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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 SECOND DRAFT REPORT

Document: National Electrical Code®

Revision Cycle: A2025

Meeting Date: October 2024

Panel Activity: Comment Stage

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

Second Revision No. 8202-NFPA 70-2024 [Detail]

Article 830

~~**Part III. Protection**~~

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

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 17:49:14 EDT 2024

Committee Statement

Committee Statement: Part III was deleted since Part III did not have any requirements. Part IV has been renumbered to Part III.

Response Message: SR-8202-NFPA 70-2024

Second Revision No. 8336-NFPA 70-2024 [Detail]

Revise the title of Article 800 to Article 800 General Requirements for Communications Systems Outside and Entering Buildings

Submitter Information Verification

Committee: NEC-P16
Submittal Date: Wed Oct 23 16:36:34 EDT 2024

Committee Statement

Committee Statement: The title and scope of an Article must correlate.
Response Message: SR-8336-NFPA 70-2024

Public Comment No. 1545-NFPA 70-2024 [Article 800]

Second Revision No. 8115-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~~ another circuit defined by this code is possible~~.~~ ~~(e~~ . ~~g.~~ For example , 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~~ an existing circuit type defined by this code does not, by itself change the requirements for the existing circuit type in this code.

Supplemental Information

File Name	Description	Approved
70_CMP16_Article100_SR8115.docx	For Staff Use	

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 11:37:31 EDT 2024

Committee Statement

Committee Statement: The expansion of the term "communications circuit" to be anything carrying data makes it ambiguous as to how to treat an existing circuit type referenced in the code (e.g., branch circuits, feeder circuits, class 2 circuits, class 3 circuits, and class 4 circuits). The informational note is modified to reference the circuit types referenced in the code and that their requirements are not bypassed by the mere addition of data.

Response Message: SR-8115-NFPA 70-2024 PC-1219: The revised text deletes the term “powering circuit”.

Public Comment No. 1219-NFPA 70-2024 [Definition: Communications Circuit.]

Public Comment No. 1561-NFPA 70-2024 [Definition: Communications Circuit.]

Second Revision No. 8120-NFPA 70-2024 [Definition: Point of Entrance.]

Point of Entrance.

The point within a building at which a wire or cable emerges from an external wall, the roof, or the floor. (800) (CMP-16)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 11:47:32 EDT 2024

Committee Statement

Committee Statement: The revision to include “(800)”, is added to avoids a conflicts with other NEC articles such as Article 230 and addresses Point of Entrance to the building for communication circuits.

Response Message: SR-8120-NFPA 70-2024

Public Comment No. 1221-NFPA 70-2024 [Definition: Point of Entrance.]

Second Revision No. 8127-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~~ limited-energy cables . (CMP-3)

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 12:14:36 EDT 2024

Committee Statement

Committee Statement: All of the cables are all limited-energy cables thereby enabling a simplification of the text.

Response Message: SR-8127-NFPA 70-2024

Public Comment No. 541-NFPA 70-2024 [Definition: Raceway, Communications. (Communications Racewa...]

Second Revision No. 8130-NFPA 70-2024 [Article 770]

~~**Article 770** Optical Fiber Cables~~

~~**Part I.** General~~

~~**770.24** Mechanical Execution of Work.~~

~~**(A)** General.~~

~~**(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-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 300.25(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.~~

~~**Part II.** Cables Outside and Entering Buildings~~

Submitter Information Verification

Committee: NEC-P16
Submittal Date: Mon Oct 21 12:20:35 EDT 2024

Committee Statement

Committee Statement: FCR-255 removed most of Article 770.

770.24(A)(1) is redundant-see 722.30(A)(1)

770.24(A)(2) is redundant-see 722.30(A)(2)

770.24(A)(3) is redundant-see 300.25(C)(3)

Since the redundant text is deleted, there is no text left in Article 770. Therefore,

	Article 770 is deleted.
Response Message:	SR-8130-NFPA 70-2024

Public Comment No. 768-NFPA 70-2024 [Article 770]

Public Comment No. 1539-NFPA 70-2024 [Article 770]

Second Revision No. 8198-NFPA 70-2024 [Section No. 800.48]

800.48 Unlisted Cables Entering Buildings.

Unlisted outside plant communications cables, unlisted outside plant CATV-type coaxial cables, and 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.

