



National Fire Protection Association

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WORKING DRAFT OF NEC CODE-MAKING PANEL 16 MEETING OUTPUT

**CONTENT NOT FINAL – SUBJECT TO REVISION
PRIOR TO LETTER BALLOT AND PUBLICATION OF
FIRST DRAFT REPORT**

Document: National Electrical Code®

Revision Cycle: A2025

Meeting Dates: January 15 - 20, 2024

Panel Activity: Input Stage

This is a working draft, prepared by NFPA staff, to record the output generated at the Code-Making Panel 16 First Draft Meeting. It includes draft copies of the First Revisions and any Global Revisions.

It is being made available to Panel members for the purpose of facilitating early review, particularly for those Panel members who may be seeking input from their respective organizations in preparation for the First Draft Ballot.

**First Revision No. 7610-NFPA 70-2024 [Detail]****[Renumber 770.3 to 770.4 and before current 770.21.]****770.34 Other Articles.****Installations of optical fiber cables shall comply with 770.3(A) through (D). Only those sections of Chapter 2 and Article 300 referenced in this article shall apply to optical fiber cables.****Submitter Information Verification****Committee:** NEC-P16**Submittal Date:** Mon Jan 15 16:36:17 EST 2024**Committee Statement****Committee Statement:** Section 770.3 has been renumbered to 770.4 to comply with NEC Style Manual section 2.2.**Response Message:** FR-7610-NFPA 70-2024

**First Revision No. 7725-NFPA 70-2024 [Detail]**

[Revise part numbers in Article 820 as shown below.]

Part III. Protection

Part ~~IV~~III. Grounding Methods

Part ~~V~~IV. Installation Methods Within Buildings

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 15:15:03 EST 2024

Committee Statement

Committee Statement: Per 2.1.5.4 of the Style manual Parts in Article 820 have been numbered sequentially.

Response Message: FR-7725-NFPA 70-2024

[Public Input No. 439-NFPA 70-2023 \[Part III.\]](#)

[Public Input No. 555-NFPA 70-2023 \[Article 820\]](#)

**First Revision No. 7773-NFPA 70-2024 [Detail]****800.133 Installation of Communications Wires and Cables and, CATV- Type Coaxial Cables, and Optical Fiber Cables.**

Installation of communications wires and cables, from the protector to the equipment, or where no protector is required, communications wires and cables attached to the outside or inside of the building, shall comply with 800.133(A) and through 800.133(B). Installation of CATV-type coaxial cables, beyond the point of grounding as defined in 820.93 800.93(A), 800.93(B)(2), and 800.93(C)(2), shall comply with 800.133(A) through 800.133(C). Installation of optical fiber cables shall comply with 800.133(A) through 800.133(C).

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Wed Jan 17 02:00:51 EST 2024**Committee Statement**

Committee Statement: Section 800.113 covers installation requirements for cables used for communications circuits. Table 800.113 is a list of those cables. In order to coordinate with Table 800.113, this expands 800.133 to include optical fiber cables. Cross references have been updated to Article 800 accordingly.

Response Message: FR-7773-NFPA 70-2024

[Public Input No. 1177-NFPA 70-2023 \[Section No. 800.133\]](#)

[Public Input No. 3670-NFPA 70-2023 \[Section No. 800.133 \[Excluding any Sub-Sections\]\]](#)

**First Revision No. 7831-NFPA 70-2024 [Definition: Cable Routing Assembly.]****Cable Routing Assembly.**

A single channel or connected multiple channels, as well as associated fittings, forming a structural system that is used to support and route communications wires and cables, optical fiber cables, data cables associated with information technology and communications equipment, Class 2, Class 3, Class 4, and Type PLTC cables, and power-limited fire alarm cables in plenum, riser, and general-purpose applications. (CMP-16)

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Wed Jan 17 11:19:34 EST 2024**Committee Statement****Committee Statement:** The term Class 4 is added since Class 4 systems are designed to be installed with the other cables identified in the definition.**Response Message:** FR-7831-NFPA 70-2024[Public Input No. 3879-NFPA 70-2023 \[Definition: Cable Routing Assembly.\]](#)

**First Revision No. 7834-NFPA 70-2024 [Definition: Communications Circuit.]****Communications Circuit.**

A metallic, fiber, or wireless circuit that provides voice/data (and associated power) for communications-related services between communications equipment. (CMP-16)

Informational Note: Because communications can be carried over conductors with power, meeting both this definition and the definition for a powering circuit is possible (e.g., a power line communications device may be used on a branch circuit). The addition of data to a power line circuit does not change the treatment of the circuit in this code.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 11:26:24 EST 2024

Committee Statement

Committee Statement: The informational note adds clarity that the conversion of power circuits to communications circuits is not allowed.

Response Message: FR-7834-NFPA 70-2024

Public Input No. 3378-NFPA 70-2023 [Definition: Communications Circuit.]

**First Revision No. 7838-NFPA 70-2024 [Definition: Point of Entrance.]****Point of Entrance.**

The point within a building at which ~~the~~ a wire, or cable emerges from an external wall, ~~from~~
~~the~~ the roof, or ~~from a concrete floor slab~~ . (CMP-16)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 11:37:17 EST 2024

Committee Statement

Committee Statement: The term concrete is removed since not all floors are concrete slabs. The term raceway has not been added to avoid conflict with 800.48, which permits the extension of the point of entrance by using a raceway.

Response Message: FR-7838-NFPA 70-2024

[Public Input No. 902-NFPA 70-2023 \[Definition: Point of Entrance.\]](#)



First Revision No. 7844-NFPA 70-2024 [Definition: Raceway, Communications. (Communications Racewa...]

Raceway, Communications. (Communications Raceway)

An enclosed channel of nonmetallic materials designed expressly for holding communications wires and cables; optical fiber cables; data cables associated with information technology and communications equipment; Class 2, Class 3, Class 4, and Type PLTC cables; and power-limited fire alarm cables in plenum, riser, and general-purpose applications. (CMP-16)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 13:01:37 EST 2024

Committee Statement

Committee Statement: The term Class 4 is added since Class 4 systems are designed to be installed with the other cables identified in the definition.

Response Message: FR-7844-NFPA 70-2024

Public Input No. 3878-NFPA 70-2023 [Definition: Raceway, Communications. (Communications Racewa...]



First Revision No. 7845-NFPA 70-2024 [New Definition after Definition: Communications Circuit, Pr...]

Communications, Data (Data Communications).

The transfer and reception of information in the form of a digital bitstream or a digitized analog signal transmitted over a point-to-point or point-to-multipoint arrangement. (CMP-16)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 13:06:19 EST 2024

Committee Statement

Committee Statement: A definition of data communications is needed to define that it is part of the larger term of communications.

Response Message: FR-7845-NFPA 70-2024

Public Input No. 4278-NFPA 70-2023 [New Definition after Definition: Communications Circuit, Pr...]

Public Input No. 4064-NFPA 70-2023 [New Definition after Definition: Data Center, Modular (MDC)...



First Revision No. 7847-NFPA 70-2024 [New Definition after Definition: Communications Equipment.]

Service Point, Communications (Communications Service Point).

The point of connection between the communications service provider's network (Outside Plant) and the premises wiring (Inside Plant). (CMP-16)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 13:12:38 EST 2024

Committee Statement

Committee Statement: The definition has been created to distinguish communications service point from the other service points identified in the code.

Response Message: FR-7847-NFPA 70-2024

Public Input No. 3336-NFPA 70-2023 [New Definition after Definition: Communications Equipment.]

**First Revision No. 7851-NFPA 70-2024 [New Definition after Definition:****Communications Service Pro...]****Communications System.**

The communications equipment, communication circuits and manual and machine operations necessary for the transmission, movement, and reception of information (e.g., voice, audio, data). (CMP-16)

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Wed Jan 17 13:25:52 EST 2024**Committee Statement**

Committee Statement: The term communication systems has been used in the past to refer to only audio. This definition includes video and data as communication mediums which aligns with its use in the code.

Response Message: FR-7851-NFPA 70-2024

Public Input No. 4290-NFPA 70-2023 [New Definition after Definition: Communications Equipment.]

Public Input No. 4049-NFPA 70-2023 [New Definition after Definition: Community Antenna Televisi...]



First Revision No. 7854-NFPA 70-2024 [New Definition after Definition: Communications Service Pro...]

Communications Utility.

An organization, designated or recognized such as by a public service commission or public utility commission, or recognized as such under federal, state, or local law. (CMP-16)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 13:34:29 EST 2024

Committee Statement

Committee Statement: This new definition further identifies the difference between a communications utility and a communication service provider. This revision also aligns with the definition for utility, in NFPA 76.

Response Message: FR-7854-NFPA 70-2024

Public Input No. 480-NFPA 70-2023 [New Definition after Definition: Communications Service Pro...]

**First Revision No. 7611-NFPA 70-2024 [Section No. 770.3(A)]****(A) Hazardous (Classified) Locations.**

Listed optical fiber cables shall be permitted to be installed in hazardous (classified) locations as stated in Chapter 5 . The cables shall be sealed in accordance with 501.15, 502.15, 505.16, or 506.16, as applicable.

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Mon Jan 15 16:40:18 EST 2024**Committee Statement**

Committee Statement: This editorial change has been made to avoid implying that hazardous location requirements are the purview of Article 770. With the multitude of conditions and environments that are involved in identifying the proper hazardous (classified) locations, the individual sections of Chapter 5 cannot be referenced and instead the user is directed to all of Chapter 5.

Response Message: FR-7611-NFPA 70-2024

Public Input No. 3377-NFPA 70-2023 [Section No. 770.3(A)]

**First Revision No. 7615-NFPA 70-2024 [Section No. 770.24(A)]****(A) General.**

~~Optical fiber cables shall be installed in a neat and workmanlike manner.~~ (1) Supporting.

Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use.

(2) Securing.

Such cables shall be secured by hardware, including straps; staples; cable ties listed and identified for securement and support; and hangers, or similar fittings, designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11.

(3) Plenum Rated.

Plenum cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties in accordance with 800.170.

Informational Note No. 1: See ANSI/NECA/FOA 301-2016, *Standard for Installing and Testing Fiber Optic Cables*, ANSI/TIA-568.0-D-2015, *Generic Telecommunications Cabling for Customer Premises*, and ANSI/TIA 568.3-D-2016, *Optical Fiber Cabling and Components Standard*, for accepted industry practices.

Informational Note No. 2: See NFPA 90A-2021/2024, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 8.5.5.6 for listing information of discrete combustible components installed in accordance with 300.22(C).

Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of optical fiber cable properties.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
NEC_CMP16_FR-7615_770.24_A_.docx		

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 16:58:23 EST 2024

Committee Statement

Committee Statement: The issue dates of NFPA 90A and ANSI/BICSI N1 were updated to align with the NFPA manual of style. The section in NFPA 90A dealing with discrete products was added to improve usability.

The first sentence in 770.24(A) has been deleted since “neat and workmanlike” is unenforceable. Additionally, the recommended language of professional and skillful is also unenforceable and ambiguous and has not been adopted.

Section 770.24(A) has also been subdivided to comply with section 3.5.1.2 of the NEC Style Manual.

Response FR-7615-NFPA 70-2024
Message:

[Public Input No. 2494-NFPA 70-2023 \[Section No. 770.24\(A\)\]](#)

[Public Input No. 57-NFPA 70-2023 \[Section No. 770.24\(A\)\]](#)

[Public Input No. 19-NFPA 70-2023 \[Section No. 770.24\(A\)\]](#)

[Public Input No. 2014-NFPA 70-2023 \[Section No. 770.24\(A\)\]](#)

[Public Input No. 1385-NFPA 70-2023 \[Section No. 770.24\(A\)\]](#)

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SUBJECT TO REVISION - NOT FOR PUBLICATION

(A) General. [Move text to (1)—(3)]

~~Optical fiber cables shall be installed in a neat and workmanlike manner. Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be secured by hardware, including straps; staples; cable ties listed and identified for securement and support; and hangers, or similar fittings, designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11. Plenum cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties in accordance with 800.170.~~

~~Informational Note No. 1: See ANSI/NECA/FOA 301-2016, *Standard for Installing and Testing Fiber Optic Cables*, ANSI/TIA-568.0-D-2015, *Generic Telecommunications Cabling for Customer Premises*, and ANSI/TIA 568.3-D-2016, *Optical Fiber Cabling and Components Standard*, for accepted industry practices.~~

~~Informational Note No. 2: See NFPA 90A-2021, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, for discrete combustible components installed in accordance with 300.22(C).~~

~~Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of optical fiber cable properties.~~

(1) Supporting.

Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use.

(2) Securing.

Such cables shall be secured by hardware, including straps; staples; cable ties listed and identified for securement and support; and hangers, or similar fittings, designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11.

(3) Plenum Rated.

Plenum cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties in accordance with 800.170.

Informational Note No. 1: See ANSI/NECA/FOA 301-2016, *Standard for Installing and Testing Fiber Optic Cables*, ANSI/TIA-568.0-D-2015, *Generic Telecommunications Cabling for Customer Premises*, and ANSI/TIA 568.3-D-2016, *Optical Fiber Cabling and Components Standard*, for accepted industry practices.

Informational Note No. 2: See NFPA 90A-~~2021~~2024, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 8.5.5.6 for listing information of discrete combustible components installed in accordance with 300.22(C).

Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of optical fiber cable properties.

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**First Revision No. 7687-NFPA 70-2024 [Section No. 770.44(A)(4)]****(4) Clearance.**

~~Supply service drops and sets of overhead service~~ Electrical light or power conductors of 0 to 750 volts running above and parallel to optical fiber ~~cable service drops~~ cables shall have a minimum separation of 300 mm (12 in.) at any point in the span, including the point of their attachment to the building. Clearance of not less than 1.0 m (40 in.) shall be maintained between the two services at the pole.

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Tue Jan 16 11:31:47 EST 2024**Committee Statement****Committee Statement:** To provide consistent terminology throughout the section, the term "supply service drops" was changed to "electric light or power conductors".**Response Message:** FR-7687-NFPA 70-2024[Public Input No. 419-NFPA 70-2023 \[Section No. 770.44\(A\)\(4\)\]](#)

**First Revision No. 7690-NFPA 70-2024 [Section No. 770.44(B)]****(B) Above Roofs.**

Outside plant optical fiber cables shall have a vertical clearance of not less than 2.5 m (8 ft) from all points of roofs above which they pass.

Exception No. 1: The requirement of 770.44(B) shall not apply to auxiliary buildings such as garages and the like.

Exception No. 2: A reduction in clearance above only the overhanging portion of the roof to not less than 450 mm (18 in.) shall be permitted if (1) not more than 1.2 m (4 ft) of optical fiber cable ~~service drop cable~~ passes above the roof overhang, and (2) the cable is terminated at a through- or above-the-roof raceway or approved support.

Exception No. 3: Where the roof has a slope of not less than 100 mm in 300 mm (4 in. in 12 in.), a reduction in clearance to not less than 900 mm (3 ft) shall be permitted.

Informational Note: See ANSI/IEEE C2-2017 2023, *National Electric Safety Code® (NESC®)*, Part 2, *Safety Rules for Overhead Lines*, for additional information regarding overhead wires and cables.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 11:38:22 EST 2024

Committee Statement

Committee Statement: "Optical fiber cable service drop cable" was simplified to "optical fiber cable" to improve clarity. The reference to the National Electrical Safety code has been updated.

Response Message: FR-7690-NFPA 70-2024

Public Input No. 420-NFPA 70-2023 [Section No. 770.44(B)]

**First Revision No. 7691-NFPA 70-2024 [Section No. 770.48]****770.48 – Unlisted Cables Entering Buildings.****(A) – Conductive and Nonconductive Cables.**

Unlisted conductive and nonconductive outside plant optical fiber cables shall be permitted to be installed in building spaces, other than risers, ducts used for environmental air, plenums used for environmental air, and other spaces used for environmental air, where the length of the cable within the building, measured from its point of entrance, does not exceed 15 m (50 ft) and the cable enters the building from the outside and is terminated in an enclosure.

The point of entrance shall be permitted to be extended from the penetration of the external wall, roof, or floor slab by continuously enclosing the entrance optical fiber cables in rigid metal conduit (RMC) or intermediate metal conduit (IMC) to the point of emergence.

Informational Note: Splice cases or terminal boxes, both metallic and plastic types, typically are used as enclosures for splicing or terminating optical fiber cables.

(B) – Nonconductive Cables in Raceway.

Unlisted nonconductive outside plant optical fiber cables shall be permitted to enter the building from the outside and shall be permitted to be installed in any of the following raceways:

- (1) Intermediate metal conduit (IMC)
- (2) Rigid metal conduit (RMC)
- (3) Rigid polyvinyl chloride conduit (PVC)
- (4) Electrical metallic tubing (EMT)

Unlisted nonconductive outside plant cables installed in rigid polyvinyl chloride conduit (PVC) or electrical metallic tubing (EMT) shall not be installed in risers, ducts used for environmental air, plenums used for environmental air, and other spaces used for environmental air.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 11:48:29 EST 2024

Committee Statement

Committee Statement: Section 770.48 has been deleted with its requirements incorporated into 800.48. See separate action taken on 800.48.

Response Message: FR-7691-NFPA 70-2024

Public Input No. 2561-NFPA 70-2023 [Section No. 770.48]

**First Revision No. 7732-NFPA 70-2024 [Section No. 770.113(B)(2)]****(2) Uses Not Permitted.**

Types OFNR, OFCR, OFNG, OFCG, OFN, and OFC shall not be permitted to be installed in ducts specifically fabricated for environmental air as described in 300.22(B).

Informational Note: See NFPA 90A-2024 2024, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, Chapter 10, *Electrical and Optical Fiber Wiring and Equipment in Plenums and Ducts*, for information on fire protection of wiring installed in fabricated ducts.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 15:33:39 EST 2024

Committee Statement

Committee Statement: Revised informational note to align with the NEC style manual and added a reference to NFPA 90A, Chapter 10 for user clarity.

Response Message: FR-7732-NFPA 70-2024

Public Input No. 20-NFPA 70-2023 [Section No. 770.113(B)(2)]

**First Revision No. 7735-NFPA 70-2024 [Section No. 770.113(C)(2)]****(2) Uses Not Permitted.**

Types OFNR, OFCR, OFNG, OFCG, OFN, and OFC shall not be permitted to be installed in other spaces used for environmental air (plenums).

Informational Note: See NFPA 90A-2018, 2024, Chapter 10, Electrical and Optical Fiber Wiring and Equipment in Plenums and Ducts, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, for information on fire protection of wiring installed in other spaces used for environmental air.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 15:38:09 EST 2024

Committee Statement

Committee Statement: Revised informational note to align with the NEC style manual and added a reference to NFPA 90A, Chapter 10 for user clarity.

Response Message: FR-7735-NFPA 70-2024

Public Input No. 21-NFPA 70-2023 [Section No. 770.113(C)(2)]

**First Revision No. 7942-NFPA 70-2024 [Section No. 770.114]**

[Move to come after 770.

114 Grounding

106 and before Part V.]

770.108 Grounding and Bonding of Cables within Buildings .

Non-current-carrying conductive members of optical fiber cables installed in buildings shall be bonded to a grounded equipment rack or enclosure, or grounded in accordance with the grounding methods specified by 770.100(B) using a conductor specified in 770.100(A).

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Thu Jan 18 11:04:21 EST 2024

Committee Statement

Committee Statement: This revision moves Section 770.114, for the grounding and bonding of non-current-carrying conductive members of optical fiber cables, to Part IV of Article 770 which is appropriately entitled Part IV. Grounding Methods. The first sentence of 770.this section has been clarified to identify the location of the cables inside the building and the title has been revised for consistency with the requirements of the section.

