Edition – April, 1998
Fourth Edition – August, 2007
Fifth Edition – October, 2011

Sixth Edition

October 9, 2018

This ANSI/UL Standard for Safety consists of the Sixth Edition.

The most recent designation of ANSI/UL 1773 as an American National Standard (ANSI) occurred on October 9, 2018. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

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 <https://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover termination boxes rated 600 V or less that consist of lengths of bus bars, terminal strips, or terminal blocks with provision for wire connectors to accommodate incoming or outgoing conductors or both and are intended to be used in accordance with the National Electrical Code, NFPA 70. Termination boxes are investigated for use on the line or load side of service equipment.

1.2 The incoming and outgoing conductors may be routed through knockouts or openings in the box for cable, conduit, or electrical metallic tubing. The termination box may also have special openings to match with similar openings in other equipment such as meter sockets, panelboards, switch or circuit breaker enclosures, wireways, and the like.

1.3 These requirements also cover termination bases to be field installed in termination boxes and termination boxes in which termination bases are to be field installed.

1.4 This category covers mounting posts and pedestals rated 600 V ac or less intended to serve as a raceway for underground wiring that is being brought above grade to feed an outdoor electrical distribution device, such as a power outlet, panelboard, meter socket, circuit breaker enclosure or the like. They are intended to support the distribution device, which is installed either in the factory or in the field. They may contain electrical termination points for underground wiring and for wiring to the distribution device.

1.5 This standard specifically does not apply to:

- a) Equipment connected only by bus bars for both input and output circuits;
- b) Equipment containing switching devices, relays, or overcurrent protective devices;
- c) Busway fittings known as "End Cable Tap Boxes" which are covered by the Standard for Busways, UL 857; and
- d) Inlet assemblies for cord connection of generators used in conjunction with transfer switch equipment which are covered by the Standard for Transfer Switch Equipment, UL 1008, Annex J, Inlet Assemblies for Transfer Switch Equipment.

2 Components

2.1 Except as indicated in 2.2, 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 generally used in the products covered by this standard.

2.2 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.

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

2.4 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.

3 Units of Measurement

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

4 Undated References

4.1 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.

5 Glossary

5.1 For the purpose of this standard, the following definition applies.

5.2 **TERMINATION BASE** – An assembly mounted as a common structure constituting all the elements of a termination box except for the enclosure and intended for use in one or more specific termination boxes.

CONSTRUCTION

6 Enclosure

6.1 General

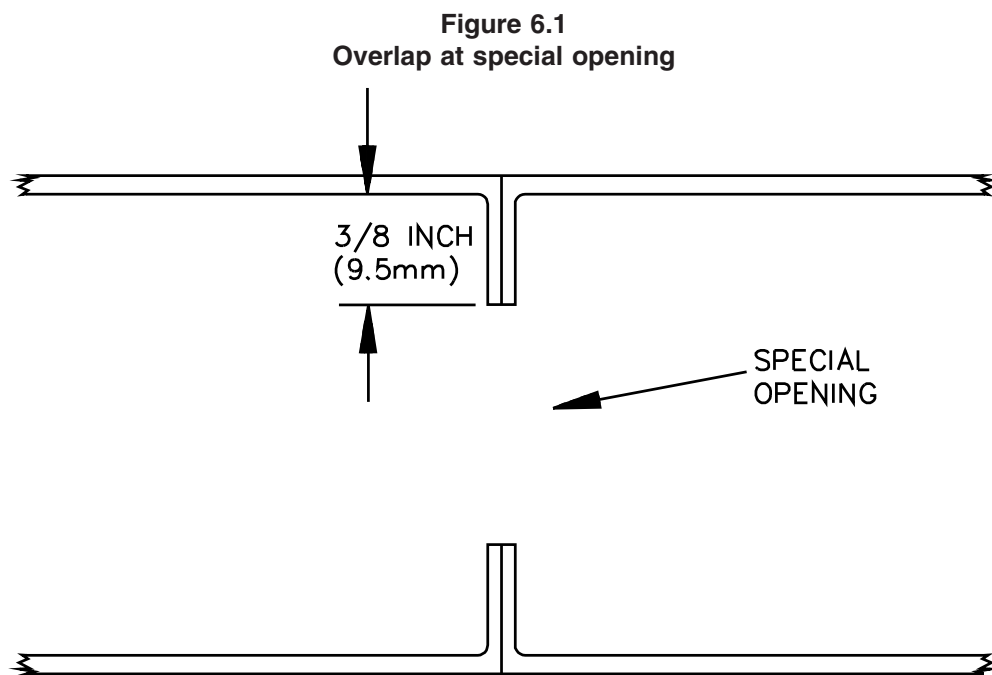
6.1.1 Unless specified otherwise in this standard, a termination box enclosure shall comply with the Standard for Enclosures for Electrical Equipment, Non-Environmental Considerations, UL 50.