(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 noncoductive 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: Mon Oct 21 17:40:37 EDT 2024

Committee Statement

Committee Statement:	The term "to be installed" is always redundant. 90.2(C) says, "This code covers the installation and removal of electrical conductors, equipment, and raceways...". Every requirement of the NEC is about installation or removal (and requirements about removal are a very small minority). "Shall be permitted" and "shall not be permitted," as applied to equipment, mean that the subject equipment either is or is not allowed to be installed.
Response Message:	SR-8198-NFPA 70-2024

Second Revision No. 8146-NFPA 70-2024 [Section No. 800.50]

800.50 Circuits Requiring Primary Protectors.

Circuits that require primary protectors as provided in ~~805.90~~ 742.10(A) shall comply with 800.50(A),800.50(B), and 800.50(C).

(A) Insulation, Wires, and Cables.

Communications wires and cables without a metal shield, running from the last outdoor support to the primary protector, shall be listed in accordance with 805.~~173~~ 2(B) .

(B) On Buildings.

Communications wires and cables in accordance with 800.50(A) shall be separated at least 100 mm (4 in.) from electric light or power conductors not in a raceway or cable or be permanently separated from conductors of the other systems by a continuous and firmly fixed nonconductor in addition to the insulation on the wires, such as porcelain tubes or flexible tubing. Communications wires and cables in accordance with 800.50(A) exposed to accidental contact with electric light and power conductors operating at over 300 volts to ground and attached to buildings shall be separated from woodwork by being supported on glass, porcelain, or other insulating material.

Exception: Separation from woodwork shall not be required where fuses are omitted as provided for in ~~805~~ 742 .~~90~~ 10 (A)(1), or where conductors are used to extend circuits to a building from a cable having a grounded metal sheath.

(C) Entering Buildings.

(1) Installed Inside Buildings.

If a primary protector is installed inside the building, the communications wires and cables shall enter the building either through a noncombustible, nonabsorbent insulating bushing or through a metal raceway.

Exception: The insulating bushing shall not be required if the entering communications wires and cables meet one or more of the following conditions:

(1) Is a metal-sheathed cable

(2) Pass through masonry

(3) Meet the requirements of 800.50(A) and fuses are omitted in accordance with ~~805~~ 742 .~~90~~ 10 (A)(1)

(4) Meet the requirements of 800.50(A) and are used to extend circuits to a building from a cable having a grounded metal sheath

(2) Orientation of Raceways or Bushings.

Raceways or bushings shall slope upward from the outside, or, where this cannot be done, drip loops shall be formed in the communications wires and cables immediately before they enter the building.

(3) Service Head.

Raceways shall be equipped with an approved service head. More than one communications wire and cable shall be permitted to enter through a single raceway or bushing. Conduits or other metal raceways located ahead of the primary protector shall be grounded.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:33:26 EDT 2024

Committee Statement

Committee Statement: Based on the action of the code reorganization, the following references were updated:

(1) Section 800.50 reference to 805.90(A). These requirements are now located in 742.10(A).

(2) Section 800.50(A) reference to 805.2(B) based on reorganization of Article 805.

(3) Section 800.50(B) Exception reference to 805.90(A)(1). These requirements are now located in 742.10(A)(1).

(4) Section 800.50(C) Exception reference to 805.90(A). These requirements are now located in 742.10(A)(1).

Response Message: SR-8146-NFPA 70-2024

Public Comment No. 938-NFPA 70-2024 [Section No. 800.50]

Second Revision No. 8144-NFPA 70-2024 [Article 805]

~~**Article 805** Communications Circuits~~

~~**Part I.** General~~

~~**Part II.** Wires and Cables Outside and Entering Buildings~~

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

~~**805.156** Dwelling Unit Communications Outlet.~~

~~For new construction, a minimum of one communications outlet shall be installed within the dwelling in a readily accessible area and cabled to the service provider demarcation point.~~

~~**Part V.** Listing Requirements~~

~~**805.170** Protectors.~~

~~Protectors shall be listed in accordance with 805.170(A) or 805.170(B) .~~

~~**(A)** Primary Protectors.~~

~~The primary protector shall be listed and consist of an arrester connected between each line conductor and ground in an appropriate mounting. Primary protector terminals shall be marked to indicate line and ground as applicable.~~