Response Message: FR-7942-NFPA 70-2024

Public Input No. 4073-NFPA 70-2023 [Section No. 770.114]

Public Input No. 4072-NFPA 70-2023 [New Section after 770.106]

**First Revision No. 7767-NFPA 70-2024 [Section No. 770.133(C)]**

[See attachment for revisions to 770.133 (C).]

(C) With Other Circuits.

~~Conductive-~~ Listed conductive and nonconductive optical fiber cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly, with conductors of any of the following:

- (1) Class 2 and Class 3 remote-control, signaling, and power-limited ~~circuits in compliance with 645.5(E)(2) or Parts I and II of Article 725~~
Power
- (2) cables
- (3) Listed Class 4 cables
- (4) Listed power -limited fire alarm ~~systems in compliance with Parts I and III of Article 760~~
- (5) ~~Communications circuits in compliance with Parts I and V of Article 805~~
Community
- (6) cables
- (7) Listed communications cables
- (8) Listed community antenna television and radio distribution ~~systems in compliance with Parts I and V of Article 820~~
- Low
- (9) system coaxial cables
- (10) Listed low -power network-powered broadband communications ~~circuits in compliance with Parts I and V of Article 830~~ cables

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
70_CMP16_FR7767_770.113_C_.docx	Revisions to 770.133(C)	

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 00:38:16 EST 2024

Committee Statement

Committee Statement: Revision reflects that cables must be listed and other readability improvements and class 4 cables have been added because they are allowed to be routed within the same raceway as the circuits covered within the 770.133.

Response Message: FR-7767-NFPA 70-2024

Public Input No. 918-NFPA 70-2023 [Section No. 770.133(C)]

Public Input No. 4035-NFPA 70-2023 [Section No. 770.133(C)]

[Public Input No. 3928-NFPA 70-2023 \[Section No. 770.133\(C\)\]](#)

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770.133 (C) With Other Circuits.

~~Conductive-Listed~~ conductive and nonconductive optical fiber cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly, with conductors of any of the following:

- (1) Listed Class 2 and Class 3 remote-control, signaling, and power-limited ~~circuits in compliance with 645.5(E)(2) or Parts I and II of Article 725~~ cables
- (2) Listed Class 4 cables
- (23) Listed ~~Power~~power-limited fire alarm ~~cables~~systems in compliance with Parts I and III of Article 760
- (34) Listed ~~Communications~~communications ~~cables~~circuits in compliance with Parts I and V of Article 805
- (45) Listed ~~Community~~community antenna television and radio distribution ~~system~~ coaxial cables~~systems in compliance with Parts I and V of Article 820~~
- (56) Listed ~~Low~~low-power network-powered broadband communications cables ~~circuits in compliance with Parts I and V of Article 830~~

**First Revision No. 7696-NFPA 70-2024 [Section No. 770.180]**

770.180— [Move 770.180 Ground Devices to 770.100(E), after 770.100(D).]

770.100 (E) _ Grounding Devices.

Where bonding or grounding is required, devices used to connect a shield, a sheath, or non-current-carrying metallic members of a cable to a bonding conductor or grounding electrode conductor shall be listed or be part of listed equipment.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 13:01:49 EST 2024

Committee Statement

Committee Statement: This revision moves the listing requirement for grounding devices to Part IV Grounding Methods from 770.180 because this requirement is not a listing requirement, but an installation requirement.

Response Message: FR-7696-NFPA 70-2024

[Public Input No. 193-NFPA 70-2023 \[New Section after 770.100\(D\)\]](#)

[Public Input No. 194-NFPA 70-2023 \[Section No. 770.180\]](#)

**First Revision No. 7549-NFPA 70-2024 [Section No. 800.1]****800.1 Scope.**

This article covers general requirements for communications systems. These general requirements apply to communications circuits, data communications, community antenna television and radio distribution systems, network-powered broadband communications systems, and premises-powered broadband communications systems, unless modified by Articles 805, 820, 830, or 840 other Articles in this Chapter.

Informational Note No. 1: See 90.2(D)(4) for installations of circuits and equipment that are not covered.

Informational Note No. 2: See Part II of Article 725, Part II for information on the installation of Class 2 and Class 3 power-limited circuits and 722.135(E) for the substitution of communications cables for Class 2 and Class 3 cables.

Informational Note No. 3: See Part II of Article 760, Part II for information on the installation of power-limited fire alarm circuits, including the substitution of communications cables for power-limited fire alarm cables.

Informational Note No. 4: See Article 726, Part II for Information on powering of communications circuits and the installation of Class 4 circuits.

Informational Note No. 5: See C2-2023, National Electrical Safety Code®, (NESC®), for information on outside plant cabling.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 11:53:09 EST 2024

Committee Statement

Committee Statement: Including data communications in Article 800 improves the usability of the Code since most Code users assume it's already in Article 800.

In order to comply with 4.1.4 of the NEC Style Manual, references to the individual Articles in Chapter 8 were replaced with a general reference to other Articles in the Chapter. Additional compliance with 4.1.4 required stating the Article number before the Part number in the Article.

Adding a reference to Class 4 systems improves usability since these systems are often used to power communications systems.

Adding a reference to the NESC improves usability since the NESC covers outside plant installations and coordinated with Article 800.

An informational note was added to identify specialty definitions in Article 100 that are important to communications and thereby improve usability.

Response Message: FR-7549-NFPA 70-2024

Public Input No. 819-NFPA 70-2023 [Section No. 800.1]

WORKING DRAFT OF PANEL MEETING OUTPUT
NEC CMP-16, January 15 - 20, 2024, Subject to Revision - Not for Publication

[Public Input No. 2478-NFPA 70-2023 \[Section No. 800.1\]](#)

[Public Input No. 2964-NFPA 70-2023 \[Section No. 800.1\]](#)

[Public Input No. 3613-NFPA 70-2023 \[Section No. 800.1\]](#)

[Public Input No. 4068-NFPA 70-2023 \[Section No. 800.1\]](#)

[Public Input No. 4174-NFPA 70-2023 \[Section No. 800.1\]](#)

[Public Input No. 4281-NFPA 70-2023 \[Section No. 800.1\]](#)

FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

**First Revision No. 7559-NFPA 70-2024 [Section No. 800.2]****800.2– 3** Reconditioned Equipment.

(A) The requirements of 110.21(A)(2) shall apply.

(B) The installation of the following reconditioned equipment shall not be permitted:

- ☐ (1) Primary protectors
- ☐ (2) Secondary protectors
- ☐ (3) Antenna lead-in protectors

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
NEC_CMP16_FR-7559_800.2.docx		

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 13:17:47 EST 2024

Committee Statement

Committee Statement: This revision to 800.3 maintains the reference to 110.21(A)(2) but clarifies that reconditioned protectors are not permitted. Protectors are the most important safety protection within communications circuits and systems. Based on the action taken by the committee on 805.18, this section is automatically moved to 800.3 without further action by the committee panel.

Response Message: FR-7559-NFPA 70-2024

[Public Input No. 3089-NFPA 70-2023 \[Section No. 800.2\]](#)

[Public Input No. 3628-NFPA 70-2023 \[Section No. 800.2\]](#)

[Public Input No. 2620-NFPA 70-2023 \[Section No. 800.2\]](#)

800.2 Reconditioned Equipment. [Move text to (A)]

~~The requirements of 110.21(A)(2) shall apply.~~

(A)

The requirements of 110.21(A)(2) shall apply.

(B)

The installation of the following reconditioned equipment shall not be permitted:

(1) Primary protectors

(2) Secondary protectors

(3) Antenna lead-in protectors

FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION



First Revision No. 7950-NFPA 70-2024 [Section No. 800.3(A)]

[See attached Word Document for revisions to 800.3 (A).]

(A) Output Circuits.

As appropriate for the services provided, the output circuits derived from a network-powered broadband communications system's network interface unit (NIU) or from a premises-powered broadband communications system's network terminal shall comply with the requirements of the following:

- (1) Installations of Class 2 and Class 3 circuits — Part II of Article 725, Part II and Article 722, Parts I and II
- (2) Installations of Class 4 circuits — Article 726, Part II and Article 722, Parts I and II
- (3) Installations of power-limited fire alarm circuits — Part III of Article 760, Part III
- (4) Installations of optical fiber cables — Part V of Article 770, Part V
- (5) Installations of communications circuits — Part IV of Article 805

~~Informational Note: The communications circuits covered by Article 805 are commonly referred to as POTS (plain old telephone service) circuits.~~

, Part IV

- (6) Installations of premises (within buildings) community antenna television and radio distribution circuits —

Part V of

- Article 820, Part V

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
70_CMP16_FR7950_800.3_A_.docx	Revisions to 800.3(A).	

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Thu Jan 18 11:25:29 EST 2024

Committee Statement

Committee Statement: Compliance with 4.1.4 of the NEC Style Manual requires stating the Article number before the Part number in the Article.

New item (2) has been added since Class 4 circuits can be derived from a network-powered broadband circuit.

Response Message: FR-7950-NFPA 70-2024

WORKING DRAFT OF PANEL MEETING OUTPUT
NEC CMP-16, January 15 - 20, 2024, Subject to Revision - Not for Publication

[Public Input No. 820-NFPA 70-2023 \[Section No. 800.3\(A\)\]](#)

[Public Input No. 2965-NFPA 70-2023 \[Section No. 800.3\(A\)\]](#)

[Public Input No. 4178-NFPA 70-2023 \[Section No. 800.3\(A\)\]](#)

FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

(A) Output Circuits.

As appropriate for the services provided, the output circuits derived from a network-powered broadband communications system's network interface unit (NIU) or from a premises-powered broadband communications system's network terminal shall comply with the requirements of the following:

(1) Installations of Class 2 and Class 3 circuits — ~~Part II of Article 725, Part II and Article 722, Parts I and II of Article 722~~

(2) Installations of Class 4 circuits- Article 726, Part II and Article 722, Parts I and II

(32) Installations of power-limited fire alarm circuits — Article 760, Part III ~~of Article 760~~

(43) Installations of optical fiber cables — ~~Part V of Article 770, Part V~~

(54) Installations of communications circuits — Article 800, Part IV ~~of Article 805~~

~~Informational Note: The communications circuits covered by Article 805 are commonly referred to as POTS (plain old telephone service) circuits.~~

(65) Installations of premises (within buildings) community antenna television and radio distribution circuits — ~~Part V of Article 820, Part V~~

**First Revision No. 7618-NFPA 70-2024 [Section No. 800.3(C)]**

(C) Wiring in Ducts for Dust, Loose Stock, or Vapor Removal.

The requirements of 300.22(A) shall apply to communications wires and cables, CATV-type coaxial cables, network-powered broadband communications cables, and conductive optical fiber cables .

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 23:58:22 EST 2024

Committee Statement

Committee Statement: The revised text clarifies which of the cables, used for communications, 300.22(A) applies to.

Response Message: FR-7618-NFPA 70-2024

Public Input No. 2564-NFPA 70-2023 [Section No. 800.3(C)]

**First Revision No. 7619-NFPA 70-2024 [Section No. 800.3(E)]**

(E) Installation and Use of Equipment .

The requirements of 110.3(B) shall apply.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 00:03:11 EST 2024

Committee Statement

Committee Statement: The title has been revised to correlate with 110.3.

Response Message: FR-7619-NFPA 70-2024

Public Input No. 2565-NFPA 70-2023 [Section No. 800.3(E)]

**First Revision No. 7620-NFPA 70-2024 [Section No. 800.3(F)]**

~~(F) – Optical Fiber Cable.~~

~~Where optical fiber cable is used to provide a communications circuit within a building, Article 770 shall apply.~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 00:06:47 EST 2024

Committee Statement

Committee Statement: This revision aligns with the committee panel's actions to not include optical fiber cables in Article 800 when they are used for communications, thereby increasing the usability of Article 800 and eliminating the need for a reference to Article 770.

Response Message: FR-7620-NFPA 70-2024

[Public Input No. 1181-NFPA 70-2023 \[Section No. 800.3\(F\)\]](#)



First Revision No. 7621-NFPA 70-2024 [New Section after 800.3(H)]

[New Section after 800.3(H).]

800.3(I) Circuits with Communications and Power.

Circuits carrying data and power shall be classified as electrical power circuits in accordance with the type of electrical power carried.

Exception: PoE circuits shall be permitted to be classified as communications; and Class 2 or Class 3.

Informational Note: Communications circuits carrying power in accordance with Part II of Article 805, 820.15, 830.15, or 840.160 are considered according to their appropriate article for each type of circuit.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 00:10:17 EST 2024

Committee Statement

Committee Statement: The new text adds clarity on the classification of dual power and communications circuits.

Response Message: FR-7621-NFPA 70-2024

Public Input No. 3382-NFPA 70-2023 [New Section after 800.3(H)]

**First Revision No. 7663-NFPA 70-2024 [New Section after 800.3(H)]****[Add new section after 800.3(H)]****800.108 Grounding and Bonding of Communication Cables Within Buildings .**

The non-current-carrying conductive members of conductive optical fiber cables, and the shields of cables used for communications installed in buildings shall be bonded to a grounded equipment rack or enclosure, or grounded in accordance with the grounding methods specified in 800.100(B) using a conductor specified in 800.100(A).

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Tue Jan 16 10:02:02 EST 2024**Committee Statement**

Committee Statement: This revision creates a new Section 800.108 within the appropriate Part III (Grounding Methods) of the general Article 800 covering the common grounding and bonding requirements for non-current-carrying conductive members and shields of communications cables within buildings. This continues the consolidation of general rules for communications cables in Article 800.

The creation this new 800.108 covering communications cables enables the deletion the now redundant reference to Article 770 within 800.3(H).

Response Message: FR-7663-NFPA 70-2024

Public Input No. 2482-NFPA 70-2023 [New Section after 800.133]

Public Input No. 4069-NFPA 70-2023 [New Section after 800.106]

Public Input No. 1006-NFPA 70-2023 [New Section after 800.113]

**First Revision No. 7769-NFPA 70-2024 [Section No. 800.3(H)]**

~~(H)– Bonding and Grounding of Cable Shields.~~

~~The requirements of 250.4(A)(5) shall apply to the metal shields of cables used for communications.~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 01:19:04 EST 2024

Committee Statement

Committee Statement: A new section of bonding and grounding requirements for communication cables has been created, which makes 800.3(H) no longer needed. See action taken on PI-1006, PI-2482, PI-4069.

Response Message: FR-7769-NFPA 70-2024

[Public Input No. 1007-NFPA 70-2023 \[Section No. 800.3\(H\)\]](#)

[Public Input No. 2503-NFPA 70-2023 \[Section No. 800.3\(H\)\]](#)

[Public Input No. 3196-NFPA 70-2023 \[Section No. 800.3\(H\)\]](#)

[Public Input No. 4071-NFPA 70-2023 \[Section No. 800.3\(H\)\]](#)



First Revision No. 7581-NFPA 70-2024 [Section No. 800.24(A)]

(A) General.

Circuits and equipment shall be installed in a neat and workmanlike manner.

(1) Supporting

Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use.

(2) Securing

Such cables shall be secured by hardware, including straps; staples; cable ties listed and identified for securement and support; and hangers, or similar fittings, designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11.

(3) Plenum Rated

Plenum cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties in accordance with 800.170.

Informational Note No. 1: See ANSI/BICSI N1-2019, *Installation Practices for Telecommunications and IC Cabling and Related Cabling Infrastructure*; ANSI/TIA-568.1-E-2020, *Commercial Building Telecommunications Infrastructure Standard*; ANSI/TIA-569-E-2019, *Telecommunications Pathways and Spaces*; ANSI/TIA-570-C-2012, *Residential Telecommunications Infrastructure Standard*; ANSI/TIA-1005-A-2012, *Telecommunications Infrastructure Standard for Industrial Premises*; ANSI/TIA-1179-A-2017, *Healthcare Facility Telecommunications Infrastructure Standard*; ANSI/TIA-4966-2014, *Telecommunications Infrastructure Standard for Educational Facilities*; ANSI/NECA/FOA 301-2016, *Standard for Installing and Testing Fiber Optic Cables*; ANSI/TIA-568.0-d-2015, *General Telecommunications Cabling for Customer Premises*, and ANSI/TIA-568.3-d-2016, *Optical Fiber Cabling and Components Standard*, and other ANSI-approved installation standards for accepted industry practices.

Informational Note No. 2: See NFPA 90A-

2021

2024, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 8.5.5.6 for listing information of discrete combustible components installed in accordance with 300.22(C).

Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of wire and cable properties.

Supplemental Information

File Name	Description	Approved
NEC_CMP16_FR-7581_800.24_A_.docx		

Submitter Information Verification

Committee: NEC-P16
Submittal Date: Mon Jan 15 14:26:53 EST 2024

Committee Statement

Committee Statement: The issue dates of NFPA 90A and ANSI/BICSI N1 were updated to align with the NFPA manual of style. The section in NFPA 90A dealing with discrete products was added to improve usability.

Neat and workmanlike was changed to professional and skillful to correlate with 110.12.

The first sentence in 800.24(A) has been deleted since “neat and workmanlike” is unenforceable. Additionally, the recommended language of professional and skillful is also unenforceable and ambiguous and has not been adopted.

Additional standards were added to Informational Note No. 1 to improve usability.

Section 800.24(A) was subdivided to comply with section 3.5.1.2 of the NEC Style Manual.

Response Message: FR-7581-NFPA 70-2024

[Public Input No. 51-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 1386-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 2013-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 4045-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 2444-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 2495-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 22-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 2446-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

[Public Input No. 1184-NFPA 70-2023 \[Section No. 800.24\(A\)\]](#)

(A) General. [Move text to (1)—(3)]

~~Circuits and equipment shall be installed in a neat and workmanlike manner. Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be secured by hardware, including straps; staples; cable ties listed and identified for securement and support; and hangers, or similar fittings, designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11. Plenum cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties in accordance with 800.170.~~

~~Informational Note No. 1: See ANSI/BICSI N1-2019, *Installation Practices for Telecommunications and IC Cabling and Related Cabling Infrastructure*; ANSI/TIA-568.1-E-2020, *Commercial Building Telecommunications Infrastructure Standard*; ANSI/TIA-569-E-2019, *Telecommunications Pathways and Spaces*; ANSI/TIA-570-C-2012, *Residential Telecommunications Infrastructure Standard*; ANSI/TIA-1005-A-2012, *Telecommunications Infrastructure Standard for Industrial Premises*; ANSI/TIA-1179-A-2017, *Healthcare Facility Telecommunications Infrastructure Standard*; ANSI/TIA-4966-2014, *Telecommunications Infrastructure Standard for Educational Facilities*; and other ANSI approved installation standards for accepted industry practices.~~

~~Informational Note No. 2: See NFPA 90A-2021, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, for discrete combustible components installed in accordance with 300.22(C).~~

~~Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of wire and cable properties.~~

(1) Supporting.

Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use.

(2) Securing.

Such cables shall be secured by hardware, including straps; staples; cable ties listed and identified for securement and support; and hangers, or similar fittings, designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11.

(3) Plenum Rated.

Plenum cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties in accordance with 800.170.

Informational Note No. 1: See ANSI/BICSI N1-2019, *Installation Practices for Telecommunications and IC Cabling and Related Cabling Infrastructure*; ANSI/TIA-568.1-E-2020, *Commercial Building Telecommunications Infrastructure Standard*; ANSI/TIA-569-E-2019, *Telecommunications Pathways and Spaces*; ANSI/TIA-570-C-2012, *Residential*

Telecommunications Infrastructure Standard; ANSI/TIA-1005-A-2012, *Telecommunications Infrastructure Standard for Industrial Premises*; ANSI/ TIA-1179-A-2017, *Healthcare Facility Telecommunications Infrastructure Standard*; ANSI/TIA-4966-2014, *Telecommunications Infrastructure Standard for Educational Facilities*; ANSI/NECA/FOA 301-2016, *Standard for Installing and Testing Fiber Optic Cables*, ANSI/TIA-568.0-d-2015, *General Telecommunications Cabling for Customer Premises*, and ANSI/TIA-568.3-d-2016, *Optical Fiber Cabling and Components Standard*, and other ANSI-approved installation standards for accepted industry practices.

