

## Specifications – Metal Clad Cable and Aluminum Sheathed Cable

“Metal Clad Cable Type MC is a factory assembly of one or more conductors, each individually insulated and enclosed in a metallic sheath of interlocking tape, or a smooth or corrugated tube”.

Metal Clad Cable Type MC is rated for use up to 5,000 volts. The National Electrical Code permits the use of metallic sheath as an equipment-grounding conductor.

Metal Clad Cables are available with a variety of phase conductor insulations such as cross-linked polyethylene, and silicone rubber ethylene propylene, depending on the rated temperature of conductors and working potential. The metallic sheath can be made with galvanized steel, aluminum, copper or bronze. A special outer covering such as PVC or neoprene over the metallic sheath is usually provided for environmental protection.

### Usage

Metal-clad cable is not permitted in locations where it could be subject to physical damage. Metal-clad cable can be used exposed, concealed, in a cable tray, in any approved raceway, and with minor exceptions, in hazardous locations. Type MC cable can also be used for services, feeders, branch circuits, power, lighting, or control and signal circuits.

Use of the metal-clad cable is permitted in wet locations, or exposed to destructive corrosive conditions, or if it can be directly buried in earth, concrete or exposed to cinder fills, strong chlorides, caustic alkalis, vapours, chlorine or hydrochloric acids, provided the construction of cable, the conductors within the metallic sheath, the metallic sheath and protective cover over metallic sheath comply with requirements enumerated in Sec. 330-10 of the National Electrical Code.

Bend radius restrictions are dependent on the size of the cable and the type of sheath, i.e. smooth, interlocked armour, corrugated sheath or shielded conductors, and varies from 7 to 15 times the external diameter of the cable.

NEC Article 330 NEC 2008 requires that approved fittings be used for cable termination. Where single-conductor cables carrying alternating current enter a ferrous metal box or enclosure, procedures described in NEC Section 300-31 must be followed to reduce the effects of heating due to induced currents. These procedures include recommended arrangements of conductors, cutting of slots in the metal between individual conductor holes, passing of conductors through insulating walls, or the use of nonmagnetic aluminum sheathed cable and aluminum terminating fittings.

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Please refer to the following for further details and complete information:

1. NEC Article 330, Metal Clad Cable (Type MC)
2. U.L. 4, ANSI C33.9, Safety Standards for Type MC Metal Clad Cable
3. U.L. 514, ANSI C33.84, Safety Standards for Outlet Boxes and Fittings
4. W-F-406, Federal Specification. Fittings for Cable, Power Electrical and Conduit Metal, Flexible
5. NEMA FM-1, Standards Publication. Fittings and Supports for Conduit and Cable Assemblies

