

## Teck cable fittings

### Teck cable specifications

The Teck cable name is derived from one of the first users, the Teck-Hughes Gold Mines in Kirkland Lake, Ontario. Teck 90 is the CSA type designation. The trade designation is armored cable.

Teck cables with a working potential up to 5,000 volts are manufactured in accordance with CSA Standard C22.2 No. 131. The cables are provided with a bare ground conductor and an optional outer jacket. Depending on the phase conductor insulation, the cables are designated as Teck 90 (X-LINK) when the insulation is cross-linked polyethylene, and Teck 90 (EP) when it is ethylene propylene. Both cable types are rated for 90° C service (dry location) and 75° C (wet locations). When Teck cable is suitable for installation at a temperature down to minus 40° C, it is marked “Teck 90 (X-LINK) Minus 40” or “Teck 90 (EP) Minus 40.”

Teck cable with a working potential over 5,000 volts is manufactured in accordance with IPCEA standards and is certified by CSA. Cables are provided with or without ground wire, as required.

Teck cable with an outer jacket may be used for exposed or concealed wiring in wet or dry locations, indoors and outdoors, and in corrosive environments. It is suitable for use in ventilated, non-ventilated and ladder type cable troughs, and in ventilated flexible cableways in both dry and wet locations. It is also suitable for direct earth burial and for Class II, Division 2; and Class III, Divisions 1 and 2 hazardous locations, as per the Canadian Electrical Code.

Flexibility and ease of installation are key features of Teck cable. The absence of dead air space within the cable increases heat transfer and minimizes condensation. The overall protective covering provides good environmental protection. Bend radius for permanent training during installation usually varies between 7 to 12 times the cable diameter, depending on the construction of the cable and the manufacturer's recommendations. Larger radius bends are required for other conditions.

#### Electrical Code Requirements

Section 12-3022 of the Canadian Electrical Code requires that the terminating fittings used must provide adequate strain relief to terminal connections and ensure electrical continuity without injury to the nonmetallic sheath. Continuity is mandatory whether or not the armour is used as a grounding conductor. Except for dry locations that are free from corrosive atmosphere, the nonmetallic jacket cannot be stripped back to the point where the armour is exposed after installation.

Where single conductor cables carrying 200 amps or more enter metal boxes through separate openings, certain precautions are required to prevent overheating of the metal by induction. Use of nonferrous or nonmetallic box fittings, locknuts and bushings and installation of non-magnetic panel inserts is suggested in the code. Please refer to the following for further details and complete information:

1. CEC Section 12, Wiring Methods; CEC Section 4, Conductors
2. CSA C22.2 No. 131 and 131S (Supplement #1), Safety Standard for Type Teck Cable
3. CSA C22.2 No. 18.3, Safety Standards for Conduit, Pipes and Cables

#### Please Note:

The excerpts and other material herein, whether relating to the National Electrical Code, the Underwriters Laboratories, Inc. listing, to industry practice or otherwise, are not intended to provide all relevant information required for use and installation. Reference to original or primary source material and data is mandatory before any application or use is made of the product.

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#### 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 V. 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 metal clad cable is permitted in wet locations, or exposed to destructive corrosive conditions. 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 non-magnetic 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. UL 4, ANSI C33.9, Safety Standards for Type MC Metal Clad Cable
3. UL 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