Informational Note No. 2: See NFPA 90A-~~2021~~2024, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, for 8.5.5.6 for listing information of discrete combustible components installed in accordance with 300.22(C).

Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of wire and cable properties.

**First Revision No. 7583-NFPA 70-2024 [Section No. 800.24(B)]****(B) Circuit Integrity (CI) Cable.**

CI cable shall be supported at ~~a distance not exceeding~~ 610 mm (24 in.) maximum intervals .
Cable shall be secured to the noncombustible surface of the building structure. Cable supports
and fasteners shall be steel.

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Mon Jan 15 14:44:23 EST 2024**Committee Statement****Committee Statement:** Section 800.24(B) was revised to improve clarity.**Response Message:** FR-7583-NFPA 70-2024Public Input No. 700-NFPA 70-2023 [Section No. 800.24(B)]

**First Revision No. 7584-NFPA 70-2024 [Section No. 800.26]****800.26 Spread of Fire or Products of Combustion.**

Installations of cables, communications raceways, and cable routing assemblies in hollow spaces, vertical shafts, and ventilation or air-handling ducts shall be made so that the possible spread of fire or products of combustion will not be substantially increased. Openings around penetrations of cables, communications raceways, and cable routing assemblies through fire-resistant-rated walls, partitions, floors, or ceilings shall be firestopped using approved methods to maintain the fire resistance rating.

Informational Note: Directories of electrical construction materials published by qualified testing laboratories contain many listing installation restrictions necessary to maintain the fire-resistive rating of assemblies where penetrations or openings are made. Building codes also contain restrictions on membrane penetrations on opposite sides of a fire resistance-rated wall assembly. An example is the 600 mm (24 in.) minimum horizontal separation that usually applies between boxes installed on opposite sides of the wall. Assistance in complying with 800.26 can be found in building codes, fire resistance directories, and product listings.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 14:56:04 EST 2024

Committee Statement

Committee Statement: An editorial correction was made to 800.26.

Response Message: FR-7584-NFPA 70-2024

[Public Input No. 2566-NFPA 70-2023 \[Section No. 800.26\]](#)

**First Revision No. 7665-NFPA 70-2024 [Section No. 800.44]****800.44 Overhead (Aerial) Wires and Cables.**

Overhead (aerial) communications wires and cables, optical fiber cables, and CATV-type coaxial cables entering buildings shall comply with 800.44(A) through (D).

Informational Note: See ~~ANSI C2-2017~~ 2023, *National Electrical Safety Code® (NESC®)*, *Part 2 Safety Rules for Overhead Lines*, for additional information regarding overhead (aerial) wires and cables.

(A) On Poles, In-Span, Above Roofs, on Masts, or Between Buildings.

If communications wires and cables, optical fiber cables, or CATV-type coaxial cables and electric light or power conductors are supported by the same pole or are run parallel to each other in-span, the conditions described in 800.44(A)(1) through (A)(4) shall be met.

(1) Relative Location.

If practicable, the communications wires and cables, optical fiber cables, and CATV-type coaxial cables shall be located below the electric light or power conductors.

(2) Attachment to Cross-Arms.

Communications wires and cables, optical fiber cables, and CATV-type coaxial cables shall not be attached to a cross-arm that carries electric light or power conductors.

(3) Climbing Space.

The climbing space through wires and cables shall comply with the requirements of 225.14(B).

(4) Clearance.

~~Supply service drops and sets of overhead service.~~ Electric light or power conductors of 0 volts to 750 volts running above and parallel to communications wires and cables, optical fiber cables, and CATV-type coaxial service drops shall have a minimum separation of 300 mm (12 in.) at any point in the span, including the point of their attachment to the building, provided that the ungrounded conductors are insulated and that a clearance of not less than 1.0 m (40 in.) is maintained between the two services at the pole.

(B) Above Roofs.

Communications wires and cables, optical fiber cables, and CATV-type coaxial cables shall have a vertical clearance of not less than 2.5 m (8 ft) from all points of roofs above which they pass.

Exception No. 1: Communications wires and cables, optical fiber cables, and CATV-type coaxial cables shall not be required to have a vertical clearance of not less than 2.5 m (8 ft) above auxiliary buildings, such as garages and the like.

Exception No. 2: A reduction in clearance above only the overhanging portion of the roof to not less than 450 mm (18 in.) shall be permitted if (1) not more than 1.2 m (4 ft) of communications wires and cables, optical fiber cables, and CATV-type ~~service-drop conductors~~ coaxial cables pass above the roof overhang and (2) they are terminated at a through- or above-the-roof raceway or approved support.

Exception No. 3: ~~Where~~ If the roof has a slope of not less than 100 mm in 300 mm (4 in. in 12 in.), a reduction in clearance to not less than 900 mm (3 ft) shall be permitted.

Informational Note: See ~~ANSI/IEEE C2-2017~~ 2023, *National Electrical Safety Code® (NESC®)*, *Part 2, Safety Rules for Overhead Lines*, for additional information regarding overhead (aerial) wire and cables.

(C) On Masts.

Overhead (aerial) communications wires and cables, conductive optical fiber cables, and CATV-type coaxial cables shall be permitted to be attached to an above-the-roof raceway mast that does not enclose or support conductors of electric light or power circuits. Nonconductive optical fiber cables shall be permitted to be attached to an above-the-roof mast that encloses or supports conductors of electric light or power circuits.

(D) Between Buildings.

Communications cables, optical fiber cables, and CATV-type coaxial cables extending between buildings or structures, and also the supports or attachment fixtures, shall be identified and shall have sufficient strength to withstand the loads to which they might be subjected.

Exception: If a communications cable, or optical fiber cables, or a CATV-type coaxial cable does not have sufficient strength to be self-supporting, it shall be attached to a supporting messenger cable that, together with the attachment fixtures or supports, shall be acceptable for the purpose and shall have sufficient strength to withstand the loads to which they may be subjected.

(E) On Buildings.

Where attached to buildings, communications wires and cables, optical fiber cables, and CATV-type coaxial cables shall be securely fastened in such a manner that they will be separated from other conductors in accordance with 800.44(E)(1) and (E)(2).

(1) Electric Light or Power.

The communications wires and cables, optical fiber cables, and CATV-type coaxial cables shall have a separation of at least 100 mm (4 in.) from electric light, power, Class 1, or non-power-limited fire alarm circuit conductors not in raceway or cable, or shall be permanently separated from conductors of the other system by a continuous and firmly fixed nonconductive barrier in addition to the insulation on the wires.

(2) Other Communications Systems.

Communications wires and cables, optical fiber cables, and CATV-type coaxial cables shall be installed so that there will be no unnecessary interference in the maintenance of the separate systems. In no case shall the wires, cables, messenger strand, or equipment of one system cause abrasion to the wires, cables, messenger strand, or equipment of any other system.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 10:13:06 EST 2024

Committee Statement

Committee Statement: This revision is one of many that complete the inclusion of optical fiber cable in Article 800 that was started two codes cycles ago.

In order to provide consistent terminology throughout the section, the term "supply service drops" was changed to "electric light or power conductors". "Electric light or power conductors" is the term used in the lead in sentence for 800.44.

Response Message: FR-7665-NFPA 70-2024

Public Input No. 1185-NFPA 70-2023 [Section No. 800.44]

**First Revision No. 7674-NFPA 70-2024 [Section No. 800.47]****800.47** Underground Systems Entering Buildings.

Underground communications wires and cables, optical fiber cables, CATV-type coaxial cables, and network-powered broadband communications cables entering buildings shall comply with 800.47(A) and (B). The requirements of 310.10(C) shall not apply to communications wires and cables and CATV-type coaxial cables.

(A) Underground Systems with Electric Light, Power, Class 1, or Non-Power-Limited Fire Alarm Circuit Conductors.

Underground communications wires and cables, conductive optical fiber cables, CATV-type coaxial cables, and network-powered broadband communications cables in a raceway, pedestal, handhole enclosure, or manhole containing electric light, power, Class 1, or non-power-limited fire alarm circuit conductors shall be in a section separated from such conductors by means of brick, concrete, or tile partitions or by means of a suitable barrier.

(B) Direct-Buried Cables and Raceways.

Direct-buried communications wires and cables, conductive optical fiber cables, CATV-type coaxial cables, and network-powered broadband communications cables shall be separated at least 300 mm (12 in.) from conductors of any light or power, non-power-limited fire alarm circuit conductors, or Class 1 circuit.

Exception No. 1: Separation shall not be required if electric service conductors or all the direct-buried communications wires and cables, conductive optical fiber cables, CATV-type coaxial cables, and network-powered broadband communications cables are installed in raceways or have metal cable armor.

Exception No. 2: Separation shall not be required under one of the following conditions:

- (1) If the electric light or power branch-circuit or feeder conductors or Class 1 circuit conductors are installed in a raceway or in metal-sheathed, metal-clad, or Type UF or Type USE cables*
- (2) If all the direct-buried communications wires cables, CATV-type coaxial cables, conductive optical fiber cables, and network-powered broadband communications cables have metal cable armor or are installed in raceway*

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 10:33:06 EST 2024

Committee Statement

Committee Statement: This revision is one of many that complete the inclusion of optical fiber cable in Article 800. The reference to 310.10(C) has not been deleted since it is a current section in the code.

Response Message: FR-7674-NFPA 70-2024

Public Input No. 1186-NFPA 70-2023 [Section No. 800.47]

**First Revision No. 7678-NFPA 70-2024 [Section No. 800.48]****800.48 Unlisted Cables Entering Buildings.**

Unlisted outside plant communications cables- and- , unlisted outside plant CATV-type coaxial cables, unlisted conductive and nonconductive optical fiber cables, shall be permitted to be installed in building spaces other than risers, ducts used for environmental air, plenums used for environmental air, and other spaces used for environmental air if all of the following applies:

- (1) The length of the cable within the building, measured from its point of entrance, does not exceed 15 m (50 ft).
- (2) The cable enters the building from the outside.
- (3) The unlisted outside plant communications cable is terminated in an enclosure or on a listed primary protector, ~~or the~~ .
- (4) The unlisted outside plant CATV type coaxial cable is terminated at a grounding block.
- (5) The unlisted conductive or nonconductive optical fiber cable is terminated in an enclosure.

The point of entrance of the unlisted outside plant communications cables, unlisted outside plant CATV-type coaxial cables, and unlisted outside plant conductive and nonconductive optical fiber cables, shall be permitted to be extended from the penetration of the external wall, roof, or floor slab by continuously enclosing the entrance cables in rigid metal conduit (RMC) or intermediate metal conduit (IMC), without the use of pull or junction boxes, to the point of emergence.

The point of entrance of unlisted nonconductive optical fiber cables shall be permitted to be extended from the penetration of the external wall, roof, or floor slab by continuously enclosing the cables in rigid polyvinyl chloride conduit (PVC), or electrical metallic tubing (EMT), without the use of pull or junction boxes, in spaces other than risers, ducts used for environmental air, plenums used for environmental air, and other spaces used for environmental air.

Informational Note No. 1: Splice cases or terminal boxes, both metallic and plastic types, are typically used as enclosures for splicing or terminating communications cables and optical fiber cables .

Informational Note No. 2: This section limits the length of unlisted outside plant communications cable to 15 m (50 ft) from the point of entrance, while 805.90(B) requires that the primary protector be located as close as practicable to the point of entrance of the cable. Therefore, in installations requiring a primary protector, the outside plant communications cable may not extend 15 m (50 ft) into the building if it is practicable to place the primary protector closer to the point of entrance.

Informational Note No. 3: The primary protector is typically the communications service point where the cabling transitions from unlisted outside plant cable from the communications utility or service provider, to listed premises cabling.

Informational Note No. 4: The ground block is typically the communications service point where the cabling transitions from unlisted outside plant CATV-type coaxial cable from the communications utility or service provider, to listed premises CATV-type coaxial cabling.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 10:57:25 EST 2024

Committee Statement

Committee Statement: There are only three types of unlisted outside plant cables used as entrance cables in communications installations, communications cables, CATV-type coaxial cables, and optical fiber cables. Section 800.48 already covers the installation requirements for unlisted outside plant communications cables and unlisted outside plant CATV-type coaxial cables. This revision enhances usability by bringing into 800.48 the requirements for installing unlisted outside plant optical fiber cables, thereby having the installation requirements for all unlisted entrance cables in one section. The recommended text requirements for optical fiber cables correlate with 770.48. The word “communications” was added to Informational Note No. 2 for clarity, since that Informational Note only applies to communications cables.

The text has been revised to clarify that “continuously enclosing” a cable in a raceway is “without the use of pull or junction boxes”.

Informational notes 3 and 4 have been added to 800.48 to clarify that the protector (for multipair communications cable) and the grounding block (for CATV installations) are typically communications service points.

Response Message: FR-7678-NFPA 70-2024

[Public Input No. 1131-NFPA 70-2023 \[Section No. 800.48\]](#)

**First Revision No. 7677-NFPA 70-2024 [Section No. 800.53]****800.53** Separation from Lightning Conductors.

Where practicable on buildings, a separation of at least 1.8 m (6 ft) shall be maintained between lightning protection conductors and all communications wires and cables, conductive optical fiber cables, and CATV-type coaxial cables.

Informational Note No. 1: See ~~ANSI C2-2017~~ 2023 National Electrical Safety Code® (NESC®), Part 2, *Safety Rules for Overhead Lines*, for additional information regarding overhead (aerial) wires and cables.

Informational Note No. 2: See NFPA 780-2020 2023, *Standard for the Installation of Lightning Protection Systems*, for information on calculation of separation distances using the sideflash equation.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 10:52:14 EST 2024

Committee Statement

Committee Statement: This revision incorporates optical fiber cable in Article 800 to enhance usability of the code.

The reference to the National Electrical Safety Code has been updated. The edition date for NFPA 780A has been updated.

Response Message: FR-7677-NFPA 70-2024

Public Input No. 1542-NFPA 70-2023 [Section No. 800.53]

**First Revision No. 7709-NFPA 70-2024 [Section No. 800.100(A)(3)]****(3) Size.**

The bonding conductor or grounding electrode conductor shall not be smaller than 14 AWG. The bonding conductor or grounding electrode conductor shall have a current-carrying capacity not less than the aggregate of the grounded metal cable sheath member, the metal strength member(s), and the protected conductor(s) of the communications cable, conductive optical fiber cable, or the outer sheath of the coaxial cable, as applicable. The bonding conductor or grounding electrode conductor shall not be required to exceed 6 AWG.

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Tue Jan 16 14:12:58 EST 2024**Committee Statement**

Committee Statement: This revision adds conductive optical fiber cable to the requirements. This aligns with the consolidation efforts of moving communications applications of optical fiber requirements into Article 800.

Response Message: FR-7709-NFPA 70-2024

Public Input No. 1189-NFPA 70-2023 [Section No. 800.100(A)(3)]

**First Revision No. 7956-NFPA 70-2024 [Section No. 800.106(A)(1)]**

[See attached Word Document for revisions to 800.106 (A).]

(1) Mobile Home Service Equipment.

Where there is no mobile home service equipment located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, grounding shall comply with one of the following:

- (1) The following components (if present) shall be connected to a grounding electrode in accordance with 800.100(B)(3):
 - (2) Primary protector grounding terminal
 - (3) Network interface unit
 - (4) Coaxial cable shield ground
 - (5) Surge arrester grounding terminal
 - (6) Network-powered broadband communications cable shield
 - (7) Network-powered broadband communications cable metal members not used for communications or powering
- (8) The non-current-carrying metal members of optical fiber cables shall be connected to a grounding electrode in accordance with 770.106(A)(1). The network terminal, if required to be grounded, shall be connected to a grounding electrode in accordance with 800.106(A)(1)(1). The grounding electrode shall be bonded in accordance with 770.106(B).

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
70_CMP16_FR7956_800.106_A_.docx	Revisions to 800.106(A).	

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Thu Jan 18 11:39:13 EST 2024

Committee Statement

Committee Statement: Several actions have been made to include optical fiber cables in Article 800 when they are used for communications, thereby increasing the usability of Article 800. This revision aligns this effort by removing the reference to article 770. Additionally, an editorial change was made to align with the NEC style manual.

Response Message: FR-7956-NFPA 70-2024

Public Input No. 1991-NFPA 70-2023 [Section No. 800.106(A)(1)]

Public Input No. 1992-NFPA 70-2023 [Section No. 800.106(A)(2)]

(A) Grounding.

Grounding shall comply with 800.106(A)(1) and (A)(2).

(1) Mobile Home Service Equipment.

~~Where~~ If there is no mobile home service equipment located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, grounding shall comply with one of the following:

- (1) The following components (if present) shall be connected to a grounding electrode in accordance with 800.100(B)(3):
 - a. Primary protector grounding terminal
 - b. Network interface unit
 - c. Coaxial cable shield ground
 - d. Surge arrester grounding terminal
 - e. Network-powered broadband communications cable shield
 - f. Network-powered broadband communications cable metal members not used for communications or powering

g. Non-current carrying metal members of conductive optical fiber cables

- ~~(2) The non-current-carrying metal members of optical fiber cables shall be connected to a grounding electrode in accordance with 770.106(A)(1). The network terminal, if required to be grounded, shall be connected to a grounding electrode in accordance with 800.106(A)(1)(1). The grounding electrode shall be bonded in accordance with 770.106(B).~~

(2) Mobile Home Feeder Disconnecting Means.

~~Where~~ If there is no mobile home disconnecting means grounded in accordance with 250.32 and located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, grounding shall comply with one of the following:

- (1) The following components (if present) shall be connected to a grounding electrode in accordance with 800.100(B)(3):
 - a. Primary protector grounding terminal
 - b. Network interface unit
 - c. Network-powered broadband communications shield
 - d. Network-powered broadband communications cable metal members not used for communications or powering

e. Non-current carrying members of conductive optical fiber cables

- ~~(2) The non-current-carrying metal members of optical fiber cables shall be connected to a grounding electrode in accordance with 770.106(A)(2). The network terminal, if required to be grounded, shall be connected to a grounding electrode in accordance with 800.106(A)(2). The grounding electrode shall be bonded in accordance with 770.106(B).~~

**First Revision No. 7743-NFPA 70-2024 [Section No. 800.113(B)(1)]****(1) Uses Permitted.**

The following cables shall be permitted in ducts specifically fabricated for environmental air as described in 300.22(B) if they are directly associated with the air distribution system:

- (1) Plenum cables up to 1.22 m (4 ft) in length
- (2) Plenum, rise riser, general-purpose, and limited-use cables installed in raceways that are installed in compliance with 300.22(B)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 15:59:38 EST 2024

Committee Statement

Committee Statement: Revised text to correct a typo.

Response Message: FR-7743-NFPA 70-2024

Public Input No. 1180-NFPA 70-2023 [Section No. 800.113(B)(1)]

**First Revision No. 7747-NFPA 70-2024 [Section No. 800.113(B)(2)]****(2) Uses Not Permitted.**

The following cables, wires, cable routing assemblies, and communications raceways shall not be permitted in ducts specifically fabricated for environmental air as described in 300.22(B):

- (1) Plenum, riser, and general-purpose communications raceways
- (2) Plenum, riser, and general-purpose cable routing assemblies
- (3) Riser, general-purpose, and limited-use cables
- (4) Type CMUC cables and wires
- (5) Types BMU and BLU cables
- (6) Communications wires
- (7) Hybrid power and communications cables

Informational Note: See NFPA 90A-2024 2024, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, Chapter 10, Electrical and Optical Fiber Wiring and Equipment in Plenums and Ducts, for information on fire protection of wiring installed in fabricated ducts.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 16:03:32 EST 2024

Committee Statement

Committee Statement: Revised informational note to align with the NEC style manual and added a reference to NFPA 90A, Chapter 10 for user clarity.

