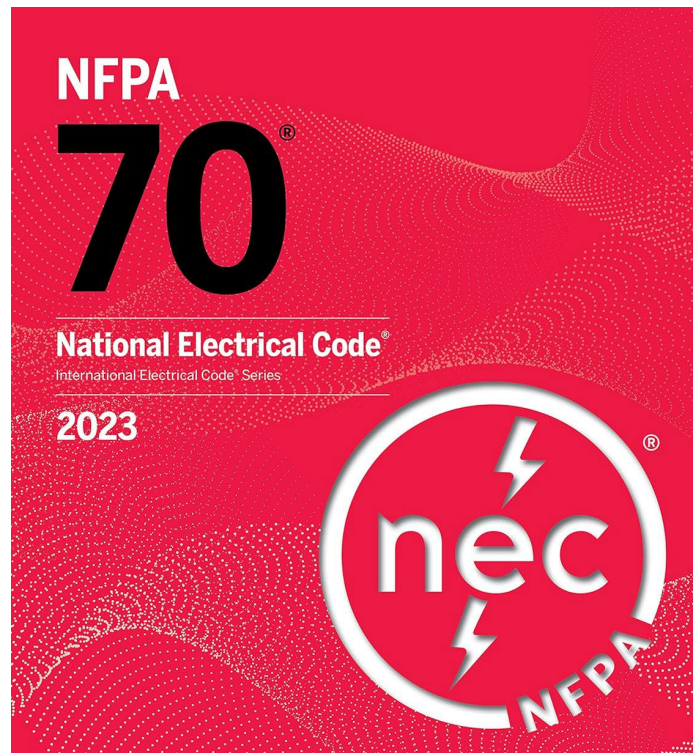




Summary of NEC Code changes 2023 Chapter 3 and 4



4 PDH

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NEC Code changes 2023

Chapter 3 and 4

Introduction:

The National Electrical Code (NEC), is a set of standards for the safe installation of electrical wiring in the United States, and is revised every three years to account for the latest safety and technology.

The NEC is made up of 18 CMPs (Code Making Panel)s, each with representatives from different groups, including manufacturers, inspectors, users, and labor. The National Fire Protection Association (NFPA) sponsors the development of the NEC

The abbreviated CMP has been repeated constantly throughout this course and it stands for "Code Making Panel".

Code Making Panel is a group of unpaid people who are in charge of processing all the proposed changes, removals and additions of specific bits of language to the next edition of the National Electrical Code. Each CMP (Code Making Panel) oversees only a part of the corpus of the NEC.

Summary of NEC Code changes 2023

Chapter 3 and 4

Chapter 3

Wiring Methods and materials

Articles 300- 398

Summary of Change

Articles 342, 344, 348, 350, 352, 353, 354, 355, 356, 358, 360, and 362 were revised by removing the word "Types" from their titles.

What is its effect on the industry

This change by CMP (Code Making Panel)-8 will increase the application and easy use usability of the NEC by the electrical professional.

Articles 300.2

[A] Limitations, Voltage

Summary of Change

Section 300.2(A) has been updated by CMP (Code Making Panel)-3 to include 1500 volts DC in two areas. This amendment clarifies that the wiring methods detailed in Chapter 3 should be applied to systems rated at 1000 volts AC or 1500 volts DC, nominal or less, unless otherwise restricted by other parts of the NEC.

What is its effect on the industry

As electrical contractors increasingly take on medium voltage work traditionally handled by utility companies, targeted articles will assist with identifying requirements, providing education, and guiding inspections. This will benefit both installers and inspectors.

Articles 300.4

[E] Ex. No 1 and 2 Cables, Raceways, or Boxes Installed in or Under metal- Corrugated roof decking

Summary of Change

CMP (Code Making Panel)-3 has introduced a new Exception No. 1 and made modifications to Exception No. 2 in section 300.4(E). These updates acknowledge poured concrete over metal roof decking as a form of physical protection and include the addition of "listed steel or malleable iron fittings and boxes" used with rigid metal conduit (RMC) and intermediate metal conduit (IMC).

What is its effect on the industry

The update to 300.4(E) clarifies for the installer and the Authority Having Jurisdiction (AHJ) that following these exceptions eliminates the need to adhere to the main rule requirements of 300.4(E).

Articles 300.4

[G] Fittings

Summary of Change

CMP (Code Making Panel)-3 has introduced new language in section 300.4(G), specifying that protective fittings must be installed "prior to the installation of conductors."

What is its effect on the industry

Although fittings that can be installed after the conductors have been pulled in are available, the new language clarifies that the purpose of the protective fitting is to safeguard the conductors during their insertion into the raceway, not after.

