

Welcome Iowa Electricians!

What Does Iowa Require?

18-Hours of Continuing Education Required

- The Iowa electrician must complete no less than 18 Continuing Education Units (CEUs) in each three-year license cycle.
- No less than 6 of those 18 CEUs must focus on the most recent Iowa electrical code.
- JADE Learning's two-hour VILT sessions satisfy ALL of Iowa's requirements for electrical continuing education.
- **9 VILT sessions provides you all 18 hours.**



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2023 NEC Changes

Important Changes from the 2023 NEC

6:00 PM Eastern Time

← 5 PM in Iowa

5:45 PM – 6:00 PM Eastern	Registration / Check In
6:00 PM – 7:00 PM Eastern	NEC Chapters 8 and 9 <i>with poll questions</i>
7:00 PM – 7:10 PM Eastern	Break
7:10 PM – 8:00 PM Eastern	NEC Chapters 8 and 9 <i>continued with poll questions</i>
8:00 PM Eastern	Questions for the instructor?

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2023 NEC Changes Article 800 Communications Systems

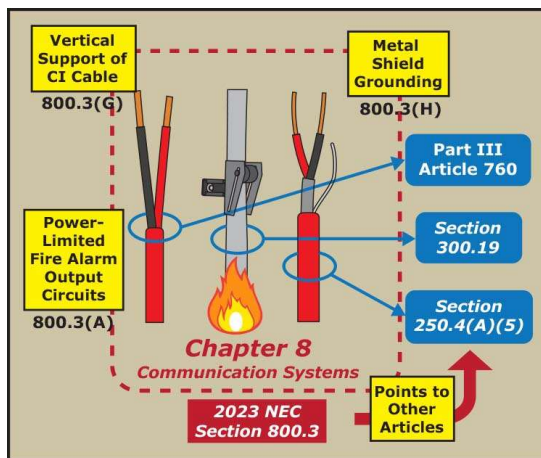
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800.3 Other Articles

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- In the 2023 NEC, Section 800.3 was expanded and revised for clarity and accuracy.
 - First, the entire section now specifies that the definitions in **Article 100 apply**
 - (A) was revised to be titled **Output Circuits** is a new section that now specifically states five additional Parts of Articles that apply
 - (F) was revised to be titled **Optical Fiber Systems** states that **Article 770** applies
 - (G) was revised to be titled **Vertical Support for Fire-Resistive Cables and Conductors** and mentioned where **Section 300.19** applies
 - (H) is also a new section titled **Bonding and Grounding of Cable Shields** that specifies where **Section 250.4(A)(5)** applies.

2023 NEC Changes

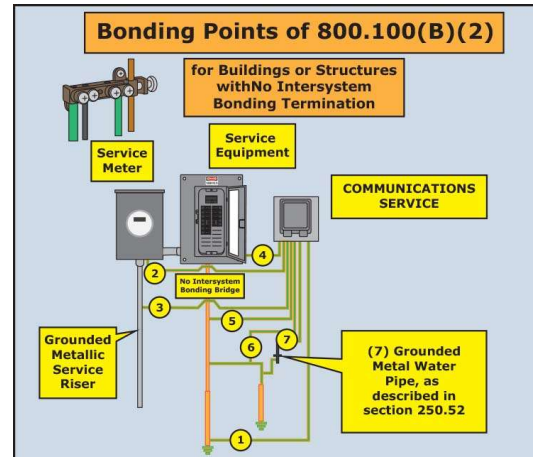
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800.100(B)(2) Electrode. In Buildings or Structures with Grounding Means

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- Section 800.100(B)(2) underwent some structural changes in the 2023 NEC.
- In general, the information included in this section remains the same.
 - The Informational note including Figure 800.100(B)(2) was moved to be under subsection (B)(2)(1)
 - The note was revised to include more specific information.
 - **The bonding point that was previously listed as number (2) was moved down to (7) and all others moved up**



