

exit the building) or the exterior zone of protection defined by a 46 m (150 ft) radius rolling sphere and isolated from outside cable plant, the shield shall be permitted to be grounded by a connection to an equipment grounding conductor as described in 250.118. Connecting to an equipment grounding conductor through a grounded receptacle using a dedicated bonding jumper and a permanently connected listed device shall be permitted. Use of a cord and plug for the connection to an equipment grounding conductor shall not be permitted.

Informational Note: See NFPA 780-2020, *Standard for the Installation of Lightning Protection Systems*, 4.7.3.1, for the application of the term *rolling sphere*.

(A) General Requirements. The installation shall be in accordance with 800.100.

(B) Shield Protection Devices. Grounding of a coaxial drop cable shield by means of a protective device that does not interrupt the grounding system within the premises shall be permitted.

The electric utility supply, the CATV system, and the premises wiring are all grounded. When a ground fault occurs, the current tries to return to its source. Such ground faults can cause current on the CATV shield, the primary function of which is to prevent radio frequency (RF) leakage out of the cable. The fault current can cause the cable shield to burn open and also damage the cable insulation. A device that can safely conduct current at 60 hertz and block current at the higher frequencies can be connected between the cable shield and ground, thereby maintaining grounding integrity. An ordinary fuse, for example, would not be suitable.

820.103 Equipment Grounding. Unpowered equipment and enclosures or equipment powered by the coaxial cable shall be considered grounded where connected to the metallic cable shield.

Part V. Installation Methods Within Buildings

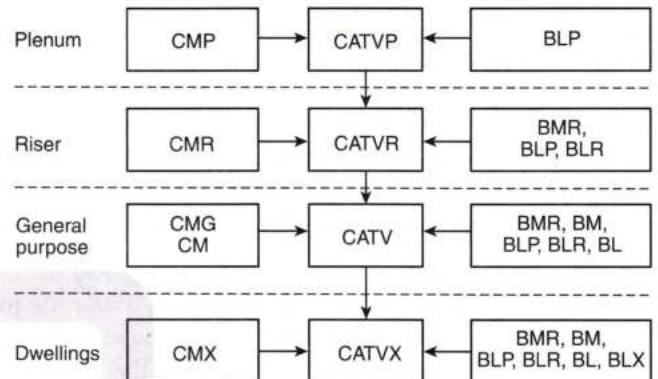
820.154 Substitutions of Listed CATV Cables. The substitutions for coaxial cables in Table 820.154 and illustrated in Figure 820.154 shall be permitted.

Informational Note: The substitute cables in Table 820.154 and Figure 820.154 are only coaxial-type cables.

The application of coaxial cables, communications raceways, and cable routing assemblies is summarized in Table 800.154(a). All communication wires, cables and raceways, and cable routing assemblies in Table 800.154(a) must be listed. The installation location dictates the type of coaxial cable permitted within the raceway or assembly and is subject to the installation requirements of 800.110 and 800.113.

TABLE 820.154 Coaxial Cable Uses and Permitted Substitutions

Cable Type	Permitted Substitutions
CATVP	CMP, BLP
CATVR	CATVP, CMP, CMR, BMR, BLP, BLR
CATV	CATVP, CMP, CATVR, CMR, CMG, CM, BMR, BM, BLP, BLR, BL
CATVX	CATVP, CMP, CATVR, CMR, CATV, CMG, CM, BMR, BM, BLP, BLR, BL, BLX



A → **B** Coaxial cable A shall be permitted to be used in place of coaxial cable B.

Type BL—Network-powered broadband communications low-power cables

Type BM—Network-powered broadband communications medium-power cables

Type CATV—Community antenna television cables

Type CM—Communications cables

FIGURE 820.154 Coaxial Cable Substitution Hierarchy.

ARTICLE 830

Network-Powered Broadband Communications Systems

Part I. General

830.1 Scope. This article covers network-powered broadband communications systems that provide any combination of voice, audio, video, data, and interactive services through a network interface unit.

Informational Note: A typical basic system configuration includes a cable supplying power and broadband signal to a network interface unit that converts the broadband signal to the component signals. Typical cables are coaxial cable with both broadband signal and power on the center conductor, composite metallic cable with a coaxial member(s) or twisted pair members for the broadband signal and twisted pair members for power, and hybrid optical fiber cable with a pair of conductors for power. Larger