

for future use with a tag, the tag shall be of sufficient durability to withstand the environment involved.

N 722.31 Safety-Control Equipment. Where damage to power-limited circuits can result in a failure of safety-control equipment that would introduce a direct fire or life hazard, the power limited circuits shall be installed using Class 1 circuit wiring methods in accordance with 724.46. All conductors of such circuits shall be installed in rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, electrical metallic tubing, Type MI cable, or Type MC cable, or be otherwise suitably protected from physical damage.

N 722.135 Installation of Cables. The installation of cables shall comply with 722.135(A) through (I), as applicable.

N (A) Listing. Cables installed in buildings shall be listed.

N (B) Cables in Buildings. The installation of cables shall comply with Table 722.135(B).

Informational Note No. 1: See NFPA 90A-2021, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 4.3.4 and 4.3.11.3.3, for information on fire protection of wiring installed in ducts specifically fabricated for environmental air and other spaces used for environmental air (plenums).

Informational Note No. 2: See 300.21 for firestop requirements for floor penetrations.

Informational Note No. 3: See Chapter 3 for the installation requirements for PLTC cables installed outdoors in cable trays.

Informational Note No. 4: See UL 2024, *Cable Routing Assemblies and Communications Raceways*, for applicable requirements for plenum, riser, and general-purpose cable routing assemblies and raceways.

N (C) Industrial Establishments. In industrial establishments where the conditions of maintenance and supervision ensure that only qualified persons service the installation, Type PLTC cable shall be permitted in accordance with either of the following:

- (1) Where the cable is not subject to physical damage, Type PLTC cable that complies with the crush and impact requirements of Type MC cable and is identified as Type PLTC-ER for such use shall be permitted to be exposed between the cable tray and the utilization equipment or device. The cable shall be continuously supported and protected against physical damage using mechanical protection such as dedicated struts, angles, or channels. The cable shall be supported and secured at intervals not exceeding 1.8 m (6 ft). Where not subject to physical damage, Type PLTC-ER cable shall be permitted to transition between cable trays and between cable trays and utilization equipment or devices for a distance not to exceed 1.8 m (6 ft) without continuous support. The cable shall be mechanically supported where exiting the cable tray to ensure that the minimum bending radius is not exceeded.

- (2) Type PLTC cable, with a metallic sheath or armor in accordance with 722.179(A)(6), shall be permitted to be installed exposed. The cable shall be continuously supported and protected against physical damage using mechanical protection such as dedicated struts, angles, or channels. The cable shall be secured at intervals not exceeding 1.8 m (6 ft).

N (D) In Hoistways. In hoistways, cables shall be installed in rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible nonmetallic conduit, or electrical metallic tubing. For elevators or similar equipment, these conductors shall be permitted to be installed as provided in 620.21.

N (E) Cable Substitutions. The substitutions for cables listed in Table 722.135(E) shall be permitted. Where substitute cables are installed, the installation requirements of the articles described in 722.3(O) shall also apply. CI cables shall be permitted to be installed to provide 2-hour circuit integrity. See 722.135(F).

Informational Note: See 800.179 for information on Types CMP, CMR, CM, and CMX.

N (F) Circuit Integrity (CI) Cable, Fire-Resistive Cable System, or Electrical Circuit Protective System. CI cable, a fire-resistive cable system, or a listed electrical circuit protective system shall be permitted for use in systems that supply critical circuits to ensure survivability for continued circuit operation for a specified time under fire conditions.

N (G) Thermocouple Circuits. Conductors in Type PLTC cables used for Class 2 thermocouple circuits shall be permitted to be any of the materials used for thermocouple extension wire.

N (H) Bundling of 4-Pair Cables Transmitting Power and Data. Where 4-pair cables are used to transmit power and data to a powered device, 725.144 shall apply.

N (I) Installation of Circuit Conductors Extending Beyond One Building. Circuit conductors that extend beyond one building and are run such that they are subject to accidental contact with electric light or power conductors operating over 300 volts to ground, or are exposed to lightning on interbuilding circuits on the same premises, shall comply with the following:

- (1) For other than coaxial conductors, 800.44, 800.53, 800.100, 805.50, 805.93, 805.170(A), and 805.170(B)
- (2) For coaxial conductors, 800.44, 820.93, and 820.100
- (3) The installation requirements of Part I of Article 300

N Part II. Listing Requirements

N 722.179 Listing and Marking of Cables. Cables installed in buildings shall be listed in accordance with 722.179(A) and marked in accordance with 722.179(B), and they shall be permitted to be marked in accordance with 722.179(C).