- Determining whether this fitting was installed before the conductors can be challenging for an AHJ during an inspection. There are fittings specifically designed to be installed post-conductor installation, typically after the conductors have been terminated to the equipment. This type of fitting can be placed without disconnecting the conductors by sliding it over them and securing it to the raceway or fitting. Therefore, it could be argued that such a fitting was installed prior to the conductors' installation.

Articles 300.5

Minimum Cover Requirements

Summary of Change

CMP (Code Making Panel)-3 has added Electrical Metallic Tubing (EMT) to Column 3 of Table 300.5 to clearly specify that EMT can be installed in underground locations.

What is its effect on the industry

This change clarifies for electrical professionals that EMT can be used in underground installations when the UL guide card and Article 358 requirements are adhered to.

Articles 300.5

[D] Direct buried conductors and cables

Summary of Change

CMP (Code Making Panel)-3 has removed the words "direct buried" from the text in section 300.5(D), leaving only "conductors and cables."

What is its effect on the industry

This revision will provide clarity for both installers and inspectors regarding the requirements for underground conductor and cable installations.

Articles 300.6

[A] Ferrous metal equipment

Summary of Change

The informational note referencing field-cut threads was removed and replaced with positive language.

What is its effect on the industry

This change enables the AHJ to enforce requirements by providing positive code language that can be cited, rather than relying on an informational note that is not enforceable and is merely informative.

Articles 300.11

[C] Raceways used as means of support

Summary of Change

CMP (Code Making Panel)-3 has added Class 3 circuit conductors as a type of conductor permitted to be supported by the raceway containing power supply conductors that supply the equipment.

What is its effect on the industry

This allows electrical professionals to use the same techniques for Class 3 installations that are currently permitted for Class 2 cables.

Articles 300.14

Length of free conductors at outlets, junctions, and switch points

Summary of Change

CMP (Code Making Panel)-3 has added text to section 300.14 allowing free conductors to be spliced at outlet, junction, and switch points.

What is its effect on the industry

This change will help electrical professionals interpret the requirement more easily. It clarifies that a conductor can be spliced with a shorter conductor to meet the 6-inch requirement specified in this section. This will reduce misunderstandings and confusion, thereby adding consistency to the Code.

Articles 300.17

Conductors and cables in raceway

Summary of Change

CMP (Code Making Panel)-3 received substantiation for Section 300.17 to acknowledge that cables are installed in raceways and to establish requirements to prevent damage during and after installation. The revised Informational Note provides guidance on the location of the various wiring methods.

What is its effect on the industry

The revisions to the Informational Note will help guide both installers and inspectors to the appropriate sections for additional information.

Articles 300.25

Exit enclosures (Stair towers)

Summary of Change

CMP (Code Making Panel)-3 has removed the term “be separated from the building” and added the phrase “have a fire resistance rating” to Section 300.25. Additionally, an exception has been included to address egress lighting on outside exterior doorways.

What is its effect on the industry

This revised text will provide clarity for electrical professionals regarding the egress lighting requirement. By incorporating a defined term from the building code, the requirements become easier to understand. The new exception addresses a long-standing trade practice for powering egress luminaires that previously constituted a code violation.

Articles 30

300.26 Remote- control and signaling circuits classification

Summary of Change

CMP (Code Making Panel)-3 has created a new Section 300.26 for remote-control and signaling circuits.

What is its effect on the industry

This revision will provide much-needed clarity and approved usability for remote-control and signaling circuit installations, benefiting both installers and inspectors.

Articles 305

General Requirements for Wiring Methods and Materials for Systems Rated Over 1000 Volts ac, 1500 Volts dc, Nominal

Summary of Change

CMP (Code Making Panel)-3 has created a new Article 305 to cover general wiring methods and installations for systems rated over 1000 volts AC and 1500 volts DC.

What is its effect on the industry

Consolidating the information for medium voltage (MV) into one article and including additional details on MV installations will offer the electrical industry, including installers and inspectors, enhanced guidance for medium voltage (MV) installations.

Removal; Tables 310.16, 310.17 AND 310.20 Ampacities of Conductor Tables

Summary of Change

CMP (Code Making Panel)-6 has removed "XHWN" from the 90-degree Celsius columns of Tables 310.16, 310.17, and 310.20.

What is its effect on the industry

These revisions help electrical professionals in selecting the proper conductor insulation and ensure that these conductors are used appropriately within their rated/tested range.

Articles 312.10

Screws and Other Fasteners

Summary of Change

CMP (Code Making Panel)-9 has added a new Section 312.10 to address field-installed screws or other fasteners entering a cabinet, cutout box, or meter socket. This additional language protects against damage to conductors caused by sharp projections from exposed threads of screws that pass through covers.