2023 NEC Changes

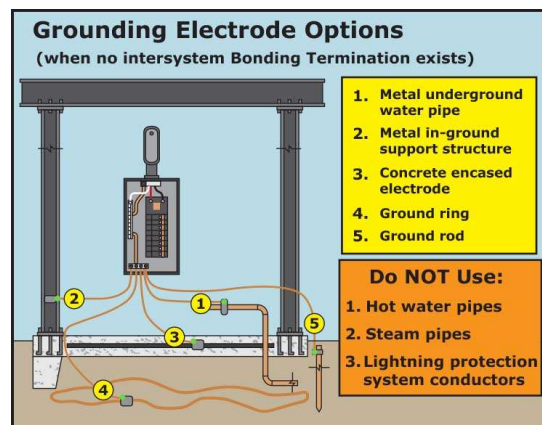
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800.100(B)(3) In Buildings or Structures Without an Intersystem Bonding Termination or Grounding Means

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- In the 2023 NEC, there was a very small revision to 800.100(B)(3).
 - This revision added a ***bonding*** to the uses that steam pipes, hot water pipes, or lighting protection system conductors cannot be used for protectors and grounded metal numbers.



2023 NEC Changes

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Article 800.113 Installations of Cables Used for Communications Circuits, Communications Wires, Cable Routing Assemblies, and Communications Raceways

- Section 800.113 was revised in the 2023 NEC to provide more information
 - It added **Table 800.113**
 - Section (A) the verbiage was revised and removes the reference to 820.48 from the exception
 - Sections (B)-(L) now have two sections (1) which includes **Uses Permitted and (2) which contains Uses Not Permitted**

How to Use Table 800.113

Use-Ratings (with added Suffix Codes):	Listed Cable Types Used for Communications Circuits:
Plenum (P)	CMR, CATVR, OFNP, OFCP
Riser (R)	CMR, CATVR, BMR, BLR, OFNR, OFCR
General-purpose (G or Blank)	CMG, CH, CATV, BM, BL, OFNG, OFN, OFCG, OFC
Limited-use (X)	CMX, CATXX, BLX
Undercarpet (UC)	CUMC
Underground (U)	BMU, BLU

Find the Use-Rating for the Location Needed, as Described in 800.113 (B)-(L)

Choose Listed Cable Types Bearing these Permanent Markings

Suffix Codes

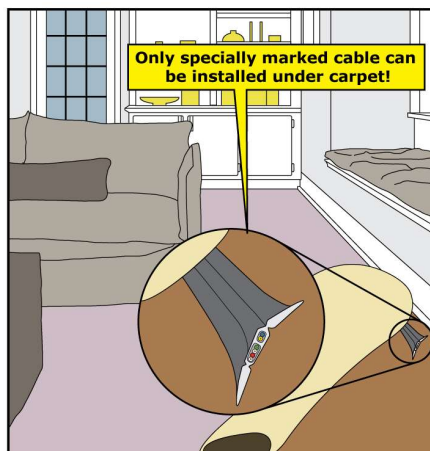
Avoid Hybrid Communications and Power Cables, except in One- and Two-family Dwellings

