

The electrical equipment required in Class II locations is different from that required for Class I locations. Class II equipment is designed to prevent the ignition of layers of dust, which can also cause an increase in equipment operating temperature, while Class I equipment does not address this concern. To protect against explosions in hazardous locations, all electrical equipment exposed to the hazardous atmosphere must be suitable for the location. Equipment suitable for one class and group is not necessarily suitable for any other class and group.

Class I equipment is not necessarily suitable for a Class II location because the hazard contemplated in the equipment design is different. Grain dust, for example, ignites at a temperature lower than that of most flammable vapors. Motors listed for use in Class I locations might not have dust shields on the bearings to prevent entrance of dust into the bearing race, thereby causing overheating of the bearing and resulting in ignition of dust on the motor. Class I equipment is not designed for dust layering. Dust-ignitionproof enclosures are not required to be explosionproof. Explosionproof enclosures are not necessarily dust-ignitionproof.

502.6 Zone Equipment. Equipment listed and marked in accordance with 506.9(C)(2) for Zone 20 locations shall be permitted in Class II, Division 1 locations for the same dust atmosphere; and with a suitable temperature class.

Equipment listed and marked in accordance with 506.9(C)(2) for Zone 20, 21, or 22 locations shall be permitted in Class II, Division 2 locations for the same dust atmosphere and with a suitable temperature class.

Part II. Wiring

502.10 Wiring Methods. Wiring methods shall comply with 502.10(A) or (B).

Informational Note: See Article 100 for the definition of restricted industrial establishment [as applied to hazardous (classified) locations].

(A) Class II, Division 1.

Δ **(1) General.** In Class II, Division 1 locations, the following wiring methods shall be permitted:

- (1) Threaded rigid metal conduit (RMC) or threaded intermediate metal conduit (IMC), including conduit systems with supplemental corrosion protection coatings.
- (2) Type MI cable with termination fittings listed for the location. Type MI cable shall be installed and supported in a manner to avoid tensile stress at the termination fittings.
- (3) In restricted industrial establishments, Type MC-HL cable, listed for use in Class II, Division 1 locations, with a gas/vaportight continuous corrugated metallic sheath, an overall jacket of suitable polymeric material, a separate equipment grounding conductor(s) in accordance with 250.122, and provided with termination fittings listed for the location, shall be permitted.

- (4) Optical fiber cable Type OFNP, Type OFCP, Type OFNR, Type OFCR, Type OFNG, Type OFCG, Type OFN, or Type OFC shall be permitted to be installed in raceways in accordance with 502.10(A). Optical fiber cables shall be sealed in accordance with 502.15.
- (5) In restricted industrial establishments, listed Type ITC-HL cable with a gas/vaportight continuous corrugated metallic sheath and an overall jacket of suitable polymeric material, and terminated with fittings listed for the application, and installed in accordance with 335.4.
- (6) In restricted industrial establishments, for applications limited to 600 volts nominal or less, where the cable is not subject to physical damage and is terminated with fittings listed for the location, listed Type TC-ER-HL cable. When installed in ladder, ventilated trough, or ventilated channel cable trays, cables shall be installed in a single layer, with a space not less than the larger cable diameter between the two adjacent cables unless otherwise protected against dust buildup resulting in increased heat, Type TC-ER-HL cable shall be installed in accordance with 336.10.

Informational Note No. 1: See ANSI/UL 2225, Cables and Cable-Fittings for Use in Hazardous (Classified) Locations, for construction, testing, and marking of cables and cable fittings.

- (7) In restricted industrial establishments, listed Type P cable with metal braid armor, with an overall jacket, that is terminated with fittings listed for the location and installed in accordance with 337.10. When installed in ladder, ventilated trough, or ventilated channel cable trays, cables shall be installed in a single layer, with a space not less than the larger cable diameter between the two adjacent cables, unless otherwise protected against dust buildup resulting in increased heat.

Informational Note No. 2: See ANSI/UL 1309, Marine Shipboard Cable, for information on construction, testing, and marking of Type P cable.

Informational Note No. 3: See ANSI/UL 2225, Cables and Cable-Fittings for Use in Hazardous (Classified) Locations, for information on construction, testing, and marking of cable fittings.

Δ **(2) Flexible Connections.** Where flexible connections are necessary, one or more of the following shall also be permitted:

- (1) Dusttight flexible connectors.
- (2) Liquidtight flexible metal conduit (LFMC) with listed fittings and bonded in accordance with 502.30(B).
- (3) Liquidtight flexible nonmetallic conduit (LFNC) with listed fittings.
- (4) Interlocked armor Type MC cable having an overall jacket of suitable polymeric material and provided with termination fittings listed for Class II, Division 1 locations.
- (5) Flexible cord listed for extra-hard usage and terminated with listed dusttight cord connectors. Where used, flexible cords shall comply with 502.140.
- (6) For elevator use, an identified elevator cable of Type EO, Type ETP, or Type ETT, shown under the “use” column