~~Informational Note: See ANSI/UL 497-2017, *Standard for Protectors for Paired Conductor Communications Circuits* , to determine applicable requirements for a listed primary protector.~~

~~**(B)** Secondary Protectors.~~

~~The secondary protector shall be listed as suitable to provide means to safely limit currents to less than the current-carrying capacity of listed indoor communications wire and cable, listed telephone set line cords, and listed communications terminal equipment having ports for external wire line communications circuits. Any overvoltage protection, arresters, or grounding connection shall be connected on the equipment terminals side of the secondary protector current-limiting means.~~

~~Informational Note: See ANSI/UL 497A-2019, *Standard for Secondary Protectors for Communications Circuits* , to determine applicable requirements for a listed secondary protector.~~

~~**805.173**~~

[See attached Word file for revisions throughout Article 805]

Article 805 Communications Wires

805.1 Scope.

This article covers listing of communication wires.

805.2 Listing Requirements.

(A) 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 UL 1685-2015, 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 char in excess of 8 feet (244 cm). 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 where the cables do not spread char in excess of 1.5 m (4 ft 11 in).

(B) Drop Wire and Cable.

Communications wires and cables without a metallic shield, running from the last outdoor support to the primary protector, shall be listed as being suitable for the purpose and shall have current-carrying capacity as specified in ~~805~~ 742 ~~.90~~ 10 (~~A~~ B)(1) ~~(2)~~ or ~~805~~ 742 ~~.90~~ 10 (~~A~~ B)(~~1~~) ~~(~~ 3).

Supplemental Information

File Name	Description	Approved
70_CMP16_Article805_SR8144.docx		
70_CMP16_Article805_SR8144.docx	For prod use	

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:25:34 EDT 2024

Committee Statement

Committee Statement: The Scope was provided for the Article. The listing requirements for communication wires was provided since it was not discussed in other sections of the NEC. The reference to the listing requirements for drop cables was updated to the relocated sections. The listing for Protectors was deleted since it was covered in Article 750. Parts for the Article was deleted since the Article only discusses Listing Requirements.

Response Message: SR-8144-NFPA 70-2024

Public Comment No. 1541-NFPA 70-2024 [Article 805]

Public Comment No. 830-NFPA 70-2024 [New Section after 805.170]

Public Comment No. 857-NFPA 70-2024 [New Part after I.]

Public Comment No. 675-NFPA 70-2024 [Section No. 805.173]

Public Comment No. 657-NFPA 70-2024 [Part I.]

Article 805 Communications ~~Circuits~~Wires
~~**Part I. General**~~

805.1 Scope.
This article covers listing of communications wires.

~~**Part II. Wires and Cables Outside and Entering Buildings**~~
~~**Part IV. Installation Methods Within Buildings**~~
~~**805.156 Dwelling Unit Communications Outlet.**~~

~~For new construction, a minimum of one communications outlet shall be installed within the dwelling in a readily accessible area and cabled to the service provider demarcation point.~~

~~**Part V. Listing Requirements**~~
~~**805.170 Protectors.**~~

~~Protectors shall be listed in accordance with 805.170(A) or 805.170(B).~~

~~**(A) Primary Protectors.**~~

~~The primary protector shall be listed and consist of an arrester connected between each line conductor and ground in an appropriate mounting. Primary protector terminals shall be marked to indicate line and ground as applicable.~~

~~Informational Note: See ANSI/UL 497-2017, *Standard for Protectors for Paired Conductor Communications Circuits*, to determine applicable requirements for a listed primary protector.~~

~~**(B) Secondary Protectors.**~~

~~The secondary protector shall be listed as suitable to provide means to safely limit currents to less than the current-carrying capacity of listed indoor communications wire and cable, listed telephone set line cords, and listed communications terminal equipment having ports for external wire-line communications circuits. Any overvoltage protection, arresters, or grounding connection shall be connected on the equipment terminals side of the secondary protector current-limiting means.~~

~~Informational Note: See ANSI/UL 497A-2019, *Standard for Secondary Protectors for Communications Circuits*, to determine applicable requirements for a listed secondary protector.~~

805.2 Listing Requirements.

(A) 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 UL 1685-2015, 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 char in excess of 8 feet (244 cm). 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 where the cables do not spread char in excess of 1.5 m (4 ft 11 in).

~~805.173~~(B) Drop Wire and Cable.