Exception No. 1: A termination box enclosure may be constructed with a special opening for connection to other equipment if the termination box is marked as specified in 28.5.1 and the construction complies with 6.1.2.

Exception No. 2: A termination box intended for floor mounting or of a post or pedestal type may have an open bottom.

6.1.2 A termination box provided with special openings shall be provided with:

- Mating surfaces of at least 3/8 inch (9.5 mm) on each side of the opening as shown in Figure 6.1.
- Means to close the end of an enclosure with an available fitting marked for use with the termination box.



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6.2 Conduit connections

6.2.1 A nonmetallic enclosure shall have a bonding means provided to maintain continuity of grounding between all conduit openings. For a construction having a threaded opening or nipple for metal conduit, the bonding means shall be assembled to the enclosure. For a construction having a non-threaded opening, the bonding means may be provided as separate parts for field installation. An enclosure intended for field assembly of the bonding means shall be provided with instructions for installation. The instructions shall include the identification of the parts and their method of installation.

Exception: The bonding means need not be provided in a nonmetallic enclosure not intended for use with a metallic conduit system if the enclosure is marked as specified in 28.8.1.

6.2.2 A nonmetallic enclosure having provision for connection of rigid metallic conduit or rigid nonmetallic conduit shall be investigated for such use as specified in the Conduit Connection Tests, Section 22.

6.3 Provision for support

6.3.1 Provision for support or other mounting means for a nonmetallic termination box shall be outside the termination box, unless the termination box is constructed such that the conductors within the box cannot contact the supporting screws.

6.3.2 So that contact between a supporting screw and conductors within a box will be prevented as required in 6.3.1, a hole in a box for a screw shall be located in a recess constructed such that there will be a spacing of not less than 1/32 inch (0.8 mm) between the plane of the top of the recess and the head of the largest screw that is provided with the box. If a screw is not provided with a box, this spacing shall be measured using the largest:

- a) Round-head screw, specified in Table 6.1, that can be inserted in a hole that is not chamfered; or
- b) Flat-head screw that can be inserted in a hole that is chamfered.

Table 6.1
Supporting-screw hole dimensions

Nominal screw size	Diameter of hole,		Minimum dimensions of recess			
			Diameter,		Depth,	
	inch	(mm)	inch	(mm)	inch	(mm)
6	0.138	(3.51)	1/4	(6.4)	4/32	(3.2)
8	0.164	(4.17)	19/64	(7.5)	9/64	(3.6)
10	0.190	(4.83)	11/32	(8.7)	5/32	(4.0)
12	0.216	(5.49)	25/64	(9.9)	11/64	(4.4)
1/4	0.250	(6.35)	29/64	(11.5)	13/64	(5.2)
5/16	0.313	(7.95)	9/16	(14.3)	15/64	(6.0)

6.4 Enclosures containing inlet assemblies

6.4.1 All inlet assemblies shall be installed within the termination box such that the enclosure completely encloses all uninsulated parts, both with and without the inlet cables connected to the assembly.