What is its effect on the industry

This change will require installers to pay greater attention to the type of fastener they use and how far it protrudes into the wiring space, thereby protecting conductors from damage caused by screws and fasteners.

Articles 314.5

Screws and Other Fasteners

Summary of Change

A new Section 314.5 has been added to address screws and fasteners entering the wiring space of boxes and conduit bodies. CMP (Code Making Panel)-9 included this language to protect against damage to conductors from sharp projections of exposed threads of screws passing through covers or sides of boxes.

What is its effect on the industry

This change will require electrical professionals to pay greater attention to the type and length of fasteners used. Fasteners such as drywall screws will no longer be acceptable. This measure will help protect conductors from damage.

Articles 314.16

[B][6] Terminal Block Fill

Summary of Change

A new subdivision, 314.16(B)(6), was added to address terminal blocks installed in boxes. CMP (Code Making Panel)-9 included the word "assembly" to ensure that not all the poles of the terminal block are counted towards the volume allowance for box fill concerns.

What is its effect on the industry

Care must be taken by electrical professionals when selecting the size of the box to be used. This revision provides a better understanding of how to calculate box fill for terminal blocks. When terminal block assemblies are used, a larger box may be required based on the box fill calculations. Additionally, terminal blocks could be

added at a later time, potentially leading to an overfilled box when the terminal block(s) are installed.

Articles 315.1

Dimensions of Boxes

Summary of Change

CMP (Code Making Panel)-9 revised the existing language in Section 314.24 to broaden its scope, addressing side entries for outlet and device boxes.

What is its effect on the industry

Electrical professionals will need to familiarize themselves with these requirements to ensure that properly sized boxes are installed in the field. Effective communication between the authority having jurisdiction (AHJ) and installers is essential to determine the devices intended for installation in the boxes, thereby ensuring the boxes are of the appropriate size.

Articles 315.1

Scope

Summary of Change

CMP (Code Making Panel)-6 clarified the voltages covered by Article 315, which is now titled "Medium Voltage Conductors, Cable, Cable Joints, and Cable Terminations." Article 311 has been deleted, with its requirements relocated to Article 315. Additionally, new requirements for cable joints and terminations have been added to this article.

What is its effect on the industry

This information will help electrical professionals ensure that conductors are installed correctly and within their rated/tested range.

Articles 320.23

[A] Cables Run Across the Top of Framing Members. (In Accessible Attics)

Summary of Change

CMP (Code Making Panel)-6 received substantiation to use the term "Framing Members" instead of "Joists" in Section 320.23(A) when considering the installation of armored cable: Type AC.

What is its effect on the industry

This change adds clarity for both the installer and the AHJ when interpreting code language regarding the location designated as "In Accessible Attics."

Articles 322.56

Taps

Summary of Change

CMP (Code Making Panel)-6 updated the flat cable assembly requirements by replacing the term "color-coded" with "marked" in Section 322.56(B).

What is its effect on the industry

This change provides clarity and consistency with other code sections. It allows for "marking" of conductor taps for flat cable assemblies (Type FC) to be installed according to the requirements in Section 322.56(B).

Articles 330.112

[A] 1000 Volts or Less. (MC Cable)

Summary of Change

CMP (Code Making Panel)-6 made several editorial changes in Section 330.112(A) to align with the addition of 16 AWG copper conductors for general use wiring methods with metal-clad cable (Type MC).

What is its effect on the industry

This revision will clarify and permit the use of 16 AWG conductors as control and signal circuits for ungrounded, grounded, and equipment grounding conductors.

Articles 337

Industrial Mobile Cable: Type IM

Summary of Change

CMP (Code Making Panel)-6 updated all references in Article 337 from the former Type P cable to Type IM cable.

What is its effect on the industry

This revision clarifies for electrical professionals the application of this type of cable and its capability to function in severe environments.

Articles 342.20

[B] Intermediate Metal Conduit

Summary of Change

CMP (Code Making Panel)-8 revised Section 342.20(B) for intermediate metal conduit (IMC), specifying that a 6-inch trade size is the largest that can be installed.

What is its effect on the industry

This change permits the use of Trade Size 5 and 6 IMC. It should be noted that UL standard 1242 does not currently include IMC trade sizes 5 and 6. AHJs, installers, and designers will need to ensure compliance with Section 342.6 regarding listing requirements.

Articles 344.28

Reaming and Threading (Rigid Metal Conduit)

Summary of Change

CMP (Code Making Panel)-8 clarified the necessity of adhering to the manufacturer's requirements for reaming and threading PVC-coated rigid metal conduit (RMC) in Section 344.28.