Response Message: FR-7747-NFPA 70-2024

Public Input No. 24-NFPA 70-2023 [Section No. 800.113(B)(2)]

**First Revision No. 7749-NFPA 70-2024 [Section No. 800.113(C)(2)]****(2) Uses Not Permitted.**

The following cables, wires, cable routing assemblies, and communications raceways shall not be permitted in other spaces used for environmental air as described in 300.22(C):

- (1) Riser, general-purpose, and limited-use cables
- (2) Riser and general-purpose communications raceways
- (3) Riser and general-purpose cable routing assemblies
- (4) Type CMUC cables and wires
- (5) Types BMR, BM, BMU, and BLU cables
- (6) Communications wires
- (7) Hybrid power and communications cables

Informational Note: See NFPA 90A-2024 2024, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, Chapter 10, Electrical and Optical Fiber Wiring and Equipment in Plenums and Ducts, for information on fire protection of wiring installed in other spaces used for environmental air.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 16:07:00 EST 2024

Committee Statement

Committee Statement: Revised informational note to align with the NEC style manual and added a reference to NFPA 90A, Chapter 10 for user clarity.

Response Message: FR-7749-NFPA 70-2024

Public Input No. 25-NFPA 70-2023 [Section No. 800.113(C)(2)]

**First Revision No. 7768-NFPA 70-2024 [Section No. 800.133(A)(1)]****[See attachment for revisions to 800.133 (A)(1).]****(1) Other Circuits.**

Communications cables and CATV-type coaxial cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly together and with jacketed cables of any of the following:

- (1) Class 2 and Class 3 remote-control, signaling, and power-limited circuits in compliance with 645.5(E)(2) or Parts I and II of Article 725
- (2) Power-limited fire alarm systems in compliance with Parts I and III of Article 760
- (3) Nonconductive and conductive optical fiber cables in compliance with Parts I and V of Article 770
- (4) Communications circuits in compliance with Parts I and IV of Articles 800 and 805
- (5) Community antenna television and radio distribution systems in compliance with Parts I and V of Articles 800 and 820
- (6) Low-power network-powered broadband communications circuits in compliance with Parts I and V of Articles 800 and 830

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
70_CMP16_FR7768_800.133_A_1_.docx	Revisions to 800.133(A)(1)	

Submitter Information Verification

Committee: NEC-P16
Submittal Date: Wed Jan 17 00:57:38 EST 2024

Committee Statement

Committee Statement: Revision reflects that cables must be listed and other readability improvements and class 4 cables have been added because they are allowed to be routed within the same raceway as the circuits covered within the 800.133.

Response Message: FR-7768-NFPA 70-2024

[Public Input No. 899-NFPA 70-2023 \[Section No. 800.133\(A\)\(1\)\]](#)

[Public Input No. 1667-NFPA 70-2023 \[Section No. 800.133\(A\)\(1\)\]](#)

[Public Input No. 3930-NFPA 70-2023 \[Section No. 800.133\(A\)\(1\)\]](#)

[Public Input No. 4036-NFPA 70-2023 \[Section No. 800.133\(A\)\(1\)\]](#)

800.133(A)(1) Other Circuits.

~~Communications-Listed communications~~ cables, ~~listed optical fiber cables~~, and ~~listed~~ CATV-type coaxial cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly together and with ~~jacketed cables~~ of any of the following:

- (1) ~~Listed~~ Class 2 and Class 3 remote-control, signaling, and power-limited ~~cables~~ ~~circuits in compliance with 645.5(E)(2) or Parts I and II of Article 725~~
- (2) ~~Listed~~ Class 4 cables
- (~~23~~) ~~Listed~~ ~~Power~~ ~~power~~-limited fire alarm ~~cables~~ ~~systems in compliance with Parts I and III of Article 760~~
- (~~34~~) ~~Listed nonconductive~~ ~~Nonconductive~~ and conductive optical fiber cables ~~in compliance with Parts I and V of Article 770~~
- (~~45~~) ~~Listed communication~~ ~~Communications~~ ~~cables~~ ~~circuits in compliance with Parts I and IV of Articles 800 and 805~~
- (~~56~~) ~~Listed community~~ ~~Community~~ antenna television and radio distribution ~~system~~ ~~coaxial cables~~ ~~systems in compliance with Parts I and V of Articles 800 and 820~~
- (~~67~~) ~~Listed low~~ ~~Low~~-power network-powered broadband communications ~~cables~~ ~~circuits in compliance with Parts I and V of Articles 800 and 830~~

**First Revision No. 7756-NFPA 70-2024 [Section No. 800.133(A)(2)]****(2) Class 2, Class 3, and Class 3-4 Circuits.**

Class 1 circuits shall not be run in the same cable with communications circuits. Class 2 and Class 3 circuit conductors shall be permitted in the same listed communications cable with communications circuits.

Class 4 circuits and communications circuits shall be permitted in the same cable only if the cable is dual listed for Class 4 and communications.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 16:32:01 EST 2024

Committee Statement

Committee Statement: This revision permits Class 4 circuits and communications circuits in the same cable only if the cable is dual listed. Class 4 circuits are prohibited from being run in a communications cable because the communications cable is only rated for 300 volts where as Class 4 circuits are permitted up to 450 volts.

Response Message: FR-7756-NFPA 70-2024

Public Input No. 4175-NFPA 70-2023 [Section No. 800.133(A)(2)]

**First Revision No. 7757-NFPA 70-2024 [Section No. 800.133(A)(3)]**

(3) Electric Light, Power, Class 1, Non-Power-Limited Fire Alarm, and Medium-Power Network-Powered Broadband Communications Circuits in Raceways, Compartments, and Boxes.

Communications wires and cables, conductive optical fiber cables without an armored or metal-clad-type sheath, and CATV-type coaxial cables shall not be placed in any raceway, compartment, outlet box, junction box, or similar fitting with conductors of electric light, power, Class 1, non-power-limited fire alarm, or medium-power network-powered broadband communications circuits.

Exception No. 1: Communications wires and cables and CATV-type coaxial cables shall be permitted to be placed in any raceway, compartment, outlet box, junction box, or other enclosures with conductors of electric light, power, Class 1, non-power-limited fire alarm, or medium-power network-powered broadband communications circuits where all of the conductors of electric light, power, Class 1, non-power-limited fire alarm, and medium-power network-powered broadband communications circuits are separated from all of the communications wires and cables and CATV-type coaxial cables by a permanent barrier or listed divider.

Exception No. 2: Communications wires and cables and CATV-type coaxial cables shall be permitted to be placed in outlet boxes, junction boxes, or similar fittings or compartments with power conductors where such conductors are introduced solely for power supply to the communications and coaxial cable system distribution equipment. The power circuit conductors shall be routed within the enclosure to maintain a minimum 6 mm (1/4 in.) separation from the communications wires and cables and the CATV-type coaxial cables.~~Exception No~~

Exception No. 3: Conductive optical fiber cables contained in an armored or metal-clad-type sheath and nonconductive optical fiber cables shall be permitted to occupy the same cable tray or raceway with conductors for electric light, power, Class 1, non-power-limited fire alarm, Type ITC, or medium-power network-powered broadband communications circuits operating at 1000 volts or less.

Exception No. 4: Separation of circuits shall not be required in elevator traveling cables constructed in accordance with ~~by~~ 620.36.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 16:39:54 EST 2024

Committee Statement

Committee Statement: Section 800.133 covers installation requirements for cables used for communications circuits. Table 800.113 is a list of those cables. In order to coordinate with Table 800.113, this revision expands 800.133 to include conductive optical fiber cables.

Response Message: FR-7757-NFPA 70-2024

Public Input No. 1178-NFPA 70-2023 [Section No. 800.133(A)(3)]

**First Revision No. 7758-NFPA 70-2024 [Section No. 800.133(B)]****(B) Other Applications.**

Communications wires and cables, conductive optical fiber cables without an armored or metal-clad-type sheath, and CATV-type coaxial cables shall be separated at least 50 mm (2 in.) from conductors of any electric light, power, Class 1, non-power-limited fire alarm, or medium-power network-powered broadband communications circuits.

Exception No. 1: Separation shall not be required ~~where~~ if either (1) all of the conductors of electric light, power, Class 1, non-power-limited fire alarm, and medium-power network-powered broadband communications circuits are in a raceway or in metal-sheathed, metal-clad, nonmetallic-sheathed, Type AC or Type UF cables, or (2) all of the communications wires and cables and all of the conductive optical fiber cables without an armored or metal-clad-type sheath, and all of the CATV-type coaxial cables are encased in raceway.

Exception No. 2: Separation shall not be required ~~where~~ if the communications wires and cables, conductive optical fiber cables without an armored or metal-clad-type sheath, and CATV-type coaxial cables are permanently separated from the conductors of electric light, power, Class 1, non-power-limited fire alarm, and medium-power network-powered broadband communications circuits by a continuous and firmly fixed nonconductor, such as porcelain tubes or flexible tubing, in addition to the insulation on the wire.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 16:49:34 EST 2024

Committee Statement

Committee Statement: Section 800.133 covers installation requirements for cables used for communications circuits. Table 800.113 is a list of those cables. In order to coordinate with Table 800.113, this revision expands 800.133 to include conductive optical fiber cables.

Response Message: FR-7758-NFPA 70-2024

Public Input No. 1179-NFPA 70-2023 [Section No. 800.133(B)]

**First Revision No. 7760-NFPA 70-2024 [Section No. 800.133(C)]**

(C) Support of Communications Wires and Cables- and- , Optical Fiber Cables, CATV-Type Coaxial Cables and Network-Powered Broadband Communications Cables .

Raceways shall be used for their intended purpose. Communications wires and cables- and- , optical fiber cables, CATV-type coaxial cables, and network-powered broadband communications cables, shall not be strapped, taped, or attached by any means to the exterior of any raceway as a means of support.

Exception: Overhead (aerial) spans of communications drop wires, communications cables, and optical fiber cables, CATV-type coaxial cables, and network-powered broadband communications cables, shall be permitted to be attached to the exterior of a raceway-type mast intended for the attachment and support of such wires and cables.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 16:56:03 EST 2024

Committee Statement

Committee Statement: Section 800.133 covers installation requirements for cables used for communications circuits. Table 800.113 is a list of those cables. In order to coordinate with Table 800.113, this revision expands 800.133 to include CATV-type coaxial cables, optical fiber cables, and network-powered broadband communications cables.

Response Message: FR-7760-NFPA 70-2024

Public Input No. 1176-NFPA 70-2023 [Section No. 800.133(C)]



First Revision No. 7780-NFPA 70-2024 [Section No. 800.154]

FOR COMMITTEE USE ONLY
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[See attached Word file for revisions to 800.154.]

800.154 Applications of Listed Communications Wires, Cables, and Raceways, and Listed Cable Routing Assemblies.

FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

Permitted and nonpermitted applications of listed communications wires, cables, coaxial cables, network-powered broadband communications system cables and raceways, and listed cable routing assemblies, shall be in accordance with one of the following:

- (1) Listed communications wires and cables as indicated in Table 800.154(a)
- (2) Listed communications raceways as indicated in Table 800.154(b)
- (3) Listed cable routing assemblies as indicated in Table 800.154(c)

The permitted applications shall be subject to the installation requirements of 800.110 and 800.113.

Table 800.154(a) Applications of Listed Communications Wires, Cables, and Network-Powered Broadband Communications System Cables in Buildings

<u>Applications</u>		<u>Wire and Cable Type</u>							
		<u>Plenum</u>	<u>Riser</u>	<u>BMR</u>	<u>General-Purpose</u>	<u>BM</u>	<u>Limited-Use</u>	<u>Undercarpet</u>	<u>BM BL</u>
In ducts specifically fabricated for environmental air as described in 300.22(B)	In fabricated ducts	Y	N	N	N	N	N	N	N
	In metal raceway that complies with 300.22(B)	Y	Y	Y	Y	Y	Y	N	N
In other spaces used for environmental air (plenums) as described in 300.22(C)	In other spaces used for environmental air	Y	N	N	N	N	N	N	N
	In metal raceway that complies with 300.22(C)	Y	Y	Y	Y	Y	Y	N	N
	In plenum communications raceways	Y	N	N	N	N	N	N	N
	In plenum cable routing assemblies	Y	N	N	N	N	N	N	N
	Supported by open metal cable trays	Y	N	N	N	N	N	N	N
	Supported by solid bottom metal cable trays with solid metal covers	Y	Y	Y	Y	Y	Y	N	N
In risers	In vertical runs	Y	Y	Y	N	N	N	N	N
	In metal raceways	Y	Y	Y	Y	Y	Y	N	N
	In fireproof shafts	Y	Y	Y	Y	Y	Y	N	N
	In plenum communications raceways	Y	Y	N	N	N	N	N	N

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Applications	Wire and Cable Type							
	Plenum	Riser	BMR	General-Purpose	BM	Limited-Use	Undercarpet	BM BL
In plenum cable routing assemblies	Y	Y	N	N	N	N	N	N
In riser communications raceways	Y	Y	N	N	N	N	N	N
In riser cable routing assemblies	Y	Y	N	N	N	N	N	N
In one- and two-family dwellings	Y	Y	Y	Y	Y	Y	N	N
Within buildings in other than air-handling spaces and risers	General	Y	Y	Y	Y	Y	N	N
	In one- and two-family dwellings	Y	Y	Y	Y	Y	Y	N
	In multifamily dwellings	Y	Y	Y	Y	Y	Y	N
	In nonconcealed spaces	Y	Y	Y	Y	Y	Y	N
	Supported by cable trays	Y	Y	Y	Y	N	N	N
	Under carpet, modular flooring, and planks	N	N	N	N	N	Y	N
	In distributing frames and cross-connect arrays	Y	Y	N	Y	N	N	N
	In rigid metal conduit (RMC) and intermediate metal conduit (IMC)	Y	Y	Y	Y	Y	Y	Y
	In any raceway recognized in Chapter 3	Y	Y	Y	Y	Y	N	N
	In plenum communications raceways	Y	Y	N	Y	N	N	N
	In plenum cable routing assemblies	Y	Y	N	Y	N	N	N
	In riser communications raceways	Y	Y	N	Y	N	N	N

<u>Applications</u>	<u>Wire and Cable Type</u>							
	<u>Plenum</u>	<u>Riser</u>	<u>BMR</u>	<u>General-Purpose</u>	<u>BM</u>	<u>Limited-Use</u>	<u>Undercarpet</u>	<u>BM BL</u>
In riser cable routing assemblies	Y	Y	N	Y	N	N	N	N
In general-purpose communications raceways	Y	Y	N	Y	N	N	N	N
In general-purpose cable routing assemblies	Y	Y	N	Y	N	N	N	N

Note: An "N" in the table indicates that the cable type shall not be installed in the application. A "Y" indicates that the cable type shall be permitted to be installed in the application subject to the limitations described in 800.113. The Riser column includes all riser cables except BMR, and the General-Purpose column includes all general-purpose cables except BM.

Informational Note No. 1: Part IV of Article 800 covers installation methods within buildings. This table covers the applications of listed communications wires, cables, and raceways in buildings.

Informational Note No. 2: For information on the restrictions to the installation of communications cables in fabricated ducts, see 800.113(B).

Table 800.154(b) Applications of Listed Communications Raceways in Buildings

<u>Applications</u>		<u>Listed Communications Raceway Type</u>		
		<u>Plenum</u>	<u>Riser</u>	<u>General-Purpose</u>
In ducts specifically fabricated for environmental air as described in 300.22(B)	In fabricated ducts	N	N	N
	In metal raceway that complies with 300.22(B)	N	N	N
In other spaces used for environmental air (plenums) as described in 300.22(C)	In other spaces used for environmental air	Y	N	N
	In metal raceway that complies with 300.22(C)	Y	Y	Y
	In plenum cable routing assemblies	N	N	N
	Supported by open metal cable trays	Y	N	N
	Supported by solid bottom metal cable trays with solid metal covers	Y	Y	Y
In risers	In vertical runs	Y	Y	N
	In metal raceways	Y	Y	Y
	In fireproof shafts	Y	Y	Y
	In plenum cable routing assemblies	N	N	N

<u>Applications</u>		<u>Listed Communications Raceway Type</u>		
		<u>Plenum</u>	<u>Riser</u>	<u>General-Purpose</u>
Within buildings in other than air-handling spaces and risers	In riser cable routing assemblies	N	N	N
	In one- and two-family dwellings	Y	Y	Y
	General	Y	Y	Y
	In one- and two-family dwellings	Y	Y	Y
	In multifamily dwellings	Y	Y	Y
	In nonconcealed spaces	Y	Y	Y
	Supported by cable trays	Y	Y	Y
	Under carpet, modular flooring, and planks	N	N	N
	In distributing frames and cross-connect arrays	Y	Y	Y
	In any raceway recognized in Chapter 3	Y	Y	Y
	In plenum cable routing assemblies	N	N	N
	In riser cable routing assemblies	N	N	N
	In general-purpose cable routing assemblies	N	N	N

Note: An "N" in the table indicates that the communications raceway type shall not be installed in the application. A "Y" indicates that the communications raceway type shall be permitted to be installed in the application, subject to the limitations described in 800.110 and 800.113.

Table 800.154(c) Applications of Listed Cable Routing Assemblies in Buildings

<u>Applications</u>		<u>Listed Cable Routing Assembly Type</u>		
		<u>Plenum</u>	<u>Riser</u>	<u>General-Purpose</u>
In ducts specifically fabricated for environmental air as described in 300.22(B)	In fabricated ducts	N	N	N
	In metal raceway that complies with 300.22(B)	N	N	N
In other spaces used for environmental air (plenums) as described in 300.22(C)	In other spaces used for environmental air	Y	N	N
	In metal raceway that complies with 300.22(C)	N	N	N
	In plenum communications raceways	N	N	N
	Supported by open metal cable trays	Y	N	N
	Supported by solid bottom metal cable trays with solid metal covers	N	N	N

		<u>Listed Cable Routing Assembly Type</u>		
		<u>Plenum</u>	<u>Riser</u>	<u>General-Purpose</u>
<u>Applications</u>				
In risers	In vertical runs	Y	Y	N
	In metal raceways	N	N	N
	In fireproof shafts	Y	Y	Y
	In plenum communications raceways	N	N	N
	In riser communications raceways	N	N	N
	In one- and two-family dwellings	Y	Y	Y
Within buildings in other than air-handling spaces and risers	General	Y	Y	Y
	In one- and two-family dwellings	Y	Y	Y
	In multifamily dwellings	Y	Y	Y
	In nonconcealed spaces	Y	Y	Y
	Supported by cable trays	Y	Y	Y
	Under carpet, modular flooring, and planks	N	N	N
	In distributing frames and cross-connect arrays	Y	Y	Y
	In any raceway recognized in Chapter 3	N	N	N
	In plenum communications raceways	N	N	N
	In riser communications raceways	N	N	N
	In general-purpose communications raceways	N	N	N

Note: An “N” in the table indicates that the cable routing assembly type shall not be installed in the application. A “Y” indicates that the cable routing assembly type shall be permitted to be installed in the application subject to the limitations described in 800.113.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
70_CMP16_FR7780_800.154.docx	Revisions to 800.154	
70_CMP16_FR7780_800.154_STAFF_.docx	Revisions to 800.154, including notes or table and figure origins.	
70_CMP16_FR7780_800.154_STAFF.docx	For prod use	

Submitter Information Verification

Committee: NEC-P16
Submittal Date: Wed Jan 17 08:29:29 EST 2024

Committee Statement

Committee Statement: Section 800.113 covers installation requirements for cables used for communications circuits. Table 800.113 is a list of those cables. In order to coordinate with Table 800.113, this revision expands the application requirements in 800.154 to include CATV-type coaxial cables, optical fiber cables, and network-powered broadband communications cables. It also moves the cable substitution hierarchies into the general article (Article 800) and establishes analogous cable substitution hierarchies for communications raceways and cable routing assemblies.