Communications wires and cables without a metallic shield, running from the last outdoor support to the primary protector, shall be listed as being suitable for the purpose and shall have current-carrying capacity as specified in 742.10(B)(1) or 742.10 (B)(3)~~805.90(A)(1)(2) or 805.90(A)(1)(3)~~.

Second Revision No. 8149-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.~~

(2) ~~The appropriate article of Chapter 8 for coaxial cables that connect antennas to equipment.~~

(3) ~~The appropriate requirements of Chapter 5 for wiring and equipment installed in hazardous (classified) locations.~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:38:06 EDT 2024

Committee Statement

Committee Statement: Since Chapter 8 is no longer independent and is integrated with the rest of the code, this method of linking back to the rest of the code is removed.

Response Message: SR-8149-NFPA 70-2024

Public Comment No. 1546-NFPA 70-2024 [Section No. 810.3]

Second Revision No. 8150-NFPA 70-2024 [Section No. 810.20]

~~**810.20** Antenna Discharge Units — Receiving Stations.~~

~~**(A)** General Requirement.~~

~~Each lead-in conductor from an outdoor antenna shall be provided with a listed antenna discharge unit.~~

~~*Exception:* A separate antenna discharge unit is not required if the lead-in conductors are enclosed in a continuous metal shield that complies with one of the following:~~

~~*(1) Is grounded or bonded with a conductor in accordance with 810.21*~~

~~*(2) Is protected by an antenna discharge unit*~~

~~**(B)** Location.~~

~~Antenna discharge units shall be located outside the building or inside the building between the point of entrance of the lead-in and the radio set or transformers and as near as practicable to the entrance of the conductors to the building. The antenna discharge unit shall not be located near combustible material or in a hazardous (classified) location as defined in accordance with 500.5 and 505.5 .~~

~~**(C)** Grounding or Bonding.~~

~~The antenna discharge unit shall be grounded or bonded in accordance with 810.21.~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:39:18 EDT 2024

Committee Statement

Committee Statement: Section 810.20(A)-(C) is deleted as part of the NEC reorganization as the requirements of 810.20(A)-(C) are covered by new Section 750.66(A)-(K).

Response Message: SR-8150-NFPA 70-2024

Public Comment No. 1547-NFPA 70-2024 [Section No. 810.20]

Second Revision No. 8152-NFPA 70-2024 [Section No. 810.51]

810.51 Other Sections.

In addition to complying with Part III, antenna systems for amateur and citizen band transmitting and receiving stations shall also comply with 810.11 through 810.~~15.~~ 14 and 750.60(B).

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:42:56 EDT 2024

Committee Statement

Committee Statement: The references in section 810.51 as section 810.15 has been relocated to new section 750.60(B) as such the reference has been updated to reflect the new location and 810.15 has been changed to 810.14.

Response Message: SR-8152-NFPA 70-2024

Public Comment No. 939-NFPA 70-2024 [Section No. 810.51]

Second Revision No. 8154-NFPA 70-2024 [Section No. 810.54]

810.54 Clearance on Building.

Antenna conductors for transmitting stations, attached to buildings, shall be firmly mounted at least 75 mm (3 in.) clear of the surface of the building on nonabsorbent insulating supports, such as treated pins or brackets equipped with insulators having not less than 75-mm (3-in.) creepage and airgap distances. Lead-in conductors attached to buildings shall also comply with these requirements.

Exception: If the lead-in conductors are enclosed in a continuous metal shield that is grounded with a conductor in accordance with ~~810~~ 750 .~~58~~ 70 , they shall not be required to comply with these requirements. If grounded, the metal shield shall also be permitted to be used as a conductor.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:44:23 EDT 2024

Committee Statement

Committee Statement: Section 810.58 has been relocated to new section 750.70 and the reference has been updated to reflect the new location.

Response Message: SR-8154-NFPA 70-2024

Public Comment No. 1381-NFPA 70-2024 [Section No. 810.54]

Second Revision No. 8155-NFPA 70-2024 [Section No. 810.55]

810.55 Entrance to Building.

Except where protected with a continuous metallic shield that is grounded with a conductor in accordance with ~~810~~ 750 .~~58~~ 70 , lead-in conductors for transmitting stations shall enter buildings by one of the following methods:

(1) Through a rigid, noncombustible, nonabsorbent insulating tube or bushing

(2) Through an opening provided for the purpose in which the entrance conductors are firmly secured so as to provide a clearance of at least 50 mm (2 in.)