What is its effect on the industry

This guidance will help ensure that PVC-coated RMC is not damaged when field modified by cutting, reaming, and threading, allowing it to function properly in its intended environment. Electrical professionals will need to use the correct tools and follow the manufacturer's guidelines when installing this product.

Articles 352.44

[B] Reaming and Threading (Rigid Metal Conduit)

Summary of Change

CMP (Code Making Panel)-8 added requirements for installing an expansion fitting for underground runs of direct buried PVC conduit that emerge from the ground.

What is its effect on the industry

Electrical professionals will need to install expansion fittings for PVC conduit installations that emerge from the ground. These fittings should be provided above grade when necessary to compensate for earth settling or movement.

Articles 353.48

High Density Polyethylene Conduit (HDPE)

Summary of Change

Section 353.48 was revised by CMP (Code Making Panel)-8 to specify that the joining methods for High Density Polyethylene Conduit (HDPE) must be those identified by the manufacturer. Heat fusion or butt fusion joints are not permitted.

What is its effect on the industry

This change will impact electrical inspectors and installers by eliminating the requirement for an "approved method" for joining HDPE conduit. Joints must be made using a method identified by the manufacturer, with heat fusion or butt fusion joints not permitted.

Articles 358.20

[B] Electrical Metallic Conduit (EMT)

Summary of Change

CMP (Code Making Panel)-8 increased the maximum size of electrical metallic conduit (EMT) to metric designator 155 (trade size 6) in Section 358.20(B).

What is its effect on the industry

This change permits the use of 5- and 6-inch EMT. It is important to note that UL standards 797 (Electrical Metallic Tubing — Steel) and 797A (Electrical Metallic Tubing — Aluminum and Stainless Steel) do not currently include 5- and 6-inch EMT. AHJs, installers, and designers must ensure compliance with Section 358.6 regarding listing requirements.

Articles 369

Insulated Bus Pipe (IBP)/Tubular Covered Conductors (TCC), Systems

Summary of Change

CMP (Code Making Panel)-8 has introduced a new Article 369 to cover the use, installation, and construction specifications for insulated bus pipe (IBP) systems.

What is its effect on the industry

It is important for inspectors, installers, and designers to note that Insulated Bus Pipe (IBP) and IBP systems must be listed according to NEC 369.9 and installed by qualified persons. All relevant documentation must be made available to the authority having jurisdiction, as specified in NEC 369.14.

Articles 371

Flexible Bus Systems

Summary of Change

CMP (Code Making Panel)-8 received substantiation for the creation of a new article covering the use and installation requirements of flexible bus systems and their associated fittings, resulting in the creation of new Article 371, Flexible Bus Systems.

What is its effect on the industry

It is of special interest to inspectors, installers, and designers that flexible bus systems be listed per NEC 371.6. Currently, there is not a specific standard available for listing this product. There is an outline of investigation developed for UL standard 1386, Outline of Investigation for Flexible Bus Systems, and UL Standard 1387, Outline of Investigation for Flexible Insulated Bus.

In addition to the requirements of NEC 110.3(B), NEC 371.18(A) would also require the listed system to be installed under design engineering supervision and in accordance with the manufacturer's instructions, including supporting and securing. All documentation shall be available to the authority having jurisdiction (AHJ).

Articles 398.15

[C] High-Density Polyethylene Conduit (HDPE Conduit)

Summary of Change

CMP (Code Making Panel)-6 has removed high-density polyethylene conduit (HDPE) as a permitted means of providing physical protection for open wiring on insulators in Section 398.15(C).

What is its effect on the industry

This revision will provide electrical professionals and the industry with clarification on the proper uses and prohibitions of HDPE, thereby enhancing electrical safety.

Chapter 4

EQUIPMENT FOR GENERAL USE

Articles 404-495

Articles 404.1

Wall-Mounted Control Devices

Summary of Change

CMP (Code Making Panel)-9 added a new informational note to Section 404.1 concerning wall-mounted control devices.

What is its effect on the industry

With the addition of the informational note, electrical professionals will better understand that these wireless switch devices are not governed by the Code.

Articles 404.14

[D] Snap Switch Terminations

Summary of Change

CMP (Code Making Panel)-9 received substantiation regarding 14 AWG solid copper conductors used with snap switches. As a result, a new 404.14(D), Snap Switches with Push-In Terminals, was added between the pre-existing subdivisions.

What is its effect on the industry

The clarification that 14 AWG solid copper conductors are to be used with push-in terminals of snap switches ensures that the authority having jurisdiction (AHJ) and other electrical professionals understand the intended requirements for use.

Articles 404.16

Reconditioned Equipment

Summary of Change

CMP (Code Making Panel)-9 added a new Section 404.16 to address reconditioned equipment. This change specifies which control devices can and cannot be reconditioned after being damaged.