Response Message: FR-7780-NFPA 70-2024

[Public Input No. 2967-NFPA 70-2023 \[Section No. 800.154\]](#)

[Public Input No. 1169-NFPA 70-2023 \[Section No. 800.154\]](#)

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[illegible]

Applications		Wire and Cable Type									
		Plenum	Riser	BM R	General Purpose	BM	Limited-Use	Undercarpet	BM U, BLU	Hybrid Power and Communications Cables	Communications Wires
	Supported by solid bottom metal cable trays with solid metal covers	Y	Y	Y	Y	Y	Y	N	N	N	N
In risers	In vertical runs	Y	Y	Y	N	N	N	N	N	N	N
	In metal raceways	Y	Y	Y	Y	Y	Y	N	N	N	N
	In fireproof shafts	Y	Y	Y	Y	Y	Y	N	N	N	N
	In plenum communications raceways	Y	Y	N	N	N	N	N	N	N	N
	In plenum cable routing assemblies	Y	Y	N	N	N	N	N	N	N	N
	In riser communications raceways	Y	Y	N	N	N	N	N	N	N	N
	In riser cable routing assemblies	Y	Y	N	N	N	N	N	N	N	N
	In one- and two-family dwellings	Y	Y	Y	Y	Y	Y	N	N	Y	N
Within buildings in other than air-handling spaces and risers	General	Y	Y	Y	Y	Y	Y	N	N	N	N
	In one- and two-family dwellings	Y	Y	Y	Y	Y	Y	Y	N	Y	N
	In multifamily dwellings	Y	Y	Y	Y	Y	Y	Y	N	N	N
	In nonconcealed spaces	Y	Y	Y	Y	Y	Y	Y	N	N	N
	Supported by cable trays	Y	Y	Y	Y	Y	N	N	N	N	N
	Under carpet, modular flooring, and planks	N	N	N	N	N	N	Y	N	N	N
	In distributing frames and cross-connect arrays	Y	Y	N	Y	N	N	N	N	N	Y

Applications	Wire and Cable Type									
	Plenum	Riser	BM R	General-Purpose	BM	Limited-Use	Undercarpet	BM U, BLU	Hybrid Power and Communications Cables	Communications Wires
In rigid metal conduit (RMC) and intermediate metal conduit (IMC)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
In any raceway recognized in Chapter 3	Y	Y	Y	Y	Y	Y	N	N	N	Y
In plenum communications raceways	Y	Y	N	Y	N	N	N	N	N	Y
In plenum cable routing assemblies	Y	Y	N	Y	N	N	N	N	N	Y
In riser communications raceways	Y	Y	N	Y	N	N	N	N	N	Y
In riser cable routing assemblies	Y	Y	N	Y	N	N	N	N	N	Y
In general-purpose communications raceways	Y	Y	N	Y	N	N	N	N	N	Y
In general-purpose cable routing assemblies	Y	Y	N	Y	N	N	N	N	N	Y

Note: An "N" in the table indicates that the cable type shall not be installed in the application. A "Y" indicates that the cable type shall be permitted to be installed in the application subject to the limitations described in 800.113. The Riser column includes all riser cables except BMR, and the General-Purpose column includes all general-purpose cables except BM.

Informational Note No. 1: [Part IV of Article 800 - Part IV](#) covers installation methods within buildings. This table covers the applications of listed communications wires, cables, and raceways in buildings.

Informational Note No. 2: [See 800.113\(B\) for restrictions](#). ~~For information on the restrictions to the installation of communications cables in fabricated ducts, see 800.113(B).~~

Table 800.154(b) Applications of Listed Communications Raceways in Buildings

Applications		Listed Communications Raceway Type		
		Plenum	Riser	General-Purpose
In ducts specifically fabricated for environmental air as described in 300.22(B)	In fabricated ducts	N	N	N
	In metal raceway that complies with 300.22(B)	N	N	N
In other spaces used for environmental air (plenums) as described in 300.22(C)	In other spaces used for environmental air	Y	N	N

Applications		Listed Communications Raceway Type		
		Plenum	Riser	General-Purpose
	In metal raceway that complies with 300.22(C)	Y	Y	Y
	In plenum cable routing assemblies	N	N	N
	Supported by open metal cable trays	Y	N	N
	Supported by solid bottom metal cable trays with solid metal covers	Y	Y	Y
In risers	In vertical runs	Y	Y	N
	In metal raceways	Y	Y	Y
	In fireproof shafts	Y	Y	Y
	In plenum cable routing assemblies	N	N	N
	In riser cable routing assemblies	N	N	N
	In one- and two-family dwellings	Y	Y	Y
Within buildings in other than air-handling spaces and risers	General	Y	Y	Y
	In one- and two-family dwellings	Y	Y	Y
	In multifamily dwellings	Y	Y	Y
	In nonconcealed spaces	Y	Y	Y
	Supported by cable trays	Y	Y	Y
	Under carpet, modular flooring, and planks	N	N	N
	In distributing frames and cross-connect arrays	Y	Y	Y
	In any raceway recognized in Chapter 3	Y	Y	Y
	In plenum cable routing assemblies	N	N	N
	In riser cable routing assemblies	N	N	N
	In general-purpose cable routing assemblies	N	N	N

Note: An "N" in the table indicates that the communications raceway type shall not be installed in the application. A "Y" indicates that the communications raceway type shall be permitted to be installed in the application, subject to the limitations described in 800.110 and 800.113.

Table 800.154(c) Applications of Listed Cable Routing Assemblies in Buildings

Applications		Listed Cable Routing Assembly Type		
		Plenum	Riser	General-Purpose
In ducts specifically fabricated for environmental air as described in 300.22(B)	In fabricated ducts	N	N	N
	In metal raceway that complies with 300.22(B)	N	N	N
In other spaces used for environmental air (plenums) as described in 300.22(C)	In other spaces used for environmental air	Y	N	N
	In metal raceway that complies with 300.22(C)	N	N	N
	In plenum communications raceways	N	N	N

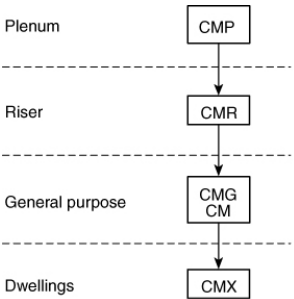
		Listed Cable Routing Assembly Type		
		Plenum	Riser	General-Purpose
Applications	Supported by open metal cable trays	Y	N	N
	Supported by solid bottom metal cable trays with solid metal covers	N	N	N
In risers	In vertical runs	Y	Y	N
	In metal raceways	N	N	N
	In fireproof shafts	Y	Y	Y
	In plenum communications raceways	N	N	N
	In riser communications raceways	N	N	N
	In one- and two-family dwellings	Y	Y	Y
Within buildings in other than air-handling spaces and risers	General	Y	Y	Y
	In one- and two-family dwellings	Y	Y	Y
	In multifamily dwellings	Y	Y	Y
	In nonconcealed spaces	Y	Y	Y
	Supported by cable trays	Y	Y	Y
	Under carpet, modular flooring, and planks	N	N	N
	In distributing frames and cross-connect arrays	Y	Y	Y
	In any raceway recognized in Chapter 3	N	N	N
	In plenum communications raceways	N	N	N
	In riser communications raceways	N	N	N
	In general-purpose communications raceways	N	N	N

Note: An "N" in the table indicates that the cable routing assembly type shall not be installed in the application. A "Y" indicates that the cable routing assembly type shall be permitted to be installed in the application subject to the limitations described in 800.113.

Table 800.154(d) Cable Substitutions

Cable Type	Permitted Substitutions
CMR	CMP
CMG, CM	CMP, CMR
CMX	CMP, CMR, CMG, CM

Figure 800.154(d) Cable Substitution Hierarchy.



Type CM—Communications cables

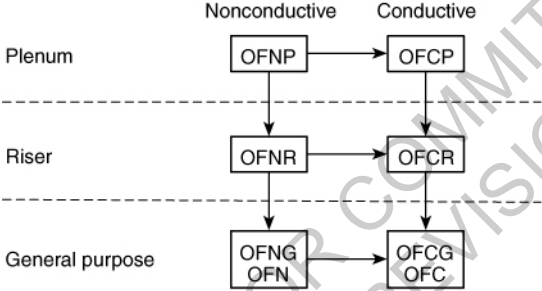
A Cable A shall be permitted to be used in place of cable B.

B

Table 800.154(e) Optical Fiber Cable Substitutions

Cable Type	Permitted Substitutions
OFNP	None
OFCP	OFNP
OFNR	OFNP
OFNR	OFNP, OFCP, OFNR
OFNG, OFN	OFNP, OFNR
OFNG, OFN	OFNP, OFCP, OFNR, OFCR, OFNG, OFN

Figure 800.154(e) Optical Fiber Cable Substitution Hierarchy.

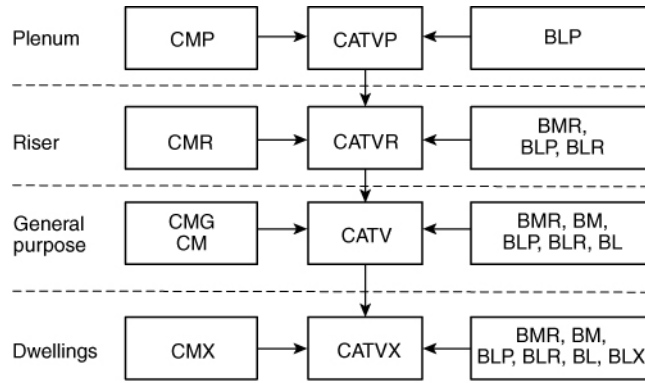


A → **B** Cable A shall be permitted to be used in place of cable B.

Table 800.154(f) CATV-type Cable 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

Figure 800.154(f) CATV-type Coaxial Cable Substitution Hierarchy.



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

Table 800.154(g) Network-Powered Broadband Cable Substitutions

Cable Type	Permitted Cable Substitutions
<u>BM</u>	<u>BMR</u>
<u>BLP</u>	<u>CMP, CL3P</u>
<u>BLR</u>	<u>CMP, CL3P, CMR, CL3R, BLP, BMR</u>
<u>BL</u>	<u>CMP, CMR, CM, CMG, CL3P, CL3R, CL3, BMR, BM, BLP, BLR</u>
<u>BLX</u>	<u>CMP, CMR, CM, CMG, CMX, CL3P, CL3R, CL3, CL3X, BMR, BM, BLP, BRP, BL</u>

Table 800.154(h) Listed Communications Raceways Substitutions

Raceway Type	Permitted Substitutions
<u>Riser Communications Raceway</u>	<u>Plenum Communications Raceway</u>
<u>General-Purpose Communications Raceway</u>	<u>Plenum Communications Raceway, Riser Communications Raceway</u>

Table 800.154(i) Listed Cable Routing Assembly Substitutions

Raceway Type	Permitted Substitutions
<u>Riser Cable Routing Assembly</u>	<u>Plenum Cable Routing Assembly</u>
<u>General-Purpose Cable Routing Assembly</u>	<u>Plenum Cable Routing Assembly, Riser Cable Routing Assembly</u>

**First Revision No. 7793-NFPA 70-2024 [Section No. 800.170]****800.170** Plenum Cable Ties.

Cable ties intended for use in other space used for environmental air (plenums) shall be listed as having low smoke and heat release properties.

Informational Note: See NFPA 90A-2018 2024 , *Standard for the Installation of Air-Conditioning and Ventilating Systems*, and ANSI/ UL 2043-2013 2023 , *Standard for Safety Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces*, for information on listing discrete products as having low smoke and heat release properties.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 09:44:38 EST 2024

Committee Statement

Committee Statement: Per the NFPA manual of style the revision dates are being updated to the latest revision and the ANSI references are being deleted for consistency with other NFPA documents.

Response Message: FR-7793-NFPA 70-2024

Public Input No. 26-NFPA 70-2023 [Section No. 800.170]

**First Revision No. 7796-NFPA 70-2024 [Section No. 800.171]****800.171** Communications Equipment.

Communications equipment shall be listed as being suitable for electrical connection to a communications network.

Informational Note No. 1: See ANSI/ UL 60950-1-2014 2019 , *Standard for Safety of Information Technology Equipment*, ANSI/ UL 1863-2012 2019 , *Standard for Safety Communications Circuit Accessories*, or ANSI/UL 62368-1 -2014 or ANSI/ UL 62368-1-2018 2021 , *Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements*.

Informational Note No. 2: See ANSI/ ATIS 0600337-2016, *Requirements for Maximum Voltage, Current, and Power Levels Used in Communications Circuits*, for additional information regarding voltages, currents, and power allowed on communications circuits.

Submitter Information Verification

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Committee Statement

Committee Statement: Per the NFPA manual of style the revision dates are being updated to the latest revision and the ANSI references are being deleted for consistency with other NFPA documents.

Response Message: FR-7796-NFPA 70-2024

Public Input No. 1142-NFPA 70-2023 [Section No. 800.171]



**First Revision No. 7841-NFPA 70-2024 [Sections 800.179(A), 800.179(B),
800.179(C), 800.179(D), 80...]**

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[Please see attached word file for changes to 800.179 (A) to 800.179(J)]**Sections****800.179(A), 800.179(B), 800.179(C), 800.179(D), 800.179(E), 800.179(F), 800.179(G), 800.179(H)****(A) Plenum Cables.**

Type CMP communications plenum cables, Type CATVP community antenna television plenum coaxial cables, and Type BLP network-powered broadband communication low-power plenum cables shall be listed as being suitable for use in ducts, plenums, and other spaces used for environmental air and shall also be listed as having adequate fire-resistant and low-smoke-producing characteristics.

Informational Note: See NFPA 262-2019, *Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces*, for one method of defining a cable that is low-smoke-producing cable and fire-resistant cable so that the cable exhibits a maximum peak optical density of 0.50 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 1.52 m (5 ft).

(B) Riser Cables.

Type CMR communications riser cables, Type CATVR community antenna television riser coaxial cables, Type BMR network-powered broadband communications medium-power riser cables, and Type BLR network-powered broadband communications low-power riser cables shall be listed as being suitable for use in a vertical run in a shaft or from floor to floor and shall also be listed as having fire-resistant characteristics capable of preventing the carrying of fire from floor to floor.

Informational Note: See ANSI/UL 1666-2017, *Standard Test for Flame Propagation Height of Electrical and Optical-Fiber Cable Installed Vertically in Shafts*, for one method of defining fire-resistant characteristics of the cable capable of preventing the carrying of fire from floor to floor.

(C) General-Purpose Cables.**(1) Type CMG.**

Type CMG communications general-purpose cables shall be listed as being suitable for general-purpose use, with the exception of risers and plenums, and shall also be listed as being resistant to the spread of fire.

Informational Note: See CSA Vertical Flame Test — Cables in Cable Trays as described in CSA C22.2 No. 0.3-09 (R2019), *Test Methods for Electrical Wires and Cables*, for one method of defining resistance to the spread of fire where the damage (char length) of the cable does not exceed 1.5 m (4 ft 11 in.) or FT4 Flame Test in ANSI/UL 1685-2015, *Standard for Safety for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*. The smoke measurements in the test methods are not applicable.

(2) Types CM, CATV, BM, and BL.

Type CM communications general-purpose cables, Type CATV community antenna television coaxial general-purpose cables, Type BM network-powered broadband communications medium-power general-purpose cables, and Type BL network-powered broadband communications low-power general-purpose cables shall be listed as being suitable for general-purpose use, with the exception of risers and plenums, and shall also be listed as being resistant to the spread of fire.

Informational Note: See UL Flame Exposure in ANSI/UL 1685-2015, *Standard for Safety for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*, for one method of defining resistance to the spread of fire where the damage (char length) of the cable does not to exceed 244 cm (8 ft 0 in.). The smoke measurements in the test method are not applicable.

(D) Limited-Use Cables.

Type CMX limited-use communications cables, Type CATVX limited-use community antenna television coaxial cables, and Type BLX limited-use network-powered broadband low-power cables shall be listed as being suitable for use in dwellings and for use in raceway and shall also be listed as being resistant to flame spread.

Informational Note: See ANSI/UL 2556, *Standard for Wire and Cable Test Method*, for one method of determining that cable is resistant to flame spread is by testing the cable to the FV-2/VW-1 flame test.

(E) Circuit Integrity (CI) Cable, Fire-Resistive Cable System, or Electrical Circuit Protective System.

Cables that are used for survivability of critical circuits under fire conditions shall be listed and meet either 800.179(E)(1), (E)(2), or (E)(3).

(1) CI Cables.

Cables specified in 800.179(A) through (C) and used for survivability of critical circuits shall be marked with the additional classification using the suffix "CI." In order to maintain its listed fire rating, CI cable shall only be installed in free air in accordance with 800.24. CI cables shall only be permitted to be installed in a raceway where specifically listed and marked as part of a fire-resistive cable system as covered in 800.179(E)(2).

Informational Note: See UL 2196, *Standard for Fire Test for Circuit Integrity of Fire-Resistant Power, Instrumentation, Control, and Data Cables*, for one method of defining CI cable by establishing a minimum 2-hour fire resistance rating for the cable as specified in UL 444, *Standard for Safety Communications Cables*.

(2) Fire-Resistive Cable Systems.

Cables specified in 800.179(A) through (C) and 800.179(E)(1) that are part of an electrical circuit protective system shall be fire-resistive cable identified with the protective system number on the product, or on the smallest unit container in which the product is packaged, and shall be installed in accordance with the listing of the protective system.

Informational Note No. 1: See UL 2196, *Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables*, for one method of defining an electrical circuit protective system rating for the system. UL *Guide Information for Electrical Circuit Integrity Systems (FHIT)* contains information to identify the system and its installation limitations to maintain a minimum fire-resistive rating.

Informational Note No. 2: The listing organization provides information for electrical circuit protective systems (FHIT), including installation requirements for maintaining the fire rating.

(3) Electrical Circuit Protective System.

Protectants for cables specified in 800.179(A) through (E), which are part of an electrical circuit protective system, shall be identified with the protective system identifier and hourly rating marked on the protectant or the smallest unit container and installed in accordance with the listing of the system.

Informational Note: See UL 1724, *Fire Tests for Electrical Circuit Protective Systems*, for one method of defining an electrical circuit protective system. UL *Guide Information for Electrical Circuit Integrity Systems (FHIT)* contains information to identify the system and its installation limitations to maintain the fire-resistive rating.

(F) Types CMP-LP, CMR-LP, CMG-LP, and CM-LP Limited Power (LP) Cables.

Types CMP-LP, CMR-LP, CMG-LP, and CM-LP communications limited power cables shall be listed as suitable for carrying power and data up to a specified current limit for each conductor without exceeding the temperature rating of the cable where the cable is installed in cable bundles in free air or installed within a raceway, cable tray, or cable routing assembly. The cables shall be marked with the suffix “-LP(XXA),” where XX designates the current limit in amperes per conductor.

Informational Note: An example of the marking on a communications cable with an LP rating is “CMP-LP (0.6A)(75°C) 23 AWG 4 pair,” which indicates that it is a 4-pair plenum cable with 23 AWG conductors, a temperature rating of 75°C, and a current limit of 0.6 amperes.

(G) Type CMUC Undercarpet Wires and Cables.

Type CMUC undercarpet communications wires and cables shall be listed as being suitable for undercarpet use and shall also be listed as being resistant to flame spread.