(3) Through a drilled window pane

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:45:59 EDT 2024

Committee Statement

Committee Statement: Section 810.58 has been relocated to new section 750.70 and the reference has been updated to reflect the new location.

Response Message: SR-8155-NFPA 70-2024

Public Comment No. 1382-NFPA 70-2024 [Section No. 810.55]

Second Revision No. 8193-NFPA 70-2024 [Section No. 820.4]

820.4 ~~Other Articles~~ Alternate Wiring Methods .

~~The wiring methods of Article~~ 830 ~~shall~~ Network-powered broadband wiring methods shall be permitted to substitute for the wiring methods of this article.

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

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 17:33:00 EDT 2024

Committee Statement

Committee Statement: Network powered broadband wiring methods are addressed in multiple articles such as Article 830 and Article 722. The statement was generalized in order to reflect the requirements in multiple NEC articles.

Response Message: SR-8193-NFPA 70-2024

Public Comment No. 1553-NFPA 70-2024 [Section No. 820.4]

Second Revision No. 8156-NFPA 70-2024 [Section No. 820.90]

~~**820.90** Protection of Coaxial Cables Entering or Attached to Buildings.~~

~~If the outer conductor shield of a coaxial cable is grounded, no other protective devices shall be required (see 750.48).~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:49:27 EDT 2024

Committee Statement

Committee Statement: The requirements for Protection of Coaxial cable entering or attached to buildings is covered under 750.48(B).

Response Message: SR-8156-NFPA 70-2024

Public Comment No. 1554-NFPA 70-2024 [Section No. 820.90]

Second Revision No. 8173-NFPA 70-2024 [New Section after 830.1]

830.2 Listing Requirements.

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

Network-powered broadband communications medium-power cables shall meet the requirements of 830.2(A) (1) through 830.2(A)(5).

(1) Cable Jacket.

Network-powered broadband communications medium-power cables shall be factory-assembled consisting of one of the following:

(1) A jacketed coaxial cable

(2) A jacketed combination of coaxial cable and multiple individual conductors

(3) A jacketed combination of an optical fiber cable and multiple individual conductors

(2) Cable Insulation.

The insulation for the individual conductors shall be rated for 300 volts minimum.

(3) Outdoor Use.

Cables intended for outdoor use shall be listed as suitable for the application.

(4) Cable Marking.

Cables shall be marked in accordance with 310.8.

(5) Underground Cable.

Type BMU cables shall be jacketed and listed as being suitable for underground use.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 14:36:47 EDT 2024

Committee Statement

Committee Statement: The listing requirements were restored to this section since Network-Powered Broadband Communications Medium-Power Cables is not within the scope of Article 722 and these requirements were erroneously deleted in First Draft.

Response Message: SR-8173-NFPA 70-2024

Public Comment No. 672-NFPA 70-2024 [New Part after IV.]

Second Revision No. 8157-NFPA 70-2024 [Section No. 830.40(B)]

(B) Low-Power Circuits.

Low-power network-powered broadband communications circuits located outside and entering buildings shall be installed using Type BLU or Type BLX low-power network-powered broadband communications cables. Cables shown in Table ~~800.154(a)~~ 722.122 shall be permitted to substitute.

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 13:52:03 EDT 2024

Committee Statement

Committee Statement: The allowed cables requirement was moved to Table 722.122.

Response Message: SR-8157-NFPA 70-2024

Public Comment No. 663-NFPA 70-2024 [Section No. 830.40(B)]

Second Revision No. 8165-NFPA 70-2024 [New Section after 830.44]

830.47 Underground Network-Powered Broadband Communications Cables Entering Buildings.

Underground network-powered broadband communications cables entering buildings shall comply with 830.47(A) and 830.47(B).

(A) General.

Direct buried cable, conduit, or other raceways shall be installed to meet the minimum cover requirements of Table 830.47(A).

Table 830.47(A) Network-Powered Broadband Communications Systems Minimum Cover Requirements.