What is its effect on the industry

In cases where the control device has been damaged by water, fire, or products of combustion, it cannot be cleaned and put back into service. An inspector will need to be vigilant in determining whether the device has been replaced or not.

Articles 404.30

Switch Enclosures with Doors

Summary of Change

CMP (Code Making Panel)-9 revised the text to clarify the requirements for doors with switch mechanisms.

What is its effect on the industry

Electrical professionals need to be aware of these changes and ensure that the proper switch enclosure has a door with the specified provisions. This must be installed and verified before the installation is put into service.

Articles 406.2

Reconditioned Equipment

Summary of Change

CMP (Code Making Panel)-18 relocated the limitations for reconditioned equipment from Sections 406.3(A) and 406.7 to the new Section 406.2.

What is its effect on the industry

The xxx.02 sections of NEC articles are becoming the placeholders for reconditioned equipment requirements. Consolidating all reconditioned requirements and limitations in Section 406.2 will enhance usability for electrical professionals.

Articles 406.3

[D] Receptacle Terminations

Summary of Change

The new text added by CMP (Code Making Panel)-18 in 406.3(D) is intended to emphasize the limitations for receptacles installed on 15-ampere branch circuits. Only 14 AWG copper conductors used with "push-in" type terminals for receptacles are permitted. The old text in 406.3(D) has been moved to subdivision (E).

What is its effect on the industry

The new text will ensure that inspectors and installers better understand the limitations of terminations on receptacles. It will reemphasize the types of conductors allowed based on the specific markings on the receptacle terminals. There has been confusion within the electrical industry regarding the proper use of push-in type terminals and the type and size of conductors allowed to be terminated into these terminals. This new text will clear up the confusion and prevent future misapplication of the size and type of conductors allowed in push-in type terminals.

Articles 406.4

[D][3] Ground-Fault Circuit-Interrupter Protection

Summary of Change

Substantiation was provided to CMP (Code Making Panel)-18, which will require ground-fault circuit interrupter (GFCI) receptacles to be listed per 406.4(D)(3).

What is its effect on the industry

Requiring the listing specifically within Article 406 will add clarity for electrical professionals and remove any uncertainty about whether these GFCI devices are required to be listed. Listing these and other electrical equipment ensures the provision of safe electrical products and assures that all electrical devices are manufactured to the same standard, incorporating the same safety technologies for GFCI receptacles.

Article 406.4

[D][8] Ground-Fault Protection of Equipment (GFPE)

Summary of Change

Substantiation has been provided to CMP (Code Making Panel)-18 to require ground-fault protection of equipment (GFPE) for replacement receptacles that are required to have GFPE protection according to current Code requirements elsewhere in the NEC.

What is its effect on the industry

This new requirement will improve the safety of previously installed electrical systems and enhance the safety for people using electrical systems where ground-fault protection of equipment is mandated by newer versions of the Code.

Article 406.6

[D] Receptacle Faceplates

Summary of Change

The change by CMP (Code Making Panel)-18 adds language to 406.6(D), limiting the faceplate's load to one watt or less and specifically requiring the screws on the receptacles to be made only of brass or copper alloy.

What is its effect on the industry

There has been uncertainty about whether these devices were safely connected to receptacles by friction contact with the screw terminals. This change will clarify for electrical professionals that these installations are safe. It will allow these faceplates to be used as they have been in the past but will limit the wattage allowed to be carried through the connection points between the receptacle and the faceplates. The new language also requires these faceplates to be utilized only with receptacles equipped with brass or copper alloy screws.

Article 406.9

[C] Bathtub and Shower Space

Summary of Change

CMP (Code Making Panel)-18 clarified receptacle restrictions in and around bathtubs and showers in Section 406.9(C). A new Exception #4 was added to allow single receptacles within 36 inches of the tub or shower with specific limitations.

What is its effect on the industry

These changes help clarify the receptacle requirements for electrical professionals in areas containing a bathtub or shower space, thereby enhancing safety within these areas.

Article 406.12

Tamper-Resistant Receptacles

Summary of Change

CMP (Code Making Panel)-18 made some editorial changes to allow for easier understanding of where tamper-resistant receptacles are required. Additionally, new areas and occupancies were added where tamper-resistant receptacles will now be mandatory.

What is its effect on the industry

The editorial changes made within the subdivisions of 406.12 will make these requirements, and the locations where tamper-resistant receptacles are required, easier to understand for electrical professionals. The expansion of areas requiring tamper-resistant receptacles will provide an additional level of safety for occupants in these locations.

Article 408.4

Descriptions Required

Summary of Change

CMP (Code Making Panel)-9 has organized the requirements for circuit directories and descriptions in Section 408.4 into a list format for clarity.