Informational Note: See ANSI/UL 2556, *Standard for Wire and Cable Test Methods*, for one method of determining that cable is resistant to flame spread in accordance with the FV-2/VW-1 flame test.

(H) Communications Wires.

Communications wires, such as distributing frame wire and jumper wire, shall be listed as being resistant to the spread of fire.

Informational Note No. 1: See UL Flame Exposure, Vertical Flame Tray Test in ANSI/UL 1685-2015, *Standard for Safety for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*, for one method of defining *cable flame resistance to the spread of fire* where the cables do not spread fire to the top of the tray. The smoke measurements in the test method are not applicable.

Informational Note No. 2: See CSA Vertical Flame Test — Cables in Cable Trays, as described in CSA C22.2 No. 0.3-09 (R2019), *Test Methods for Electrical Wires and Cables*, for another method of defining *resistance to the spread of fire* is for the damage (char length) of the cable to not exceed 1.5 m (4 ft 11 in.).

(I) Optional Markings.

Cables shall be permitted to be surface marked to indicate special characteristics of the cable materials.

Informational Note: These markings can include, but are not limited to, markings for limited-smoke, halogen-free, low-smoke halogen-free, and sunlight resistance.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
70_CMP16_FR7841_800.179.docx	Revisions to 800.179(A) through 800.179(J).	

Submitter Information Verification

Committee: NEC-P16
Submittal Date: Wed Jan 17 12:44:40 EST 2024

Committee Statement

Committee Statement: 800.179 (A)-(I) has been revised to align with optical fiber cable type requirements that have been included in Article 800. Listed cables must be marked, so the requirements and tables which identify the marking of cables have not been included. Revision dates for referenced standards have been updated per the NFPA manual of style.

Response FR-7841-NFPA 70-2024

Message:

[Public Input No. 1157-NFPA 70-2023 \[Section No. 800.179\]](#)

[Public Input No. 906-NFPA 70-2023 \[Section No. 800.179\(A\)\]](#)

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(A) Plenum Cables.

Type CMP communications plenum cables, Types OFNP and OFCP nonconductive and conductive optical fiber plenum cables, Type CATVP community antenna television plenum coaxial cables, and Type BLP network-powered broadband communication low-power plenum cables shall be listed as being suitable for use in ducts, plenums, and other spaces used for environmental air and shall also be listed as having adequate fire-resistant and low-smoke-producing characteristics.

Informational Note: See NFPA 262-~~2014~~2023, *Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces*, for one method of defining a cable that is low-smoke-producing cable and fire-resistant cable so that the cable exhibits a maximum peak optical density of 0.50 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 1.52 m (5 ft).

(B) Riser Cables.

Type CMR communications riser cables, Types OFNR and OFCR nonconductive and conductive optical fiber riser cables, Type CATVR community antenna television riser coaxial cables, Type BMR network-powered broadband communications medium-power riser cables, and Type BLR network-powered broadband communications low-power riser cables shall be listed as being suitable for use in a vertical run in a shaft or from floor to floor and shall also be listed as having fire-resistant characteristics capable of preventing the carrying of fire from floor to floor.

Informational Note: See ~~ANSI/UL 1666-2017~~2021, *Standard Test for Flame Propagation Height of Electrical and Optical-Fiber Cable Installed Vertically in Shafts*, for one method of defining fire-resistant characteristics of the cable capable of preventing the carrying of fire from floor to floor.

(C) General-Purpose Cables.

(1) Type CMG, OFNG and OFCG.

Type CMG communications general-purpose cables and Types OFNG and OFCG nonconductive and conductive general-purpose optical fiber cables, shall be listed as being suitable for general-purpose use, with the exception of risers and plenums, and shall also be listed as being resistant to the spread of fire.

Informational Note: See CSA Vertical Flame Test — Cables in Cable Trays as described in CSA C22.2 No. 0.3-09 (R2019), *Test Methods for Electrical Wires and Cables*, for one method of defining resistance to the spread of fire where the damage (char length) of the cable does not exceed 1.5 m (4 ft 11 in.) or FT4 Flame Test in ~~ANSI/UL 1685-2015~~2020, *Standard for Safety for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*. The smoke measurements in the test methods are not applicable.

(2) Types CM, OFN, OFC, CATV, BM, and BL.

Type CM communications general-purpose cables, Types OFN and OFC nonconductive and conductive general-purpose optical fiber cables, Type CATV community antenna television coaxial general-purpose cables, Type BM network-powered broadband communications medium-power general-purpose cables, and Type BL network-powered broadband communications low-power general-purpose cables shall be listed as being suitable for general-purpose use, with the exception of risers and plenums, and shall also be listed as being resistant to the spread of fire.

Informational Note: See UL Flame Exposure in ~~ANSI/UL 1685-2015~~2020, *Standard for Safety for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*, for one method of defining resistance to the spread of fire where the damage (char length) of the cable does not to exceed 244 cm (8 ft 0 in.). The smoke measurements in the test method are not applicable.

(D) Limited-Use Cables.

Type CMX limited-use communications cables, Type CATVX limited-use community antenna television coaxial cables, and Type BLX limited-use network-powered broadband low-power cables shall be listed as being suitable for use in dwellings and for use in raceway and shall also be listed as being resistant to flame spread.

Informational Note: See ~~ANSI/UL 2556~~, *Standard for Wire and Cable Test ~~Method~~Methods*, for one method of determining that cable is resistant to flame spread is by testing the cable to the FV-2/VW-1 flame test.

(E) Circuit Integrity (CI) Cable, Fire-Resistive Cable System, or Electrical Circuit Protective System.

Cables that are used for survivability of critical circuits under fire conditions shall be listed and meet either 800.179(E)(1), (E)(2), or (E)(3).

(1) CI Cables.

Cables specified in 800.179(A) through (C) and used for survivability of critical circuits shall be marked with the additional classification using the suffix "CI." In order to maintain its listed fire rating, CI cable shall only be installed in free air in accordance with 800.24. CI cables shall only be permitted to be installed in a raceway where specifically listed and marked as part of a fire-resistive cable system as covered in 800.179(E)(2).

Informational Note: See UL 2196, *Standard for Fire Test for Circuit Integrity of Fire-Resistant Power, Instrumentation, Control, and Data Cables*, for one method of defining CI cable by establishing a minimum 2-hour fire resistance rating for the cable as specified in UL 444, *Standard for Safety Communications Cables*.

(2) Fire-Resistive Cable Systems.

Cables specified in 800.179(A) through (C) and 800.179(E)(1) that are part of an electrical circuit protective system shall be fire-resistive cable identified with the protective system number on the product, or on the smallest unit container in which the product is packaged, and shall be installed in accordance with the listing of the protective system.

Informational Note No. 1: See UL 2196, *Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables*, for one method of defining an electrical circuit protective system rating for the system. UL *Guide Information for Electrical Circuit Integrity Systems (FHIT)* contains information to identify the system and its installation limitations to maintain a minimum fire-resistive rating.

Informational Note No. 2: The listing organization provides information for electrical circuit protective systems (FHIT), including installation requirements for maintaining the fire rating.

(3) Electrical Circuit Protective System.

Protectants for cables specified in 800.179(A) through (E), which are part of an electrical circuit protective system, shall be identified with the protective system identifier and hourly rating marked on the protectant or the smallest unit container and installed in accordance with the listing of the system.

Informational Note: See UL 1724, *Fire Tests for Electrical Circuit Protective Systems*, for one method of defining an electrical circuit protective system. UL *Guide Information for Electrical Circuit Integrity Systems (FHIT)* contains information to identify the system and its installation limitations to maintain the fire-resistive rating.

(F) Types CMP-LP, CMR-LP, CMG-LP, and CM-LP Limited Power (LP) Cables.

Types CMP-LP, CMR-LP, CMG-LP, and CM-LP communications limited power cables shall be listed as suitable for carrying power and data up to a specified current limit for each conductor without exceeding the temperature rating of the cable where the cable is installed in cable bundles in free air or installed within a raceway, cable tray, or cable routing assembly. The cables shall be marked with the suffix "-LP(XXA)," where XX designates the current limit in amperes per conductor.

Informational Note: An example of the marking on a communications cable with an LP rating is "CMP-LP (0.6A)(75°C) 23 AWG 4 pair," which indicates that it is a 4-pair plenum cable with 23 AWG conductors, a temperature rating of 75°C, and a current limit of 0.6 amperes.

(G) Field-Assembled Optical Fiber Cables.

Field-assembled optical fiber cable shall comply with the following:

- (1) The specific combination of jacket and optical fibers intended to be installed as a field-assembled optical fiber cable shall be one of the optical fiber cable types in 800.179(A), (B), or (D).
- (2) The jacket of a field-assembled optical fiber cable shall have a surface marking indicating the specific optical fibers with which it is identified for use.
- (3) The optical fibers shall have a permanent marking, such as a marker tape, indicating the jacket with which they are identified for use.
- (4) The jacket without fibers shall meet the listing requirements for communications raceways in 800.182(A), 800.182(B), or 800.182(C) in accordance with the cable marking.

(GH) Type CMUC Undercarpet Wires and Cables.

Type CMUC undercarpet communications wires and cables shall be listed as being suitable for undercarpet use and shall also be listed as being resistant to flame spread.

Informational Note: See ~~ANSI/UL 2556, 2021, Standard for Wire and Cable Test Methods~~, for one method of determining that cable is resistant to flame spread in accordance with the FV-2/VW-1 flame test.

(HI) Communications Wires.

Communications wires, such as distributing frame wire and jumper wire, shall be listed as being resistant to the spread of fire.

Informational Note No. 1: See UL Flame Exposure, Vertical Flame Tray Test in ~~ANSI/UL 1685-2015~~2020, *Standard for Safety for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables*, for one method of defining cable flame resistance to the spread of fire where the cables do not spread fire to the top of the tray. The smoke measurements in the test method are not applicable.

Informational Note No. 2: See CSA Vertical Flame Test — Cables in Cable Trays, as described in CSA C22.2 No. 0.3-09 (R2019), *Test Methods for Electrical Wires and Cables*, for another method of defining resistance to the spread of fire is for the damage (char length) of the cable to not exceed 1.5 m (4 ft 11 in.).

(1) Optional Markings.

Cables shall be permitted to be surface marked to indicate special characteristics of the cable materials.

Informational Note: These markings can include, but are not limited to, markings for limited-smoke, halogen-free, low-smoke halogen-free, and sunlight resistance.

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First Revision No. 7800-NFPA 70-2024 [Section No. 800.179 [Excluding any Sub-Sections]]

Communications wires and cables, community antenna television cables, and network-powered broadband communications cables shall be listed in accordance with 800.179(A) through (L) and shall have a temperature rating of not less than 60°C (140°F). The temperature rating shall be marked on the jacket of cables that have a temperature rating exceeding 60°C (140°F). Conductors in communications cables, other than in a coaxial cable, shall be copper. Cables shall be permitted to contain optical fibers. Cables containing optical fibers shall be marked with the suffix "-OF."

Communications wires and cables and network-powered communications cables shall have a voltage rating of not less than 300 volts; the insulation for the individual conductors, other than the outer conductor of a coaxial cable, shall be rated for 300 volts minimum. The cable voltage rating shall not be marked on the cable or on the under-carpet communications wire.

Exception: Voltage markings shall be permitted where the cable has multiple listings and voltage marking is required for one or more of the listings.

Informational Note No. 1: Voltage markings on cables could be misinterpreted to suggest that the cables may be suitable for Class 1, electric light, and power applications.

Informational Note No. 2: See UL 444-2017 2023, *Standard for Communications Cables*, for information on communications cables.

Informational Note No. 3: See UL1655-2009 2020, *Standard for Community-Antenna Television Cables*, for information on community-antenna television cables.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 09:57:12 EST 2024

Committee Statement

Committee Statement: Per the NFPA manual of style the revision dates are being updated to the latest revision and revised UL titles for consistency with other NFPA documents.

Response Message: FR-7800-NFPA 70-2024

Public Input No. 905-NFPA 70-2023 [Section No. 800.179 [Excluding any Sub-Sections]]

**First Revision No. 7712-NFPA 70-2024 [Section No. 800.180]**

800.180— [Move 800.180 to 800.100(E), after 800.100(D) and before 800.106.]

800.100 (E) _ Grounding Devices.

Where bonding or grounding is required, devices used to connect a shield, a sheath, or non-current-carrying metallic members of a cable to a bonding conductor or grounding electrode conductor shall be listed or be part of listed equipment.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 14:16:39 EST 2024

Committee Statement

Committee Statement: Section 800.180 for Grounding Devices in Part V Listing requirements, requires that the grounding device be a listed device or be part of listed equipment. This requirement is not a listing requirement, but an installation requirement and has therefore been moved to Part III, Grounding Methods.

Response Message: FR-7712-NFPA 70-2024

Public Input No. 201-NFPA 70-2023 [Section No. 800.180]

Public Input No. 200-NFPA 70-2023 [New Section after 800.100(D)]

**First Revision No. 7802-NFPA 70-2024 [Section No. 800.182(A)]****(A) Plenum Cable Routing Assemblies and Plenum Communications Raceways.**

Plenum cable routing assemblies and plenum communications raceways shall be listed as having adequate fire-resistant and low-smoke-producing characteristics.

Informational Note No. 1: See ASTM E84-19B 23a , *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723-2018 2023 , *Standard Test Method for Surface Burning Characteristics of Building Materials*, for one method of defining cable routing assemblies and communications raceways that have adequate fire-resistant and low-smoke-producing characteristics and exhibit a maximum flame spread index of 25 and a maximum smoke developed index of 50.

Informational Note No. 2: See NFPA 262-2019 2023 , *Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces*, for another method of defining communications raceways that have adequate fire-resistant and low-smoke-producing characteristics and exhibit a maximum peak optical density of 0.50 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 1.52 m (5 ft) or less.

Informational Note No. 3: See 4.3.11.2.6 or 4.3.11.5.5 of NFPA 90A-2021 2024 , *Standard for the Installation of Air-Conditioning and Ventilating Systems*, for information on materials exposed to the airflow in ceiling cavity and raised floor plenums.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 10:04:31 EST 2024

Committee Statement

Committee Statement: Per the NFPA manual of style the revision dates are being updated to the latest revisions.

Response Message: FR-7802-NFPA 70-2024

Public Input No. 1140-NFPA 70-2023 [Section No. 800.182 [Excluding any Sub-Sections]]

Public Input No. 27-NFPA 70-2023 [Section No. 800.182(A)]

Public Input No. 1354-NFPA 70-2023 [Section No. 800.182(A)]

Public Input No. 1139-NFPA 70-2023 [Section No. 800.182(B)]

Public Input No. 1138-NFPA 70-2023 [Section No. 800.182(C)]

**First Revision No. 7552-NFPA 70-2024 [Section No. 805.18]**

805.18 – Installation of Equipment. **[Move section to come after 800.1]**

800.2 – Listing.

Equipment electrically connected to a communications network shall be listed in accordance with 800.171.

Exception: This listing requirement shall not apply to test equipment that is intended for temporary connection to a telecommunications network by qualified persons during the course of installation, maintenance, or repair of telecommunications equipment or systems.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 12:35:11 EST 2024

Committee Statement

Committee Statement: The requirement to use listed equipment is a general requirement and has been moved to Section 800.2. This aligns with the NFPA manual of style.

Response Message: FR-7552-NFPA 70-2024

[Public Input No. 1183-NFPA 70-2023 \[Section No. 805.18\]](#)

[Public Input No. 1182-NFPA 70-2023 \[New Section after 800.3\]](#)

**First Revision No. 7722-NFPA 70-2024 [Section No. 805.90(A)(1)]****(1) Fuseless Primary Protectors.**

Fuseless-type primary protectors shall be permitted under any of the following conditions:

- (1) Where conductors enter a building through a cable with grounded metallic sheath member(s) and where the conductors in the cable safely fuse on all currents greater than the current-carrying capacity of the primary protector and of the primary protector bonding conductor or grounding electrode conductor
- (2) Where insulated conductors in accordance with 805.50(A) are used to extend circuits to a building from a cable with an effectively grounded metallic sheath member(s) and where the conductors in the cable or cable stub, or the connections between the insulated conductors and the plant exposed to accidental contact with electric light or power conductors operating at greater than 300 volts to ground, safely fuse on all currents greater than the current-carrying capacity of the primary protector, or the associated insulated conductors and of the primary protector bonding conductor or grounding electrode conductor
- (3) Where insulated conductors in accordance with 805.50(A) or (B) are used to extend circuits to a building from other than a cable with metallic sheath member(s), where (a) the primary protector is listed as being suitable for this purpose for application with circuits extending from other than a cable with metallic sheath members and (b) the connections of the insulated conductors to the plant exposed to accidental contact with electric light or power conductors operating at greater than 300 volts to ground or the conductors of the plant exposed to accidental contact with electric light or power conductors operating at greater than 300 volts to ground safely fuse on all currents greater than the current-carrying capacity of the primary protector, or associated insulated conductors and of the primary protector bonding conductor or grounding electrode conductor
- (4) Where insulated conductors in accordance with 805.50(A) are used to extend circuits aerially to a building from a buried or underground circuit that is unexposed to accidental contact with electric light or power conductors operating at greater than 300 volts to ground
- (5) Where insulated conductors in accordance with 805.50(A) are used to extend circuits to a building from cable with an effectively grounded metallic sheath member(s), and where (a) the combination of the primary protector and insulated conductors is listed as being suitable for this purpose for application with circuits extending from a cable with an effectively grounded metallic sheath member(s) and (b) the insulated conductors safely fuse on all currents greater than the current-carrying capacity of the primary protector and of the primary protector bonding conductor or grounding electrode conductor

Informational Note: See ANSI/IEEE C2-2017 2023 , *National Electrical Safety Code® (NESC®)* , Section 9, for examples of methods of protective grounding that can achieve effective grounding of communications cable sheaths for cables from which communications circuits are extended.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 15:06:30 EST 2024

Committee Statement

Committee Statement: Updated the Informational Note to comply with the Style Manual

Response Message: FR-7722-NFPA 70-2024

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**First Revision No. 7770-NFPA 70-2024 [Section No. 805.93]****805.93** – Grounding, Bonding, or Interruption of Non-Current-Carrying Metallic Sheath Members of Communications Cables.

Communications cables entering the building or terminating on the outside of the building shall comply with 805.93(A) or (B).

(A) – Entering Buildings.

In installations where the communications cable enters a building, the metallic sheath members of the cable shall be grounded or bonded as specified in 800.100 or interrupted by an insulating joint or equivalent device. The grounding, bonding, or interruption shall be as close as practicable to the point of entrance.

(B) – Terminating on the Outside of Buildings.

In installations where the communications cable is terminated on the outside of the building, the metallic sheath members of the cable shall be grounded or bonded as specified in 800.100 or interrupted by an insulating joint or equivalent device. The grounding, bonding, or interruption shall be as close as practicable to the point of termination of the cable.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 01:24:05 EST 2024

Committee Statement

Committee Statement: The committee has created new section 800.93 which consolidates the common requirements for grounding, bonding, and interruption. This revision removes this section to align with this consolidation effort.

Response Message: FR-7770-NFPA 70-2024

[Public Input No. 1188-NFPA 70-2023 \[Section No. 805.93\]](#)

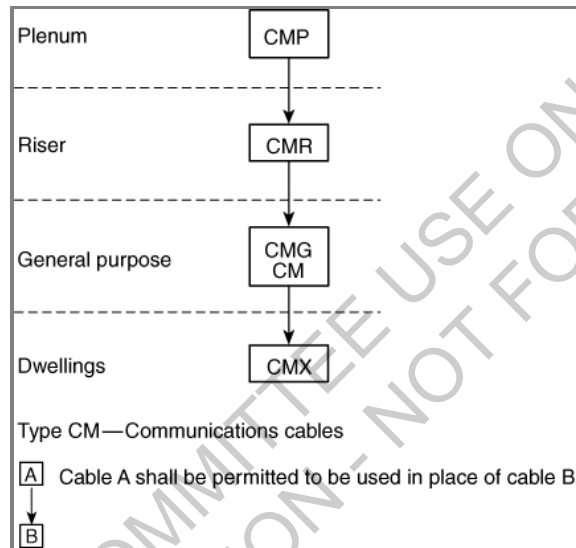
[Public Input No. 3660-NFPA 70-2023 \[Section No. 805.93\]](#)

**First Revision No. 7782-NFPA 70-2024 [Section No. 805.154]****805.154 Substitutions for Listed Communications Cables.**

The substitutions for communications cables listed in Table 805.154 and illustrated in Figure 805.154 shall be permitted.