Location of Wiring Method or Circuit	Direct Burial Cables		Rigid Metal Conduit (RMC) or Intermediate Metal Conduit (IMC)		Nonmetallic Raceways Listed for Direct Burial; Without Concrete Encasement or Other Approved Raceways	
	mm.	in.	mm.	in.	mm.	in.
All locations not specified below	450	18	150	6	300	12
In a trench below 50 mm (2 in.) thick concrete or equivalent	300	12	150	6	150	6
Under a building (in raceway only)	0	0	0	0	0	0
Under minimum of 100 mm (4 in.) thick concrete exterior slab with no vehicular traffic and the slab extending not less than 150 mm (6 in.) beyond the underground installation	300	12	100	4	100	4
One- and two-family dwelling driveways and outdoor parking areas and used only for dwelling-related purposes	300	12	300	12	300	12

Notes:

(1) Cover is the shortest distance measured between a point on the top surface of any direct-buried cable, conduit, or other raceway and the top surface of finished grade, concrete, or similar cover.

(1) Raceways approved for burial only where concrete encased shall require a concrete envelope not less than 50 mm (2 in.) thick.

(1) Lesser depths shall be permitted where cables rise for terminations or splices or where access is otherwise required.

(1)

Where solid rock is encountered, all wiring shall be installed in metal or nonmetallic raceway permitted for direct burial.

(1) The raceways shall be covered by a minimum of 50 mm (2 in.) of concrete extending down to rock.

(B) Protection From Physical Damage.

(1) General.

Direct-buried cables emerging from ground shall be protected by enclosures, raceways, or other approved means extending from the minimum cover distance required by Table 830.47(A) below grade to a point at least 2.5 m (8 ft).

(2) Types BMU and BLU Cables.

Types BMU and BLU direct-buried cables emerging from ground shall be protected in accordance with 830.47(B)(1) by any one of the following methods:

(1) Rigid metal conduit (RMC)

(2) Intermediate metal conduit (IMC)

(3) Rigid nonmetallic conduit

(4) Other approved means

Exception: Protection from physical damage shall not be required if low-powered network-powered broadband communications circuit is equipped with a listed fault protection device that is located on the network side of the network-powered broadband cable being protected and the device is appropriate to the network-powered broadband communication cable used.

Supplemental Information

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Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 14:19:00 EDT 2024

Committee Statement

Committee Statement: Network-powered broadband low-powered cable is a limited energy cable and would fall under Article 722.

Network-powered broadband medium powered cable is not a limited energy cable and therefore the requirements was inadvertently deleted in First Draft.

Response Message: SR-8165-NFPA 70-2024

Public Comment No. 1728-NFPA 70-2024 [New Part after III.]

Second Revision No. 8158-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 , 800.93(A), 800.93(B)(1), and 800.93(C)(1) shall apply.~~

~~Informational Note: See NFPA 780-2026, *Standard for the Installation of Lightning Protection Systems* , for the theory of the term *rolling sphere* .~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 14:00:14 EDT 2024

Committee Statement

Committee Statement: Since Chapter 8 is no longer independent, the grounding requirements from Chapter 8 were moved to 750.75(A)-(B). As the requirements are integrated with the rest of the NEC, the reference to Article 750 is no longer required.

Response Message: SR-8158-NFPA 70-2024

Public Comment No. 942-NFPA 70-2024 [Section No. 840.94]

Second Revision No. 8160-NFPA 70-2024 [Section No. 840.101]

~~**840.101** Premises Circuits Not Leaving the Building.~~

~~If the network terminal is served by a nonconductive optical fiber cable, or where any non-current-carrying metal member of a conductive optical fiber cable is interrupted by an insulating joint or equivalent device, and circuits that terminate at the network terminal are completely contained within the building (i.e., they do not exit the building), 840.101(A) , 840.101(B) , or 840.101(C) shall apply, as applicable.~~

~~**(A)** Coaxial Cable Shield Grounding.~~

~~The shield of coaxial cable shall be grounded by one of the following:~~

(1) ~~Any of the methods described in 820.100 or 800.106~~

(2) ~~A fixed connection to an equipment grounding conductor as described in 250.118~~

(3) ~~Connection to the network terminal grounding terminal provided that the terminal is connected to ground by one of the methods described in 820.100 or 800.106, or to an equipment grounding conductor through a listed grounding device that will retain the ground connection if the network terminal is unplugged~~

~~**(B)** Communications Circuit Grounding.~~

~~Communications circuits shall not be required to be grounded.~~

~~**(C)** Network Terminal Grounding.~~

~~The network terminal shall not be required to be grounded unless required by its listing. If the coaxial cable shield is separately grounded as described in 840.101(A)(1) or 840.101(A)(2) , the use of a cord and plug for the connection to the network terminal grounding connection shall be permitted.~~

~~Informational Note: If required to be grounded, a listed device that extends the equipment grounding conductor from the receptacle to the network terminal equipment grounding terminal is permitted. Sizing of the extended equipment grounding conductor is covered in Table 250.122(A) .~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 14:03:01 EDT 2024

Committee Statement

Committee Statement: The requirements have been relocated to Article 750 for grounding of limited-energy and communication systems, specifically 750.80(A)-(C).