What is its effect on the industry

This change will clarify the labeling and description requirements for panelboards and panels for electrical professionals.

Article 408.9

Replacement Panelboards

Summary of Change

CMP (Code Making Panel)-9 clarified the replacement requirements for panelboards in Section 408.9. There are now two listed items for the replacement of existing panelboards in an enclosure or cabinet.

What is its effect on the industry

This offers a degree of clarity to electrical professionals regarding the replacement of a panelboard within an existing cabinet. There has been confusion about whether one manufacturer's panelboard can be installed in another manufacturer's cabinet, and what to do if a specific manufacturer's panelboard is no longer available. This change will alleviate the confusion that exists between the AHJ and the installer when these instances arise in the field.

Article 408.38

Enclosure

Summary of Change

CMP (Code Making Panel)-9 clarified, with revised text, that when a panelboard installed in a cabinet, cutout box, or identified enclosure has an available fault current greater than 10,000 amperes, the panelboard and enclosure combination must be evaluated for the application.

What is its effect on the industry

This offers guidance and clarity to electrical professionals when panelboards with a deadfront are installed in cabinets, cutout boxes, or other identified enclosures. An exception is provided for installations not associated with dead fronts, which are

allowed to be accessible only to a qualified person. See Article 100 for the definition of a qualified person.

Article 408.43

Panelboard Orientation

Summary of Change

CMP (Code Making Panel)-9 received substantiation to add that panelboards cannot be installed in the face-down position, resulting in changes to Section 408.43.

What is its effect on the industry

This revision in 408.43 clarifies how panelboards can be installed. It now includes language specifying that these items cannot be installed in the face-up or face-down position. However, some NEC articles, such as Article 518, may allow for face-up applications as CMP (Code Making Panel)-15 has deemed this necessary to comply with the manufacturer's installation requirements.

Article 409.60

Industrial Control Panels

Summary of Change

Section 409.60 for industrial control panels was restructured by CMP (Code Making Panel)-11, creating subsections (A) Grounding and (B) Bonding.

What is its effect on the industry

The reorganization of 409.60 will clarify to Code users that grounding and bonding are required for these industrial control panels and provide the applicable code sections based on the specific direction or situation.

Article 409.70

Surge Protection for Industrial Control Panels

Summary of Change

CMP (Code Making Panel)-11 has added a new Section 409.70, requiring surge protection for industrial control panels.

What is its effect on the industry

The added requirement at Section 409.70 provides a level of equipment and personnel safety for the electrical professional when working on industrial control panels. Additionally, a level of equipment protection is also inadvertently provided.

Article 410.2

Reconditioned Equipment

Summary of Change

CMP (Code Making Panel)-18 has decided to include ballasts, LED drivers, and lamps in the revised Section 410.2, listing them as items prohibited from being reconditioned.

What is its effect on the industry

Including these additional items will help electrical professionals ensure public safety. It also enhances the clarity and usability of the Code.

Article 410.10

[F] Luminaires Installed in or Under Roof Decking

Summary of Change

CMP (Code Making Panel)-18 received evidence supporting the requirement for a minimum clearance of 38 mm (1 1/2 in.) for luminaires under any roof system where physical damage to the luminaire is possible, not just metal corrugated roof systems, as stated in Section 410.10(F). An exception was also added, specifying that the 38 mm (1 1/2 in.) spacing is not required when 50 mm (2 in.) of concrete covers metal-corrugated sheet roof decking.

What is its effect on the industry

Electrical professionals need to recognize that this change broadens the requirement for luminaires to maintain a minimum clearance of 1 1/2 inches from the lowest part of any roof system. This adjustment aims to reduce the likelihood of other trades, such as roofers, damaging luminaires installed near the underside of roofs. The new rule now applies to all types of roofs in all occupancies, including dwellings, which are more likely to be impacted by this change. Previously, the NEC requirement was limited to metal corrugated roof systems, typically found on commercial or industrial buildings.

Article 410.71

Disconnecting Means for Fluorescent or LED Luminaires

Summary of Change

CMP (Code Making Panel)-18 has moved the requirement for disconnects for luminaires to Section 410.71 due to the inclusion of LED drivers in this section.

What is its effect on the industry

Electrical professionals should be aware that the information previously found in Section 410.130(G) has been relocated to Section 410.71. This change aims to better align the wiring requirements within Article 410, enhancing safety for both installers and maintenance personnel involved in repairing and maintaining luminaires.

Article 410

PART XVII Germicidal Irradiation

Summary of Change

CMP (Code Making Panel)-18 has added a new Part XVII to Article 410 to address the growing use of germicidal luminaires for disinfecting purposes. The increased utilization of these products has been driven by the COVID-19 pandemic and other health concerns.

