

enameled, or otherwise properly coated inside and out to prevent corrosion.

Informational Note: See 300.6 for limitation in the use of boxes and fittings protected from corrosion solely by enamel.

**(B) Thickness of Metal.** Sheet steel boxes not over 1650 cm<sup>3</sup> (100 in.<sup>3</sup>) in size shall be made from steel not less than 1.59 mm (0.0625 in.) thick. The wall of a malleable iron box or conduit body and a die-cast or permanent-mold cast aluminum, brass, bronze, or zinc box or conduit body shall not be less than 2.38 mm ( $\frac{3}{32}$  in.) thick. Other cast metal boxes or conduit bodies shall have a wall thickness not less than 3.17 mm ( $\frac{1}{8}$  in.).

*Exception No. 1: Listed boxes and conduit bodies shown to have equivalent strength and characteristics shall be permitted to be made of thinner or other metals.*

*Exception No. 2: The walls of listed short radius conduit bodies, as covered in 314.16(C)(2), shall be permitted to be made of thinner metal.*

**(C) Metal Boxes Over 1650 cm<sup>3</sup> (100 in.<sup>3</sup>).** Metal boxes over 1650 cm<sup>3</sup> (100 in.<sup>3</sup>) in size shall be constructed so as to be of ample strength and rigidity. If of sheet steel, the metal thickness shall not be less than 1.35 mm (0.053 in.) uncoated.

**(D) Equipment Grounding Conductor Provisions.** A means shall be provided in each metal box for the connection of an equipment grounding conductor. The means shall be permitted to be a tapped hole or equivalent.

For device boxes and other standard outlet boxes, the means for connecting the equipment grounding conductor is usually provided by the box manufacturer in the form of a 10-32 tapped hole marked "GR" or "GRD," or the equivalent symbol ( $\downarrow$ ), next to the hole.

**314.101 Covers.** Metal covers shall be of the same material as the box or conduit body with which they are used, or they shall be lined with firmly attached insulating material that is not less than 0.79 mm ( $\frac{1}{32}$  in.) thick, or they shall be listed for the purpose. Metal covers shall be the same thickness as the boxes or conduit body for which they are used, or they shall be listed for the purpose. Covers of porcelain or other approved insulating materials shall be permitted if of such form and thickness as to afford the required protection and strength.

**Δ 314.102 Bushings.** Covers of outlet boxes and conduit bodies having holes through which flexible cord pendants pass shall be provided with approved bushings or shall have smooth, well-rounded surfaces on which the cord will bear. Where individual conductors pass through a metal cover, a separate hole equipped with a bushing of suitable insulating material shall be provided for each conductor. Such separate holes shall be connected by a slot as required by 300.20.

**314.103 Nonmetallic Boxes.** Provisions for supports or other mounting means for nonmetallic boxes shall be outside of the box, or the box shall be constructed so as to prevent contact between the conductors in the box and the supporting screws.

**314.104 Marking.** All boxes and conduit bodies, covers, extension rings, plaster rings, and the like shall be durably and legibly marked with the manufacturer's name or trademark.

#### ARTICLE

### 315

## Medium Voltage Conductors, Cable, Cable Joints, and Cable Terminations

### Part I. General

**315.1 Scope.** This article covers the use, installation, construction specifications, and ampacities for Type MV medium voltage conductors, cable, cable joints, and cable terminations. This article includes voltages from 2001 volts to 35,000 volts ac, nominal and 2001 volts to 2500 volts dc, nominal.

This article is new for the 2023 edition. It consolidates medium voltage requirements that previously appeared in Article 311. Type MV cables are rated 2001 to 35,000 volts. MV cables installed in underground installations must comply with 305.15.

#### See also

**315.36** and **315.44** for shielding requirements

**315.6 Listing Requirements.** Type MV cables, type MV cable joints, type MV cable terminations, connectors, and associated fittings shall be listed. The listing requirement for Type MV cable joints, cable terminations, and connectors shall be effective January 1, 2026.

### Part II. Construction Specifications

**315.10 Constructions and Applications.** Type MV cables shall comply with the applicable provisions in 315.10(A) through (C).

**(A) Conductor Application and Insulation.** Conductor application and insulation shall comply with Table 315.10(A).

**(B) Thickness of Insulation and Jacket for Nonshielded Insulated Conductors.** Thickness of insulation and jacket for nonshielded solid dielectric insulated conductors rated 2001 volts to 5000 volts shall comply with Table 315.10(B).

**(C) Thickness of Insulation for Shielded Insulated Conductors.** Thickness of insulation for shielded solid dielectric insulated conductors rated 2001 volts to 35,000 volts shall comply with Table 315.10(C) and 315.10(C)(1) through (C)(3).

**(1) 100 Percent Insulation Level.** Cables shall be permitted to be applied where the system is provided with relay protection