(4) The environmental operating temperature range shall be identified.
(5) Where used in one or more of the following conditions Type MV cable joints and terminations shall be identified for the use:
   a. Underground chambers
   b. Tunnels
   c. Conduits
   d. Manholes
   e. Vaults
(6) Corrosive conditions where exposed to oils, greases, vapors, gases, fumes, liquids, or other substances having a deleterious effect on the joint or termination shall be of a type suitable for the application.
(7) In cable trays, where identified for use, in accordance with 392.10, 392.20(B), (C) and (D), 392.22(C), 392.30(B)(1), 392.46, 392.56, and 392.60.

Informational Note No. 1: The "uses permitted" is not an all-inclusive list.

Informational Note No. 2: See IEEE-404, *IEEE Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2.5kV to 500kV*, for more information on cable joints. Cable joints are often referred to as splices. However, the term *splice* includes many other applications not included in the definition of a cable joint.

Informational Note No. 3: See IEEE-48, *IEEE Standard for Test Procedures and Requirements for Alternating-Current Cable Terminations Used on Shielded Cables Having Laminated Insulation Rated 2.5 kV through 765 kV or Extruded Insulation Rated 2.5 kV through 500 kV*, for information on terminations. Type MV cable terminations include terminations used to connect directly to equipment or insulators.

Informational Note No. 4: See IEEE-386, *IEEE Standard for Separable Insulated Connector Systems for Power Distribution Systems Rated 2.5kV through 35 kV*, and IEEE-1215, *IEEE Guide for the Application of Separable Insulated Connectors*, for more information on separable insulated connectors. Type MV cable terminations also include separable insulated connectors, which are a type of pluggable cable termination and can be used for connection to equipment, such as switchgear or transformers. A separable connector has a matching interface that the separable connector plugs into on the equipment, such as switchgear or transformers. Separable connectors can also be ganged together to form a distribution junction using specialized junction brackets.

Type MV cables intended for installation in cable trays in accordance with Article 392 are marked "For CT Use" or "For Use in Cable Trays." Where marked "MV or MC," the cable complies with the crush and impact rating associated with MC cable. Cable marked "MV or MC" is permitted to be installed in accordance with Article 330 as well as Article 392.

315.36 Direct-Burial Conductors. Type MV conductors and cables used for direct burial applications shall be shielded, identified for such use, and installed in accordance with 305.15.

Exception No. 1: Nonshielded multiconductor cables rated 2001 volts to 2400 volts shall be permitted if the cable has an overall metallic sheath or armor.

The metallic shield, sheath, or armor shall be connected to a grounding electrode conductor, a grounding busbar, or a grounding electrode.

Exception No. 2: Airfield lighting cable used in series circuits that are rated up to 5000 volts and are powered by regulators shall be permitted to be nonshielded.

Informational Note to Exception No. 2: Federal Aviation Administration (FAA) Advisory Circulars (ACs) provide additional practices and methods for airport lighting.

315.40 Support. Type MV cable terminated in equipment or installed in pull boxes or vaults shall be secured and supported by metallic or nonmetallic supports suitable to withstand the weight by cable ties listed and identified for securement and support, or other approved means, at intervals not exceeding 1.5 m (5 ft) from terminations or a maximum of 1.8 m (6 ft) between supports.

Δ **315.44 Shielding.** Nonshielded, ozone-resistant insulated conductors with a maximum phase-to-phase voltage of 5000 volts shall be permitted in Type MC cables in industrial establishments where the conditions of maintenance and supervision ensure that only qualified persons service the installation. For other establishments, solid dielectric insulated conductors operated above 2000 volts in permanent installations shall have ozone-resistant insulation and shall be shielded. All metallic insulation shields shall be connected to a grounding electrode conductor, a grounding busbar, an equipment grounding conductor, or a grounding electrode. Equipment grounding conductors installed with circuits using medium voltage cables shall be sized according to 250.190(C).

The construction of metal-armored cable provides enhanced reliability because the conductors have a concentric lay orientation and their insulation is protected from damage during installation. Nonshielded conductors within metal raceways do not provide the same level of reliability. Conductors-into-conduit installation is inconsistent and cannot guarantee that insulation will not be damaged nor that cables will be in concentric lay orientation.

Solid dielectric insulated conductors that are permanently installed and that operate at greater than 2000 volts are required to have ozone-resistant insulation and must be shielded with a grounded metallic shield. Shielding is accomplished by applying a metal tape or nonmetallic semiconducting tape around the conductor surface to prevent corona from forming and to reduce high-voltage stresses.

Corona is a faint glow adjacent to the surface of the electrical conductor at high voltage. If high-voltage stresses and a charging current are flowing between the conductor and ground (usually due to moisture), the surrounding atmosphere is ionized, and ozone — generated by an electric discharge in ordinary oxygen or air — is formed and will attack the conductor jacket and insulation, eventually breaking them down. The shield is at ground potential; therefore, no voltage above ground is present on the jacket outside the shield, thus preventing a discharge from the jacket and the subsequent formation of ozone.