What is its effect on the industry

Incorporating these requirements into the NEC enables installers and Authorities Having Jurisdiction (AHJ) to understand the limitations and installation requirements for these specialized luminaires.

Article 410.184

GFCI & SPGFCI Protection

Summary of Change

CMP (Code Making Panel)-18 has revised Section 410.184 to clarify the conditions under which GFCI protection is required for horticultural lighting. An exception has been added, mandating the use of a special purpose ground-fault circuit interrupter (SPGFCI) on circuits that exceed 150 volts to ground.

What is its effect on the industry

The revisions will relieve electrical professionals from the need to provide GFCI or SPGFCI protection for 277-volt, cord-connected, horticultural lighting that is hard-

wired. Electrical inspectors will benefit from clear and enforceable Code language, eliminating the need to rely on Section 90.4 to approve an installation.

Article 422

Appliances

Summary of Change

Sections 422.3, 422.4, 422.15, 422.23, 422.46, and 422.50, which pertain to appliances, were deleted by CMP (Code Making Panel)-17 from the 2023 edition of the NEC.

What is its effect on the industry

The deletion of these sections does not compromise safety, as the material is already covered in product standards or other general requirements in the NEC. This change allows installers and AHJs to easily confirm listing and use nameplate ratings to verify installation requirements.

Article 422.16

[B][2] Built-in Dishwashers and Trash Compactors

Summary of Change

CMP (Code Making Panel)-17 added provisions in Section 422.16(B)(2) requiring supply cords for trash compactors and dishwashers to pass through items, such as wood cabinets, with protections that have smoothed edges.

What is its effect on the industry

While the previous text allowed for other approved means to protect cords, this revision removes the need for a judgment call when an obvious solution exists. This should clarify potential issues between the installer and the inspector when they arise in the field.

Article 422.18

Ceiling-Suspended (Paddle) Fans

Summary of Change

CMP (Code Making Panel)-17 has subdivided the text covering ceiling-suspended (paddle) fans and introduced a new first-level subdivision (B), which prohibits metal parts of ceiling fans from areas above tub and shower spaces. This prohibited “zone” corresponds with the prohibited zone described in Section 410.10(D) for luminaires.

What is its effect on the industry

Many electrical professionals were likely already applying the requirement in Section 410.10(D) to ceiling fans. This change enhances usability by explicitly including text that provides equivalent safety for installations with similar risks.

Article 424.10

General

Summary of Change

Section 424.10, Special Permission, was deleted by CMP (Code Making Panel)-17, and Section 424.9, General, was relocated to 424.10 at the beginning of Article 424, Part II.

What is its effect on the industry

While the provision for the use of special permission was removed from Article 424, AHJs can utilize Section 90.4 for approving equivalent installations where special permission is needed. This change will enhance the clarity and usability of the Code.

Article 424.48

Installation of Cables in Walls

Summary of Change

CMP (Code Making Panel)-17 created a new section, 424.28, which allows heating cables to be installed in walls with specific protections and limitations. This provision will take effect on January 1, 2026.

What is its effect on the industry

This change gives equipment manufacturers, standards developers, and certification agencies the opportunity to develop products and address interoperability issues before the effective date.

Article 424.93

[C] Installation of Heating Panels in Walls

Summary of Change

This new first-level subdivision created by CMP (Code Making Panel)-17 will allow heating panels and heating panel sets to be installed in walls with specific protection and limitations. The provision includes a January 1, 2026, effective date.

What is its effect on the industry

This change allows equipment manufacturers, standards developers, and certification agencies time to develop products and address interoperability issues before the effective date.

Article 425.10

General

Summary of Change

Section 425.10, which covered special permission requirements, was deleted by CMP (Code Making Panel)-17. Section 425.8, General, was relocated to 425.10 at the beginning of Article 425, Part II.

What is its effect on the industry

While the provision for the use of special permission was removed from Article 425, AHJs can utilize Section 90.4 to approve equivalent installations where special permission is needed.

Article 426.14

Fixed Outdoor Electric Deicing and Snow-Melting Equipment

Summary of Change

Section 426.14, which pertained to special permission for fixed outdoor electric deicing and snow-melting equipment, was deleted by CMP (Code Making Panel)-17.

What is its effect on the industry

While the provision for the use of special permission was removed from Article 426, AHJs can utilize Section 90.4 to approve equivalent installations where special permission is needed.

Article 426.28

Fixed Outdoor Electric Deicing and Snow-Melting Equipment

Summary of Change

CMP (Code Making Panel)-17 acknowledges that manufacturers of fixed outdoor electric deicing and snow-melting equipment now have the option to require ground-fault protection with reduced current and time threshold values, providing a higher degree of protection than previously required. As a result, Section 426.28 was revised to allow manufacturers to specify the ground fault trip level.