2023 NEC Changes

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800.179 Wires and Cables

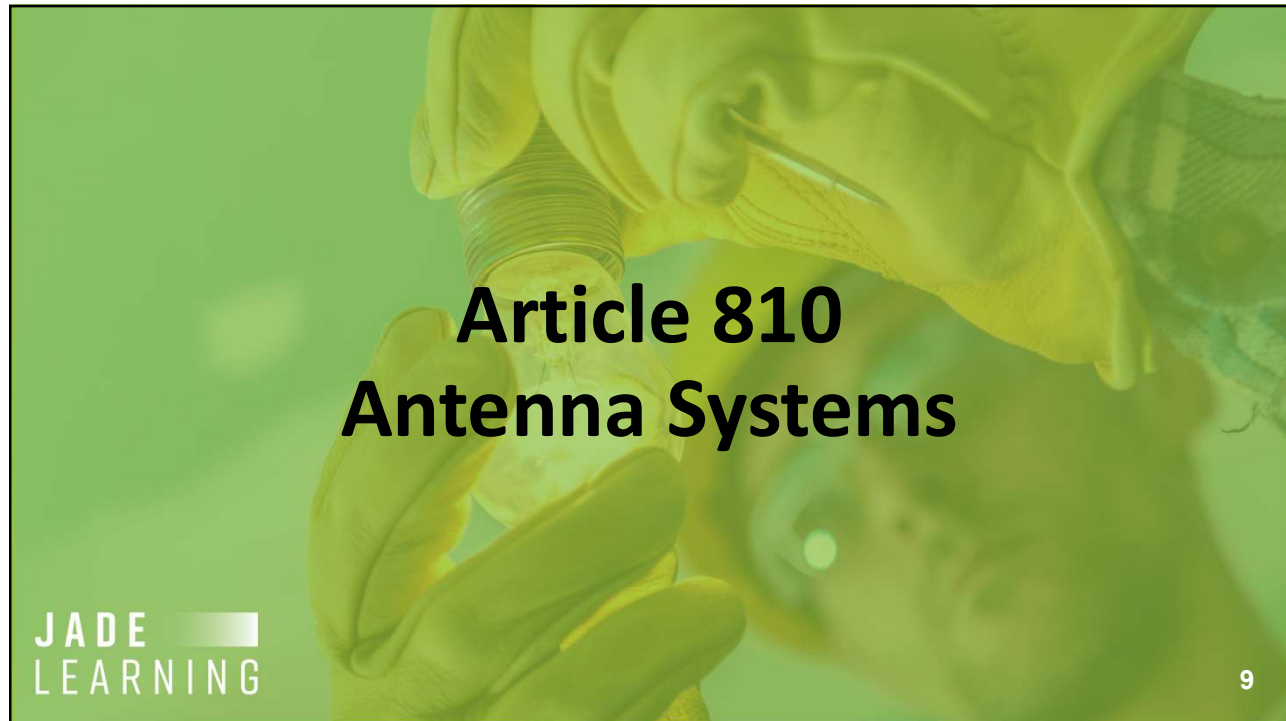


- In the 2023 NEC, there were significant changes to 800.179, Wires and Cables.
 - The first, in the general section, there is significantly more information, including **copper cables for conductors in communications cables (other than coaxial), cables containing optical fibers shall be marked -OF, voltage rating should be not less than 300 volts, etc.**
 - There is also an exception and 3 informational notes added to this section.
 - Subsection (C) is expanded to have two subsections
 - Subsections (E) through (I) are added

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810.15 Grounding or Bonding

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Lower antenna protected below grounded metal using 150ft radius rolling sphere method

Antenna itself unprotected under the 150ft radius rolling sphere method.

The bonding conductor must terminate on the intersystem bonding termination, if present.

The metal support must be bonded in accordance with 810.21

Legend:
Imaginary rolling sphere
Protected area below

- Section 810.15 in the 2020 NEC previously only covered Grounding. Now in the 2023 NEC, **Bonding is also covered.**
- The informational note has also been updated to reflect the most recent version of NFPA 780.

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Article 830 Network-Powered Broadband Communication Systems

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830.40(B) Low-Power Circuits

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- In the 2023 NEC, the requirements for section 830.40(B) remain the same.
- The change for this section is the removal of the exception that was previously included in the 2020 NEC.

2023 NEC Changes

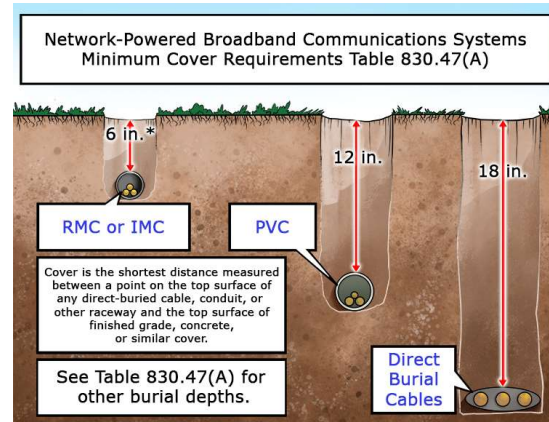
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830.47 Underground Network-Powered Broadband Communications Cables Entering Buildings

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- In the 2023 NEC, section 830.47 only has two subsections. These subsections, now (A) and (B), contain the information of subsections (C) and (D) in the 2020 NEC.
 - (A) Protection from Physical Damage
 - (B) Pools
- Additionally, the exception in (A) was revised slightly.