6.4.2 Where used to connect inlet conductors, enclosures shall separate inlet conductors from internal terminal box wiring. Access to the inlet conductors shall be possible without exposing the internal terminal box conductors or uninsulated live parts.

6.4.3 The enclosure shall be such that when the covers and doors are properly secured, accidental contact with the body of all separable connectors is prevented.

6.4.4 Access panels and doors provided for the attachment and removal of inlet conductors shall be secured by means of a latching mechanism incorporating a lock and key, a fastener requiring the use of a tool, or shall have provision for locking.

6.4.5 Where intended for outdoor use, the enclosure shall comply with the requirements of the Standard for Enclosures for Electrical Equipment, Non-Environmental Considerations, UL 50 and the Standard for Electrical Equipment, Environmental Considerations, UL 50E for the intended use, with and without the inlet conductors connected.

6.4.6 Marking and instructions on the exterior of an enclosure shall be permanent and suitable for the intended use. See Markings, Section 28.

7 Mounting Post or Pedestal

7.1 General

7.1.1 A mounting post or pedestal shall not be less than 12 square inches (77 cm²) in cross-sectional area and 2-1/2 inches (63.5 mm) deep, and at least three sides shall be fabricated of galvanized steel not less than 0.070 inch (1.8 mm) thick.

Exception: A mounting post or pedestal that complies with the Torque Deformation Test, Section 19, and the Beam Loading Deflection Test, Section 20, need not be 12 square inches in cross-sectional area or less than 2-1/2 inches deep, and may be fabricated of galvanized steel not less than 0.056 inch (1.42 mm) thick.

7.1.2 That portion of a post located below grade level and up to 12 inches (305 mm) above grade level shall be painted on both the inside and outside surfaces in addition to being galvanized.

7.1.3 Where intended for outdoor use, the mounting post or pedestal shall comply with the requirements of the Standard for Enclosures for Electrical Equipment, Non-Environmental Considerations, UL 50 and the Standard for Electrical Equipment, Environmental Considerations, UL 50E for the intended use. Mounting posts or pedestals with an integral door or cover intended to provide environmental protection of factory or field installed receptacles shall provide environmental protection with and without attachment plugs connected. See Rain and Splash Test specified in Section 23.

7.2 Cover

7.2.1 A cover or cap for a mounting post or pedestal shall be of metal not thinner than as required in 7.1.1, or nonmetallic material complying with the Standard for Enclosures for Electrical Equipment, Non-Environmental Considerations, UL 50. A cover or cap fabricated from 0.056 inch (1.4 mm) thick steel may be any length provided its width does not exceed 10 inches (254 mm).

Exception: A cover or cap provided on a mounting post or pedestal to close unused openings intended to accommodate a field-installed unit may be thinner than 0.056 inch if the cover or cap complies with the deflection test described in the Deflection Test, Section 21.

7.3 Grade level

7.3.1 The distance between the marked final grade level of a mounting post as covered in 28.7.1 or the bottom of the base of a mounting pedestal and the lowest live part shall not be less than 12 inches (305 mm).

7.4 Wire opening

7.4.1 The opening provided in the base of a mounting post for the entrance of underground wiring shall be rolled, flanged, or equipped with a bushing so that there will be a smoothly rounded surface against which the cables can bear. The upper edge of the opening shall be at least 18 inches (457 mm) below the marked final grade level.

7.5 Instructions

7.5.1 A mounting post or pedestal shall be provided with instructions indicating the correct mounting procedure.

7.6 Mounting provision

7.6.1 A pedestal shall have mounting holes or similar provision in the base for securing the pedestal to a concrete slab. Aluminum in a pedestal enclosure shall not be in contact with the concrete mounting pad. A metallic or nonmetallic coating used to separate aluminum from a concrete pad shall be tested to demonstrate resistance to corrosion not less than that of galvanized (G90 zinc coating) steel that is 0.061 inch (1.55 mm) thick.

7.7 Luminaires (illuminated mounting posts and pedestals)

7.7.1 A mounting post or pedestal provided with luminaire(s) shall comply with the requirements specified in 7.7.2, and the applicable requirements in Appendix A.