What is its effect on the industry

While NEC 110.3(B) is not new, this change clearly demonstrates its application by allowing utilization equipment manufacturers to include “additional” protection for the equipment. Designers, installers, and AHJs must review installation instructions prior to installation to ensure compliance.

Article 427.35

Line Frequency Induction Heating Equipment

Summary of Change

CMP (Code Making Panel)-17 deleted Section 427.35, which covered the installation of line frequency induction heating equipment and accessories for pipelines and vessels.

What is its effect on the industry

Removing the scope requirements in Section 427.35 will increase usability and reduce confusion for electrical professionals. This specialized heating equipment will continue to be covered by this article.

Article 430.1

Motor Circuits

Summary of Change

The previous figure in Section 430.1 has been deleted, and CMP (Code Making Panel)-11 has added an expanded figure to include all relevant parts of the motor circuit and specify which parts of Article 430 apply.

What is its effect on the industry

This change offers more comprehensive details for motors and their control devices. Electrical professionals will benefit from increased clarity and guidance on the various requirements that apply to this equipment.

Article 430.2

Reconditioned Motors

Summary of Change

CMP (Code Making Panel)-11 added new guidance for the reconditioning of motors in Section 430.2, including an informational note that references ANSI/EASA AR100-2020, Recommended Practice for the Repair of Rotating Electrical Apparatus.

What is its effect on the industry

Most electrical professionals are aware that motors are being reconditioned and safely placed back into service. The NEC now includes language that provides guidance and acceptance for this practice.

Article 440.8

Mini-Split Heating and Cooling Systems

Summary of Change

CMP (Code Making Panel)-11 has added new language to Section 440.8, specifying that mini-split units are not to be installed in a tub or shower zone.

What is its effect on the industry

This added language clarifies for installers and inspectors that mini-split systems are not permitted in a tub or shower zone.

Article 440.11

Disconnects with Covers

Summary of Change

CMP (Code Making Panel)-11 added additional language in Section 440.11 requiring that disconnects with covers exposing live parts must be locked for protection.

What is its effect on the industry

This added language provides an extra level of protection for the public and electrical professionals concerning disconnects without internal covers to protect live parts. Exposure of these live parts to unqualified individuals could result in injury or death.

Article 440.14

Air-Conditioning and Refrigerating Equipment

Summary of Change

CMP (Code Making Panel)-11 added a reference to Section 110.26(A) in Section 440.14, clarifying that working space clearances are required for air-conditioning and refrigerating equipment.

What is its effect on the industry

This added information clarifies for inspectors and installers that minimum clearances must be maintained at air-conditioning and refrigerating disconnects.

Article 445.18[A] & 445.19

Disconnecting Means & Emergency Shutdown of Prime Mover

Summary of Change

CMP (Code Making Panel)-13 has added new language to (A), allowing the disconnecting means to be located within the generator behind a hinged cover, door, or enclosure panel. When the generator disconnecting means is located inside the generator, a field-applied label must be provided to indicate the location of the disconnecting means.

What is its effect on the industry

There has been confusion among electrical professionals regarding the requirements for generator disconnecting means and emergency shutdown of the prime mover. These revisions clarify the requirements and improve the usability of the Code. This will help installers and AHJs better understand these requirements.

Article 450.2

Interconnection of Transformers

Summary of Change

CMP (Code Making Panel)-9 has added new guidance for transformer interconnection and operation requirements within Article 450.

What is its effect on the industry

This change is not expected to have a significant impact on electrical professionals. It primarily addresses NEC Style Manual concerns and corrects issues from the 1987 code cycle.

Article 470.2

Reconditioned Equipment

Summary of Change

CMP (Code Making Panel)-11 has introduced a new Section 470.2 as a placeholder for reconditioned equipment, specifying that reconditioning of a resistor is not permitted and that reactors must follow manufacturers' guidelines.

What is its effect on the industry

This change will provide clear information to all electrical professionals regarding the reconditioning allowances for resistors and reactors.

Article 495

Equipment Over 1000 Volts AC, 1500 Volts DC, Nominal

Summary of Change

All the requirements previously found in Article 490, Equipment Over 1000 Volts, Nominal, have been moved to Article 495 by CMP (Code Making Panel)-9.

What is its effect on the industry

CMP (Code Making Panel)-9 has established a "starting point" location for other code-making panels to consider relocating their requirements pertaining to Equipment Over 1000 Volts AC or 1500 Volts DC, Nominal. This change will make it easier to use the Code when searching for requirements on this topic.