Response Message: SR-8160-NFPA 70-2024

Public Comment No. 943-NFPA 70-2024 [Section No. 840.101]

Second Revision No. 8161-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 780-2026, *Standard for the Installation of Lightning Protection Systems*, 4.6.3.2 for the application of the term *rolling sphere*.~~

Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 14:04:33 EDT 2024

Committee Statement

Committee Statement: The requirements have been relocated to new article 750 for grounding of limited-energy and communications systems, specifically new section 750.75(A)-(B) and exception. With the removal of Chapter 8's independence, there is no need to re-establish the rules again in Article 840.

Response Message: SR-8161-NFPA 70-2024

Public Comment No. 1552-NFPA 70-2024 [Section No. 840.102]

Second Revision No. 8200-NFPA 70-2024 [New Part after IV.]

830.133 Installation of Network-Powered Broadband Communications Cables and Equipment.

Cable and equipment installations within buildings shall comply with 830.133(A) through 830.133(C), as applicable.

(A) Separation of Conductors.

Separation of conductors shall comply with 830.133(A)(1) and 830.133(A)(2).

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

Separation of conductors in raceways, cable trays, boxes, enclosures, and cable routing assemblies shall comply with 830.133(A)(1)(a) and 830.133(A)(1)(b).

(a) *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) *Medium-Power Network-Powered Broadband Communications Circuit Cables with Optical Fiber Cables and Other 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 of any of the following wires and cables:

(1) Communications wires and cables

(2) Conductive optical fiber cables

(3) CATV-type coaxial cables

(4) Class 1 cables

(5) Class 2, Class 3, and Class 4 cables

(6) Power-limited fire alarm cables

(7) Conductors of electric light

(8) Power cables

(9) Non-power-limited fire alarm circuit cables

Exception No. 1: Network-powered broadband communications medium-power cables 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 medium-power 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 medium-power cables.

(2) Other Applications.

Network-powered broadband communications medium-power cables shall be separated at least 50 mm (2 in.) from conductors of any electric light, power, Class 1, and non-power-limited fire alarm circuits.

Exception No. 1: Separation shall not be required where: (1) all of the conductors of electric light, power, Class 1, and non-power-limited fire alarm circuits are in a raceway or in metal-sheathed, metal-clad, nonmetallic-sheathed, Type AC, or Type UF cables, or (2) all of the network-powered broadband communications medium-power cables are encased in a raceway.

Exception No. 2: Separation shall not be required where the network-powered broadband communications medium-power cables are permanently separated from the conductors of electric light, power, Class 1, and non-power-limited fire alarm circuits by a continuous and firmly fixed nonconductor, such as porcelain tubes or flexible tubing, in addition to the insulation on the wire.

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

Raceways shall be used for their intended purpose. Network-powered broadband communications medium-power cables shall not be strapped, taped, or attached by any means to the exterior of any conduit or raceway as a means of support.

(C) Splicing of Network-Powered Communications Medium-Power Cables.

Where a network-powered broadband communications medium-power cable is spliced or extended, a listed junction box or listed patch panel shall be used.

Supplemental Information

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70_CMP16_Article830.133_SR8200.docx	For Staff Use	
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Submitter Information Verification

Committee: NEC-P16

Submittal Date: Mon Oct 21 17:43:45 EDT 2024

Committee Statement

Committee Statement: Requirements for all network-powered broadband communications cables were deleted and moved to Article 722. However, medium-power network-powered broadband communications cables are not limited energy cables; they should have not been deleted from Article 830. This revision restores medium-power network-powered broadband communications cable installation to Article 830. The text was revised to match NEC Style Manual.

Response Message: SR-8200-NFPA 70-2024

Public Comment No. 664-NFPA 70-2024 [Part IV.]