7.7.2 Luminaire(s) that may be supplied by a source separate from equipment intended to be mounted to the post or pedestal shall comply with the following:

- a) Luminaire wiring compartment(s) and any lamp(s) that are intended for field replacement shall be separated from other wiring compartments provided in the post or pedestal by a barrier to provide separation of circuits.
- b) The mounting post or pedestal shall be provided with a field installable label that specifies that the equipment may be supplied by multiple sources. See 28.10.2.

8 Ventilation Openings

8.1 If ventilation openings are provided, they shall comply with 8.2 – 8.10.

8.2 Ventilation openings shall be guarded so that there is no direct access to a live part as covered in 8.3 and 8.4.

8.3 Ventilation openings shall be:

- a) Screened or louvered openings with internal barriers; or
- b) Hoods or stacks with labyrinth air passages.

8.4 A barrier shall be of such dimensions and located so that a straight line drawn from any live part past the edge of the barrier will intersect the enclosure minimum 1/4 inch (6.4 mm) from the edge of an opening.

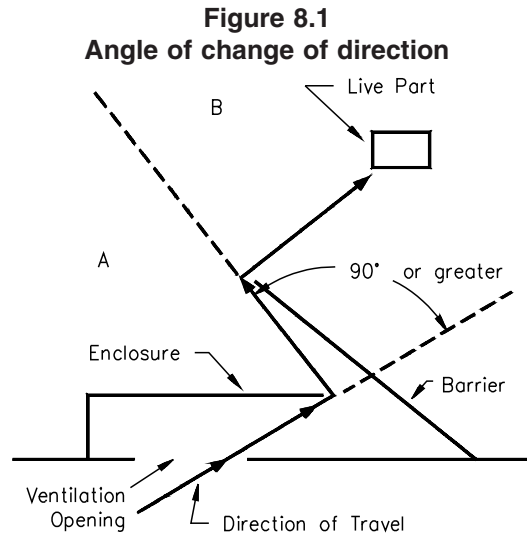
8.5 A ventilation opening – slot, louver, or the like – shall be protected by one or more baffles, barriers, or other obstructions of such dimensions and locations that any access path to a live part requires at least two changes of direction, one of which involves an angle of 90 degrees or more from a straight line, as shown in Figure 8.1. In addition, if the minor dimension of a ventilation opening is larger than 1/4 inch (6.4 mm), it shall be protected by a screen having a minor dimension not larger than 1/4 inch.

8.6 The size, shape, and location of a screened opening shall not weaken the overall enclosure.

8.7 The wires of a screen required to protect a ventilation opening shall not be smaller than 16 AWG (1.3 mm²) and the openings in the screen shall not exceed 1/4 inch (6.4 mm) in any dimension.

8.8 Perforated sheet steel or expanded-steel mesh shall not be less than 0.042 inch (1.07 mm) thick if uncoated, or 0.045 inch (1.14 mm) thick if zinc-coated, if the mesh openings or perforations are 1/2 square inch (3.23 cm²) or less in area. For larger openings, the steel or mesh shall not be less than 0.080 inch (2.03 mm) thick if uncoated or 0.084 inch (2.13 mm) thick if zinc-coated.

Exception: If deflection of the expanded-steel mesh will not alter the clearance between the uninsulated live parts and grounded metal so as to reduce spacings to values below the minimum values specified in Table 15.1 or Table 15.2, as applicable, expanded-steel mesh may be made of minimum 0.024 inch (0.61 mm) thick sheet steel if uncoated or 0.028 inch (0.71 mm) thick sheet steel if zinc-coated.



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A – No live parts permitted in this area.

B – Live parts acceptable this side of barrier.

8.9 The width of a ventilation louver in an enclosure shall be such that at least 1/6 of the enclosure material will remain at each end of the louver.

8.10 A separate louvered panel that is riveted or welded in place over a ventilation opening in the enclosure shall not be less than 0.032 inch (0.81 mm) thick sheet steel.

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