Table 805.154 Cable Substitutions

Cable Type Permitted Substitutions CMR CMP CMG, CM CMP, CMR CMX CMP, CMR, CMG, CM

Figure 805.154 Cable Substitution Hierarchy.**Submitter Information Verification**

Committee: NEC-P16

Submittal Date: Wed Jan 17 08:51:57 EST 2024

Committee Statement

Committee Statement: The cable substitution hierarchies have been incorporated into the general article, Article 800. This revision coordinates with action taken on 800.154 by deleting the cable substitution requirements from this Article

Response Message: FR-7782-NFPA 70-2024

Public Input No. 1174-NFPA 70-2023 [Section No. 805.154]

**First Revision No. 7586-NFPA 70-2024 [Section No. 810.3]****810.3 Other Articles.**

Wiring from the source of power to and between devices connected to the interior wiring system shall comply with the following:

- (1) Chapters 1 through 4 other than as modified by Article 640, Parts I and II of ~~Article 640~~.
- (2) Coaxial cables that connect antennas to equipment shall comply with the appropriate article of Chapter 8.
- (3) Wiring and equipment installed in hazardous (classified) locations shall comply with the appropriate requirements in Chapter 5.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 15:08:12 EST 2024

Committee Statement

Committee Statement: The text has been edited to comply with 4.1.4 of the NEC Style Manual.

Response Message: FR-7586-NFPA 70-2024

Public Input No. 2968-NFPA 70-2023 [Section No. 810.3]

**First Revision No. 7587-NFPA 70-2024 [Section No. 810.6]****810.6 Antenna Lead-In Protectors.**

If an antenna lead-in surge protector is installed, it shall be

(A) listed as being suitable for limiting surges on the cable that connects the antenna to the receiver/transmitter ~~electronics and shall be~~ electronics

(B) connected between the conductors and the grounded shield or other ground connection.
~~The antenna lead-in protector shall be~~

(C) grounded using a bonding conductor or grounding electrode conductor installed in accordance with 810.21(F).

Informational Note: See UL 497E-2011 , *Outline of Investigation for Protectors for Antenna Lead-In Conductors*, for information concerning protectors for antenna lead-in conductors.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 15:20:30 EST 2024

Committee Statement

Committee Statement: The text has been modified for clarity and the UL standard date has been added.

Response Message: FR-7587-NFPA 70-2024

Public Input No. 3629-NFPA 70-2023 [Section No. 810.6]

810.6 Antenna Lead-In Protectors. [Move text to list items]

If an antenna lead-in surge protector is installed, it shall be: ~~listed as being suitable for limiting surges on the cable that connects the antenna to the receiver/transmitter electronics and shall be connected between the conductors and the grounded shield or other ground connection. The antenna lead-in protector shall be grounded using a bonding conductor or grounding electrode conductor installed in accordance with 810.21(F).~~

(1) Listed as being suitable for limiting surges on the cable that connects the antenna to the receiver/transmitter electronics

(2) Connected between the conductors and the grounded shield or other ground connection

(3) Grounded using a bonding conductor or grounding electrode conductor installed in accordance with 810.21(F)

Informational Note: See UL 497E-2011, *Outline of Investigation for Protectors for Antenna Lead-In Conductors*, for information concerning protectors for antenna lead-in conductors.

**First Revision No. 7591-NFPA 70-2024 [Section No. 810.13]****810.13** Avoidance of Contacts with Conductors of Other Systems.

Outdoor antennas and lead-in conductors from an antenna to a building shall not cross over open conductors of electric light or power circuits and shall be kept well away from all such circuits so as to avoid the possibility of accidental contact. Where proximity to open electric light or power service conductors of less than 250 volts between conductors cannot be avoided, the installation shall be such as to provide a clearance of at least not less than 600 mm (2 ft) from all such circuits .

Where practicable, antenna conductors shall be installed so as not to cross under open electric light or power conductors.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 15:30:26 EST 2024

Committee Statement

Committee Statement: The text has been modified for clarity. By clarifying the separation, the final sentence of the paragraph is no longer needed and has been removed.

Response Message: FR-7591-NFPA 70-2024

Public Input No. 556-NFPA 70-2023 [Section No. 810.13]

**First Revision No. 7595-NFPA 70-2024 [Section No. 810.21(A)]****(A) Material.**

The bonding conductor or grounding electrode conductor shall be of copper, aluminum, copper-clad steel, copper-clad aluminum, bronze, or similar corrosion-resistant material. Aluminum or copper-clad aluminum bonding conductors or grounding electrode conductors shall not be used if subject to corrosive conditions or in direct contact with masonry or the earth- ~~or where subject to corrosive conditions~~ . If used outside, aluminum or copper-clad aluminum conductors shall not be installed within 450 mm (18 in.) of the earth.

Submitter Information Verification**Committee:** NEC-P16**Submittal Date:** Mon Jan 15 15:48:07 EST 2024**Committee Statement**

Committee Statement: The phrase "or where subject to corrosive conditions" is not needed since the phrase "...if subject to corrosive conditions..." is already used earlier in the sentence and covers the condition.

Response Message: FR-7595-NFPA 70-2024

[Public Input No. 3636-NFPA 70-2023 \[Section No. 810.21\(A\)\]](#)

**First Revision No. 7596-NFPA 70-2024 [Section No. 810.21(C)]****(C) Supports.**

The bonding conductor or grounding electrode conductor shall be securely fastened in place and shall be permitted to be directly attached to the surface wired over without the use of insulating supports .

Exception: Where proper support cannot be provided, the size of the bonding conductors or grounding electrode conductors shall be increased proportionately.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 15:51:52 EST 2024

Committee Statement

Committee Statement: The previous language was unenforceable and has been revised to be more clear for the user. The language in the exception was not explicitly clear in its use of the word "proportionately" and created confusion on when the user must securely fasten a conductor.

Response Message: FR-7596-NFPA 70-2024

Public Input No. 1240-NFPA 70-2023 [Section No. 810.21(C)]

**First Revision No. 7863-NFPA 70-2024 [Section No. 810.70]****810.70** Separation from Other Conductors.

All conductors inside the building shall be separated at least 100 mm (4 in.) from the conductors of any electric light, power, or signaling circuit unless one of the following conditions applies:

- (1) The conductors of a permanent audio system are installed in compliance with Article 640, Parts I and II ~~of Article 640~~.
- (2) The conductors of portable and temporary audio systems are installed in compliance with Article 640, Parts I and III ~~of Article 640~~.
- (3) The conductors are separated from such other conductors by a continuous and firmly fixed nonconductor.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 14:02:51 EST 2024

Committee Statement

Committee Statement: Revised to align with the NEC style manual.

Response Message: FR-7863-NFPA 70-2024

Public Input No. 2969-NFPA 70-2023 [Section No. 810.70]

**First Revision No. 7604-NFPA 70-2024 [Section No. 820.3]****820.3– 4 _ Other Articles.**

The wiring methods of Article 830 shall be permitted to substitute for the wiring methods of ~~Article 820~~ this article .

Informational Note: Use of ~~Article 830 - network-powered broadband~~ wiring methods will facilitate the upgrading of ~~Article 820 - installations covered by this article~~ to network-powered broadband applications.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Jan 15 16:12:59 EST 2024

Committee Statement

Committee Statement: Section 820.3 was renumbered to 820.4 to comply with NEC Style Manual section 2.2. References to an entire article were eliminated in order to comply with the NEC Style Manual.

Response Message: FR-7604-NFPA 70-2024

Public Input No. 3617-NFPA 70-2023 [Section No. 820.3]

**First Revision No. 7729-NFPA 70-2024 [Section No. 820.93]****820.93** ~~Grounding of the Outer Conductive Shield of Coaxial Cables.~~

~~Coaxial cables entering buildings or attached to buildings shall comply with 820.93(A) or (B). Where the outer conductive shield of a coaxial cable is grounded, no other protective devices shall be required. For purposes of this section, grounding located at mobile home service equipment located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, or at a mobile home disconnecting means grounded in accordance with 250.32 and located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, shall be considered to meet the requirements of this section.~~

~~Informational Note: Selecting a grounding block location to achieve the shortest practicable bonding conductor or grounding electrode conductor helps limit potential differences between CATV and other metallic systems.~~

(A) ~~Entering Buildings.~~

~~In installations where the coaxial cable enters the building, the outer conductive shield shall be grounded in accordance with 820.100. The grounding shall be as close as practicable to the point of entrance.~~

(B) ~~Terminating Outside of the Building.~~

~~In installations where the coaxial cable is terminated outside of the building, the outer conductive shield shall be grounded in accordance with 820.100. The grounding shall be as close as practicable to the point of attachment or termination.~~

(C) ~~Location.~~

~~Where installed, a listed primary protector shall be applied on each community antenna and radio distribution (CATV) cable external to the premises. The listed primary protector shall be located as close as practicable to the entrance point of the cable on either side or integral to the ground block.~~

(D) ~~Hazardous (Classified) Locations.~~

~~If a primary protector or equipment providing the primary protection function is used, it shall not be located in any hazardous (classified) location as defined in 500.5 and 505.5 or in the vicinity of easily ignitable material.~~

~~Exception: Primary protection equipment shall be used only if permitted by 501.150, 502.150, and 503.150.~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 15:25:51 EST 2024

Committee Statement

Committee Statement: The committee has created new section 800.93 and 820.90 which consolidates common requirements for grounding, bonding, and interruption. This revision removes 820.93 which has been incorporated into 800.93 and 820.90 and aligns with this consolidation effort.

Response Message: FR-7729-NFPA 70-2024

[Public Input No. 3654-NFPA 70-2023 \[Section No. 820.93\]](#)

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First Revision No. 8102-NFPA 70-2024 [Section No. 830.133(A)(1)]

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[See attached Word document for revisions to 830.133 (A)(1).]

(1) In Raceways, Cable Trays, Boxes, Enclosures, and Cable Routing Assemblies.

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(a) *Low- and Medium-Power Network-Powered Broadband Communications Circuit Cables.* Low- and medium-power network-powered broadband communications cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly.

(b) *Low-Power Network-Powered Broadband Communications Circuit Cables with Other Circuits.* Low-power network-powered broadband communications cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly with jacketed cables of any of the following circuits:

- (3) Class 2 and Class 3 remote-control, signaling, and power-limited circuits in compliance with Parts I and II of Article 725
- (4) Power-limited fire alarm systems in compliance with Parts I and III of Article 760
- (5) Communications circuits in compliance with Parts I and IV of Article 805
- (6) Nonconductive and conductive optical fiber cables in compliance with Parts I and V of Article 770
- (7) Community antenna television and radio distribution systems in compliance with Parts I and V of Article 820

(h) *Medium-Power Network-Powered Broadband Communications Circuit Cables with Optical Fiber Cables and Other Communications Cables.* Medium-power network-powered broadband communications cables shall not be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly with conductors of any of the following circuits:

- (9) Communications circuits in compliance with Parts I and IV of Article 805
- (10) Conductive optical fiber cables in compliance with Parts I and V of Article 770
- (11) Community antenna television and radio distribution systems in compliance with Parts I and V of Article 820

(l) *Medium-Power Network-Powered Broadband Communications Circuit Cables with Other Circuits.* Medium-power network-powered broadband communications cables shall not be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly with conductors of any of the following circuits:

- (13) Class 2 and Class 3 remote-control, signaling, and power-limited circuits in compliance with Parts I and II of Article 725
- (14) Power-limited fire alarm systems in compliance with Parts I and III of Article 760

(o) *Electric Light, Power, Class 1, Nonpowered Broadband Communications Circuit Cables.* Network-powered broadband communications cable shall not be placed in any raceway, cable tray, compartment, outlet box, junction box, or similar fittings with conductors of electric light, power, Class 1, or non-power-limited fire alarm circuit cables.

Exception No. 1: Network-powered broadband communications cable shall be permitted to be placed in a raceway, cable tray, compartment, outlet box, junction box, or similar fittings with conductors of electric light, power, Class 1, or non-power-limited fire alarm circuit cables where all of the conductors of electric light, power, Class 1, non-power-limited fire alarm circuits are separated from all of the network-powered broadband communications cables by a permanent barrier or listed divider.

Exception No. 2: Where power circuit conductors in outlet boxes, junction boxes, or similar fittings or compartments where such conductors are introduced solely for power supply to the network-powered broadband communications system distribution equipment, the power circuit conductors shall be routed within the enclosure to maintain a minimum 6 mm (¼ in.) separation from network-powered broadband communications cables.

Supplemental Information

File Name	Description	Approved
70_CMP16_FR8102_830.133_A_1_.docx	Revisions to 830.133(A)(1).	
70_CMP16_FR8102_830.133_A_1.docx	For prod use	

Submitter Information Verification

Committee: NEC-P16
Submittal Date: Fri Jan 19 13:11:30 EST 2024

Committee Statement

Committee Statement: The primary purpose of this PI is to correlate with 726.139(C) which permits Class 4 cables to be run in the same pathway as the cables in 800.133(A)(1).

In order to improve usability, word “listed” is inserted before each cable type to clarify that all the cables that are permitted to be run together are listed cables. This clarification is need to avoid any interpretation that unlisted outside-plant communications and optical fiber cables are permitted to be run with listed communications and optical fiber cables, and Class 2, Class 3 and Class 4 cables, which are always listed.

Minor editorial changes were made clarify that “the installation” needs to be in compliance with the installation rules, not the “circuit”. Other editorial changes were made to correct typographical errors in 800.133(A)(1)(e).

The references to other Articles have been revised to comply with the 2023 NEC Style Manual section 4.1.4 which states, “The article number shall precede the part number.” Some of the references were revised because of changes made in the 2023 NEC.

Response Message: FR-8102-NFPA 70-2024

[Public Input No. 3935-NFPA 70-2023 \[Section No. 830.133\(A\)\(1\)\]](#)

[Public Input No. 4038-NFPA 70-2023 \[Section No. 830.133\(A\)\(1\)\]](#)

[Public Input No. 2970-NFPA 70-2023 \[Section No. 830.133\(A\)\(1\)\]](#)

[Public Input No. 826-NFPA 70-2023 \[Section No. 830.133\(A\)\(1\)\]](#)

FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

(A) Separation of Conductors.

(1) In Raceways, Cable Trays, Boxes, Enclosures, and Cable Routing Assemblies.

- (a) *Low- and Medium-Power Network-Powered Broadband Communications Circuit Cables.* Low- and medium-power network-powered broadband communications cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly.
- (b) *Low-Power Network-Powered Broadband Communications Circuit Cables with Other Circuits.* ~~Low~~Listed low-power network-powered broadband communications cables shall be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly with jacketed cables of any of the following circuits:
- (1) ~~Listed~~ Class 2 and Class 3 remote-control, signaling, and power-limited cables ~~circuits in compliance with Parts I and II of Article 725~~
 - (2) ~~Listed~~ Class 4 cables
 - (3) ~~Power~~Listed power-limited fire alarm ~~systems in compliance with Parts I and III of Article 760~~cables
 - (4) ~~Communications~~Listed communications cables ~~circuits in compliance with Parts I and IV of Article 805~~
 - (5) ~~Nonconductive~~Listed nonconductive and conductive optical fiber cables ~~in compliance with Parts I and V of Article 770~~
 - (6) ~~Community~~Listed community antenna television and radio distribution systems ~~in compliance with Parts I and V of Article 820~~coaxial cables
- (c) *Medium-Power Network-Powered Broadband Communications Circuit Cables with Optical Fiber Cables and Other Communications Cables.* Medium-power network-powered broadband communications cables shall not be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly with conductors of any of the following circuits:
- (1) ~~Communications~~Listed communications ~~circuits in compliance with Parts I and IV of Article 805~~cables
 - (2) ~~Conductive~~Listed conductive optical fiber cables ~~in compliance with Parts I and V of Article 770~~
 - (3) ~~Community~~Listed community antenna television and radio distribution ~~systems in compliance with Parts I and V of Article 820~~system coaxial cables
- (d) *Medium-Power Network-Powered Broadband Communications Circuit Cables with Other Circuits.* Medium-power network-powered broadband communications cables shall not be permitted in the same raceway, cable tray, box, enclosure, or cable routing assembly with conductors of any of the following circuits:
- (1) ~~Listed~~ Class 2 and Class 3 remote-control, signaling, and power-limited ~~cables~~ ~~circuits in compliance with Parts I and II of Article 725~~
 - (2) ~~Power~~Listed power-limited fire alarm ~~systems in compliance with Parts I and III of Article 760~~cables
- (e) *Electric Light, Power, Class 1, Nonpowered Broadband Communications Circuit Cables.* Network-powered broadband communications cable shall not be placed in any raceway, cable tray, compartment, outlet box, junction box, or similar fittings with conductors of electric light, power, Class 1, or non-power-limited fire alarm circuit cables.

Exception No. 1: Network-powered broadband communications cable shall be permitted to be placed in a raceway, cable tray, compartment, outlet box, junction box, or similar fittings with conductors of electric light, power, Class 1, or non-power-limited fire alarm circuit cables where all of the conductors of electric light, power, Class 1, non-power-limited fire alarm circuits are separated from all of the network-powered broadband communications cables by a permanent barrier or listed divider.

Exception No. 2: Where power circuit conductors in outlet boxes, junction boxes, or similar fittings or compartments where such conductors are introduced solely for power supply to the network-powered broadband communications system distribution equipment, the power circuit conductors shall be routed within the enclosure to maintain a minimum 6 mm (1/4 in.) separation from network-powered broadband communications cables.

**First Revision No. 7789-NFPA 70-2024 [Section No. 830.154]****~~830.154~~ Substitutions of Network-Powered Broadband Communications System Cables.**

~~The substitutions for network-powered broadband system cables listed in Table 830.154 shall be permitted.~~

~~Table 830.154 Cable Substitutions~~

~~Cable Type Permitted Cable Substitutions BM BMR BLP CMP, CL3P BLR CMP, CL3P, CMR, CL3R, BLP, BMR BL CMP, CMR, CM, CMG, CL3P, CL3R, CL3, BMR, BM, BLP, BLR BLX CMP, CMR, CM, CMG, CMX, CL3P, CL3R, CL3, CL3X, BMR, BM, BLP, BRP, BL~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 09:24:52 EST 2024

Committee Statement

Committee Statement: The cable substitution hierarchies have been incorporated into the general article, Article 800. This revision coordinates with action taken on 800.154 by deleting the cable substitution requirements from this Article. With the deletion of this section, the revision to correct a typo is not needed.

Response Message: FR-7789-NFPA 70-2024

[Public Input No. 1119-NFPA 70-2023 \[Section No. 830.154\]](#)

[Public Input No. 1172-NFPA 70-2023 \[Section No. 830.154\]](#)

**First Revision No. 7803-NFPA 70-2024 [Section No. 830.179]****830.179 Network-Powered Broadband Communications Equipment and Cables.**

Network-powered broadband communications equipment and cables shall be listed and marked in accordance with 830.179(A) through (C) and 830.179(B).