2023 NEC Changes

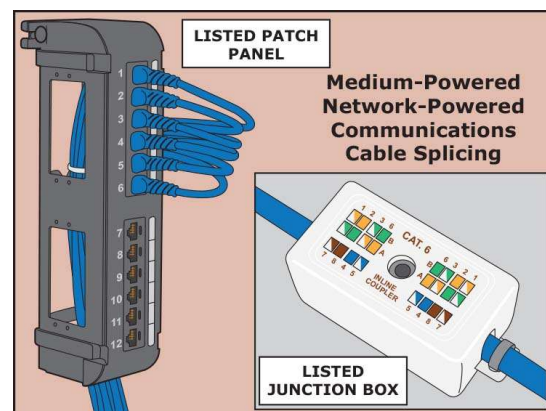
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830.133(C) Splicing of Medium-Powered Network-Powered Communications Cables

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- Section 830.133(C) is an all-new section in the 2023 NEC.
 - **Where a medium-powered network-powered broadband communications cable is spliced or extended, a listed junction box or listed patch panel shall be used.**



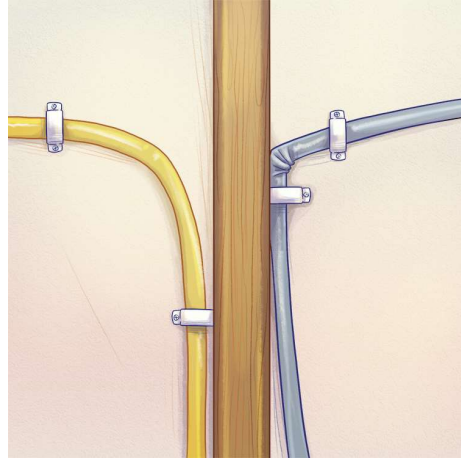
2023 NEC Changes

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830.160 Bends

- Section 830.160 has been expanded in the 2023 NEC.
- It contains the same basic requirement as the 2020 NEC, but now also states ***the radius of the curve of the inner edge of any bend shall not be less than 10 times the diameter of the cable***
- There was also an informational note added to see ANSI/TIA-568.0-E.



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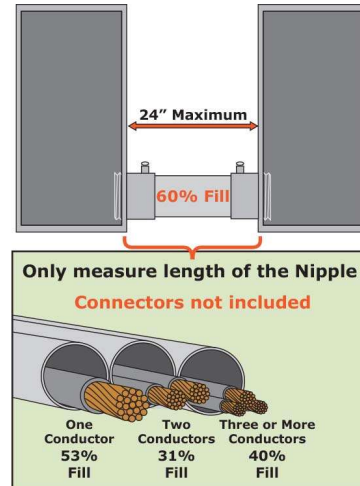
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2023 NEC Changes Chapter 9 Tables

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Chapter 9, Table 1

- In the 2023 NEC, Notes to Tables (4), which applies to Table 1, **has been revised to state not including connectors.**



2023 NEC Changes

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Annex C

Conduit, Tubing, and Cable Tray Fill Tables for Conductors and Fixture Wires of the Same Size

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Annex C, Table C.1 Conduit, Tubing, and Cable Tray Fill Tables for Conductors and Fixture Wires of Same Size

EXCERPT Table C.1 Maximum Numbers of Conductors or Fixture Wires in Electrical Metallic Tubing (EMT) (Based on Chapter 9: Tables 1, Table 4, and Table 5)

Type	Conductor Size (AWG/kcmil)				4 (103)	5 (129)	6 (155)
		3/4 (12)	1/2 (16)	3/8 (21)			
THHN, THWN, THWN-2	14	—	12	22	608	914	1290
	12	—	9	16	443	666	941
	10	—	5	10	279	420	593
	8	—	3	6	161	242	342

- In the 2020 NEC, 5- or 6-inch (trade sizes) were not recognized for EMT or IMC conduits
- The 2023 NEC **adds these items C.1 for EMT and C.4 for IMC.**

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Annex K

Use of Medical Electrical Equipment in Dwellings and Residential Board-and-Care Occupancies

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Annex K Use of Medical Electrical Equipment in Dwellings and Residential Board-and-Care Occupancies

- Annex K is an all-new addition to the 2023 NEC. While it is ***not part of the requirements*** of the NEC, it is a very helpful informational annex that includes information on Medical Electrical Equipment in dwellings and residential board-and-care occupancies.

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THANK YOU FOR ATTENDING!

Questions?
For additional instructor support, please contact
instructor@jadelearning.com

For questions about your continuing education, please
contact registrar@jadelearning.com

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