Exception No. 1: This listing requirement shall not apply to community antenna television and radio distribution system coaxial cables that were installed prior to January 1, 2000, in accordance with Article 820 and are used for low-power network-powered broadband communications circuits.

Exception No. 2: Substitute cables for network-powered broadband communications cables shall be permitted as shown in Table 830.154.

(A)

General Requirements.

The general requirements in 800.179 shall apply.

(B) Network-Powered Broadband Communications Medium-Power Cables.

Network-powered broadband communications medium-power cables shall be factory-assembled cables consisting of a jacketed coaxial cable, a jacketed combination of coaxial cable and multiple individual conductors, or a jacketed combination of an optical fiber cable and multiple individual conductors. The insulation for the individual conductors shall be rated for 300 volts minimum. Cables intended for outdoor use shall be listed as suitable for the application. Cables shall be marked in accordance with 310.8. Type BMU cables shall be jacketed and listed as being suitable for outdoor underground use.

(C) Network-Powered Broadband Communication Low-Power Cables.

Network-powered broadband communications low-power cables shall be factory-assembled cables consisting of a jacketed coaxial cable, a jacketed combination of coaxial cable and multiple individual conductors, or a jacketed combination of an optical fiber cable and multiple individual conductors. The insulation for the individual conductors shall be rated for 300 volts minimum. Cables intended for outdoor use shall be listed as suitable for the application. Cables shall be marked in accordance with 310.8. Type BLU cables shall be jacketed and listed as being suitable for outdoor underground use.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
NEC_CMP16_FR-7803_830.179.docx		

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 10:13:50 EST 2024

Committee Statement

Committee Statement: This revision deletes the redundant general requirement that is already located in Article 800.179. The revised cross-reference to Table 830.154 reflects the action

which incorporated the table into Article 800.

Response FR-7803-NFPA 70-2024
Message:

[Public Input No. 1199-NFPA 70-2023 \[Section No. 830.179\]](#)

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SUBJECT TO REVISION - NOT FOR PUBLICATION

830.179 Network-Powered Broadband Communications Equipment and Cables.

Network-powered broadband communications equipment and cables shall be listed and marked in accordance with 830.179(A) ~~through (C)~~ and 830.179(B).

Exception No. 1: This listing requirement shall not apply to community antenna television and radio distribution system coaxial cables that were installed prior to January 1, 2000, in accordance with Article 820 and are used for low-power network-powered broadband communications circuits.

Exception No. 2: Substitute cables for network-powered broadband communications cables shall be permitted as shown in Table ~~830.154~~ 800.154.

~~(A) General Requirements.~~

~~The general requirements in 800.179 shall apply.~~

~~(B)~~ Network-Powered Broadband Communications Medium-Power Cables.

Network-powered broadband communications medium-power cables shall be factory-assembled cables consisting of a jacketed coaxial cable, a jacketed combination of coaxial cable and multiple individual conductors, or a jacketed combination of an optical fiber cable and multiple individual conductors. The insulation for the individual conductors shall be rated for 300 volts minimum. Cables intended for outdoor use shall be listed as suitable for the application. Cables shall be marked in accordance with 310.8. Type BMU cables shall be jacketed and listed as being suitable for outdoor underground use.

~~(C)~~ Network-Powered Broadband Communication Low-Power Cables.

Network-powered broadband communications low-power cables shall be factory-assembled cables consisting of a jacketed coaxial cable, a jacketed combination of coaxial cable and multiple individual conductors, or a jacketed combination of an optical fiber cable and multiple individual conductors. The insulation for the individual conductors shall be rated for 300 volts minimum. Cables intended for outdoor use shall be listed as suitable for the application. Cables shall be marked in accordance with 310.8. Type BLU cables shall be jacketed and listed as being suitable for outdoor underground use.

**First Revision No. 7706-NFPA 70-2024 [Sections 840.93(B), 840.93(C)]****Sections 840.93(B), 840.93(C)****(B) Communications Cables.**

The grounding or interruption of the metallic sheath of communications cable shall comply with 805.93 (A), 800.93(B)(1), and 800.93(C)(1).

(C) Coaxial Cables.

Where the network terminal is installed inside or outside of the building, with coaxial cables terminating at the network terminal, and is either entering, exiting, or attached to the outside of the building, 820.93 (A), 800.93(B)(1), and 800.93(C)(1) shall apply.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 13:56:37 EST 2024

Committee Statement

Committee Statement: The cross references have been updated due to the consolidation efforts to incorporate 805.93 and 820.93 into 800.93.

Response Message: FR-7706-NFPA 70-2024

Public Input No. 3663-NFPA 70-2023 [Section No. 840.93]

**First Revision No. 7785-NFPA 70-2024 [Section No. 840.94]****840.94** Premises Circuits Leaving the Building.

Where circuits leave the building to power equipment remote to the building or outside the exterior zone of protection defined by a 46 m (150 ft) radius rolling sphere, 805.90- and 805.93 shall, 800.93(A), 800.93(B)(1), and 800.93(C)(1) shall apply.

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

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 09:10:40 EST 2024

Committee Statement

Committee Statement: The cross-references in this section have been revised due to the actions taken to consolidate common requirements into a single general communications Article 800.

Response Message: FR-7785-NFPA 70-2024

Public Input No. 3666-NFPA 70-2023 [Section No. 840.94]

**First Revision No. 7774-NFPA 70-2024 [Section No. 840.102]****840.102** Premises Circuits Leaving the Building.

If circuits leave the building to power equipment remote to the building or outside the exterior zone of protection defined by a 46 m (150 ft) radius rolling sphere, the installation of communications wires and cables shall comply with 800.100 and 800.106, and the installation of coaxial cables shall comply with 820.100 and 800.106.

Informational Note: See NFPA 780-2020 2023 , *Standard for the Installation of Lightning Protection Systems*, Section 4.6.3.2 for the application of the term *rolling sphere*.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 02:08:51 EST 2024

Committee Statement

Committee Statement: Informational note revised to comply with the NEC Style Manual.

Response Message: FR-7774-NFPA 70-2024

**First Revision No. 8106-NFPA 70-2024 [Section No. 840.170]**

[See attached Word document for revisions to 840.170.]

840.170 Equipment- and Cables .

Premises-powered broadband communications systems equipment and cables shall comply with 840.170(A) through 840.170 (D C).

(A) Network Terminal.

The network terminal and applicable grounding means shall be listed for application with premises-powered broadband communications systems.

Informational Note No. 1: See ANSI/ UL 60950-1-2014 2019 , *Standard for Safety of Information Technology Equipment*; ANSI/ UL 498A-2015 2021 , *Current Taps and Adapters*; ANSI/ UL 467-2013 2022 , *Grounding and Bonding Equipment*; or ANSI/ UL 62368-1-2014 2021 , *Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements*.

Informational Note No. 2: There are no requirements on the network terminal and its grounding methodologies except for those covered by the listing of the product.

(C)–

(B)–

Premises Communications Wires and Cables.

Communications wires and cables shall be listed and marked in accordance with 800.179 .

Power Source.

The power source for circuits intended to provide power over communications cables to remote equipment shall be limited in accordance with Table 11(B) in Chapter 9 for voltage sources up to 60 volts dc and be listed as specified in either of the following:

(1) – A power source shall be listed as specified in 725.60(A)(1) , 725.60 (A)(2), 725.60 (A)(3), or 725.60 (A)(4). The power sources shall not have the output connections paralleled or otherwise interconnected unless listed for such interconnection.

(2) – A power source shall be listed as communications equipment for limited power circuits.

Informational Note:– See

ANSI/

UL 60950-1-

2014

2019 ,

Standard for Safety of

Information Technology Equipment Safety — Part 1 , or

ANSI/

UL 62368-1-

2014

2021 ,– Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements . Typically, such circuits are used to interconnect equipment for the purpose of exchanging information (data).

{

D

C)– Accessory Equipment.

Communications accessory equipment and/or assemblies shall be listed for application with premises-powered communications systems.

Informational Note:– See

ANSI/

UL 1863-

2004

2019 ,– Communications Circuit Accessories .

Supplemental Information

File Name	Description	Approved
70_CMP16_FR8106_840.170.docx	Revisions to 840.170.	

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Fri Jan 19 13:34:26 EST 2024

Committee Statement

Committee Statement: This revision deletes the redundant general requirement that is already located in Article 800.179.

Response Message: FR-8106-NFPA 70-2024

Public Input No. 1198-NFPA 70-2023 [Section No. 840.170]

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840.170 Equipment ~~and Cables~~.

Premises-powered broadband communications systems equipment and cables shall comply with 840.170(A) through ~~840.170 (D)~~.

(A) Network Terminal.

The network terminal and applicable grounding means shall be listed for application with premises-powered broadband communications systems.

Informational Note No. 1: See ~~ANSI/UL 60950-1-2014~~2019, *Standard for Safety of Information Technology Equipment*; ~~ANSI/UL 498A-2015~~2021, *Current Taps and Adapters*; ~~ANSI/UL 467-2013~~2022, *Grounding and Bonding Equipment*; or ~~ANSI/UL 62368-1-2014~~2021, *Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements*.

Informational Note No. 2: There are no requirements on the network terminal and its grounding methodologies except for those covered by the listing of the product.

~~(B) Premises Communications Wires and Cables.~~

~~Communications wires and cables shall be listed and marked in accordance with 800.179.~~

~~(C)~~ Power Source.

The power source for circuits intended to provide power over communications cables to remote equipment shall be limited in accordance with Table 11(B) in Chapter 9 for voltage sources up to 60 volts dc and be listed as specified in either of the following:

- (1) A power source shall be listed as specified in 725.60(A)(1), ~~725.60~~(A)(2), ~~725.60~~ (A)(3), or ~~725.60~~ (A)(4). The power sources shall not have the output connections paralleled or otherwise interconnected unless listed for such interconnection.
- (2) A power source shall be listed as communications equipment for limited-power circuits.

Informational Note: See ~~ANSI/UL 60950-1-2014~~2019, *Standard for Safety of Information Technology Equipment-Safety – Part 1*, or ~~ANSI/UL 62368-1-2014~~2021, *Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements*. Typically, such circuits are used to interconnect equipment for the purpose of exchanging information (data).

~~(D)~~ Accessory Equipment.

Communications accessory equipment and/or assemblies shall be listed for application with premises-powered communications systems.

Informational Note: See ~~ANSI/UL 1863-2004~~2019, *Communications-Circuit Accessories*.

**First Revision No. 7639-NFPA 70-2024 [New Part after II.]**

[New Section after Article 770 Part II and before 770.44.]

770.43 Listed Optical Fiber Cables in Outdoor Cable Trays.

Optical fiber cables installed in outdoor cable trays shall be listed and marked as sunlight resistant.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 08:34:20 EST 2024

Committee Statement

Committee Statement: There are installations of optical fiber cables used in outdoor cable trays, therefore this revision has been made to require that the cables are listed with a sunlight resistant rating

Response Message: FR-7639-NFPA 70-2024

Public Input No. 2567-NFPA 70-2023 [New Section after 770.27]

**First Revision No. 7700-NFPA 70-2024 [New Part after III.]****[New section after Article 800, Part III Grounding Methods and before 800.100]****800.93 Grounding, Bonding or Interruption of Metallic Members of Cables.**

Non-current carrying metallic members of communications cables, coaxial cables, or optical fiber cables entering buildings or attaching to buildings shall comply with 800.93(A), 800.93(B), and 800.93(C).

For purposes of this section, grounding located at mobile home service equipment located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, or at a mobile home disconnecting means grounded in accordance with 250.32 and located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, shall be considered to meet the requirements of this section.

(A) Location.

The grounding, bonding, or interruption shall be close as practicable to the point of entrance or the NIU.

(B) Entering Buildings.

(1) In installations where the communications cable enters a building, the metallic sheath members of the cable shall be grounded or bonded as specified in 800.100 or interrupted by an insulating joint or equivalent device.

(2) In installations where the coaxial cable enters the building, the outer conductive shield shall be grounded in accordance with 820.100.

(3) In Installations where the network-powered communications cable enters the building, the shield shall be grounded in accordance with 800.100, and metallic members of the cable not used for communications or powering shall be grounded in accordance with 800.100 or interrupted by an insulating joint or equivalent device.

(4) Non-current-carrying metallic members of optical fiber cables entering a building or terminating on the outside of a building shall comply with 770.93(A) or 770.93(B).

(C) Terminating on the Outside of Buildings.

(1) In installations where the communications cable is terminated on the outside of the building, the metallic sheath members of the cable shall be grounded or bonded as specified in 800.100 or interrupted by an insulating joint or equivalent device.

(2) In installations where the coaxial cable is terminated outside of the building, the outer conductive shield shall be grounded in accordance with 820.100.

(3) In installations where the network-powered communications cable is terminated outside of the building, the shield shall be grounded in accordance with 800.100, and metallic members of the cable not used for communications or powering shall be grounded in accordance with 800.100 or interrupted by an insulating joint or equivalent device.

Informational Note: Selecting a grounding location to achieve the shortest practicable bonding conductor or grounding electrode conductor helps limit potential differences between the network-powered broadband communications circuits and other metallic systems.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Tue Jan 16 13:22:07 EST 2024

Committee Statement

Committee Statement: This revision establishes a new Section 800.93 Grounding, Bonding or Interruption of Metallic Members of Cables and incorporates the common requirements of 805.93, 820.93, and 830.93.

Response Message: FR-7700-NFPA 70-2024

[Public Input No. 3645-NFPA 70-2023 \[New Part after III.\]](#)

[Public Input No. 1187-NFPA 70-2023 \[New Section after 800.53\]](#)

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**First Revision No. 7989-NFPA 70-2024 [New Part after III.]****[New Section after Part III, Article 820 and before current section 820.93.]****820.90 Protection of Coaxial Cables Entering or Attached to Buildings.****(A) Outer Conductor.**

If the outer conductor shield of a coaxial cable is grounded no other protective devices shall be required (see 800.93)

(B) Primary Protector.

If installed, a primary protector shall be applied on each community antenna and radio distribution (CATV) cable external to

the premises.

(C) Listing and Location of Primary Protector.

If present, the primary protector shall be:

(1) Listed for the purpose.

(2) Located as close as practical to the entrance point of the cable on either side or integral to the grounding block.

(D) Hazardous (Classified) Locations.

If a primary protector or equipment providing the primary protection function is used, it shall not be located in hazardous (classified) locations as defined in 500.5 and 505.5 or in the vicinity of easily ignitable material.

Exception: Primary protection equipment shall be used only if permitted by 501.150, 502.150, and 503.150.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Thu Jan 18 15:13:58 EST 2024

Committee Statement

Committee Statement: This revision creates a new section that incorporates the protector requirements currently in 820.93. The section numbering parallels other related protection sections, see 805.90, 830.90, and 840.90.

Response Message: FR-7989-NFPA 70-2024

Public Input No. 3650-NFPA 70-2023 [New Part after III.]

**First Revision No. 7772-NFPA 70-2024 [Sections Part IV., 830.93]****Sections Part IV., 830.93****Part IV.— Grounding Methods****830.93— Grounding or Interruption of Metallic Members of Network-Powered Broadband Communications Cables.**

Network-powered communications cables entering buildings or attaching to buildings shall comply with 830.93(A) or (B).

For purposes of this section, grounding located at mobile home service equipment located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, or at a mobile home disconnecting means grounded in accordance with 250.32 and located within 9.0 m (30 ft) of the exterior wall of the mobile home it serves, shall be considered to meet the requirements of this section.

Informational Note: Selecting a grounding location to achieve the shortest practicable bonding conductor or grounding electrode conductor helps limit potential differences between the network-powered broadband communications circuits and other metallic systems.

(A)— Entering Buildings.

In installations where the network-powered communications cable enters the building, the shield shall be grounded in accordance with 800.100, and metallic members of the cable not used for communications or powering shall be grounded in accordance with 800.100 or interrupted by an insulating joint or equivalent device. The grounding or interruption shall be as close as practicable to the point of entrance.

(B)— Terminating Outside of the Building.

In installations where the network-powered communications cable is terminated outside of the building, the shield shall be grounded in accordance with 800.100, and metallic members of the cable not used for communications or powering shall be grounded in accordance with 800.100 or interrupted by an insulating joint or equivalent device. The grounding or interruption shall be as close as practicable to the point of attachment of the NIU.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Wed Jan 17 01:47:04 EST 2024

Committee Statement

Committee Statement: The committee has created new section 800.93 which consolidates the common requirements for grounding, bonding, and interruption. This revision removes Part IV to align with this consolidation effort.

Response Message: FR-7772-NFPA 70-2024

Public Input No. 3661-NFPA 70-2023 [Section No. 830.93]

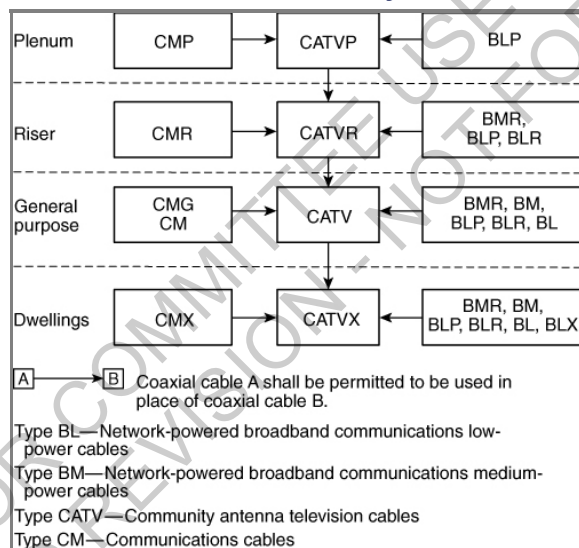
**First Revision No. 7783-NFPA 70-2024 [Sections Part V., 820.154]****Sections Part V., 820.154****Part V.—Installation Methods Within Buildings****820.154—Substitutions of Listed CATV Cables.**

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.

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

Figure 820.154 Coaxial Cable Substitution Hierarchy.**Submitter Information Verification**

Committee: NEC-P16

Submittal Date: Wed Jan 17 09:01:25 EST 2024

Committee Statement

Committee Statement: The cable substitution hierarchies have been incorporated into the general article, Article 800. This revision coordinates with action taken on 800.154 by deleting the cable substitution requirements from this Article.

Response Message: FR-7783-NFPA 70-2024

Public Input No. 1173-NFPA 70-2023 [Sections Part V., 820.154]

**First Revision No. 7813-NFPA 70-2024 [Sections Part VI., 840.160, Part VII.]****Sections Part VI., 840.160, Part VII.****Part VI V . Premises Powering of Communications Equipment over Communications Cables****840.160 Powering Circuits.**

Listed communications cables, in addition to carrying the communications circuit, shall also be permitted to carry circuits for powering listed communications equipment. The power source shall be listed in accordance with 840.170(C). Installation of the listed 4-pair communications cables for a communications circuit or installation where 4-pair communications cables are substituted for Class 2 and Class 3 cables in accordance with 722.135(E) shall comply with 725.144.

Exception: Installing communications cables in compliance with 725.144 shall not be required for listed 4-pair communications cables where the rated current of the power source does not exceed 0.3 amperes in any conductor 24 AWG or larger.

Informational Note No. 1: A typical communications cable for this application is a 4-pair cable sometimes referred to as Category 5e (or higher) LAN cable or balanced twisted pair cable. These types of cables are often used to provide Ethernet- and Power over Ethernet (PoE)-type services.

Informational Note No. 2: See 725.144 for requirements to manage the temperature rise of bundles of cables that provide power.

Part VII VI . Listing Requirements**Submitter Information Verification**

Committee: NEC-P16

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Committee Statement

Committee Statement: Article Part numbers have been revised to appear sequentially per the NEC style manual.

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[Public Input No. 1132-NFPA 70-2023 \[Part VI.\]](#)

[Public Input No. 1134-NFPA 70-2023 \[Part VII.\]](#)