



## North Central Texas Council of Governments

### Recommended Amendments to the 2023 National Electrical Code North Central Texas Council of Governments

The following articles, paragraphs, and sentences of the *2023 National Electrical Code (NEC)* are hereby amended as follows: Standard type is text from the NEC. Highlighted with gray shading is text inserted. Lined through type is deleted text from NEC. A double asterisk (\*\*) at the beginning of an article identifies an amendment carried over from the 2020 edition of the code and a triple asterisk (\*\*\*) identifies a new or revised amendment with the 2023 code.

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**\*\*\*Article 100; add the following to definitions:**

Engineering Supervision. Supervision by a Qualified State of Texas Licensed Professional Engineer engaged primarily in the design or maintenance of electrical installations **as referenced by TBPELS 137.59 (a)(b) as acceptable by the AHJ**

*(REASON FOR CHANGE: To better define the qualifications for engineering supervision. This term is used twenty-nine times in the 2023 National Electrical Code.)*

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**\*\*Article 110.2; change the following to read as follows:**

**110.2 Approval.** The conductors and equipment required or permitted by this Code shall be acceptable only if approved. Approval of equipment may be evident by listing and labeling of equipment by a Nationally Recognized Testing Lab (NRTL) with a certification mark of that laboratory or a qualified third party inspection agency or a field evaluation by a Field Evaluation Body accredited by either the International Code Council International Accreditation Service AC354 or ANSI National Accreditation Board programs and approved by the AHJ.

*Exception: Unlisted equipment that is relocated to another location within a jurisdiction or is field modified is subject to the approval by the AHJ. This approval may be by a field evaluation by a NRTL or qualified third-party inspection agency or a field evaluation by a Field Evaluation Body accredited by either the ICC IAS AC354 or ANAB programs and approved by the AHJ*  
~~Manufacturer's self-certification of any equipment shall not be used as a basis for approval by the AHJ.~~

Informational Note No. 1: See 90.7, Examination of Equipment for Safety, and 110.3, Examination, Identification, Installation, and Use of Equipment. See definitions of *Approved*, *Identified*, *Labeled*, and *Listed*.

Informational Note No. 2: Manufacturer's self-certification of equipment may not necessarily comply with U.S. product safety standards as certified by an NRTL.

Informational Note No. 3: National Fire Protection Association (NFPA) 790 and 791 provide an example of an approved method for qualifying a third-party inspection agency.

*(REASON FOR CHANGE: To add clarity and provide more positive options for enforcement and approval of unlisted equipment.)*

\*\*\***Article 110.12 B; add the following to:**

**(B) Integrity of Electrical Equipment and Connections.**

Internal parts of electrical equipment, including busbars, wiring terminals, insulators, and other surfaces, shall not be damaged or contaminated by foreign materials such as paint, plaster, cleaners, abrasives, corrosive residues or influences, fire, products of combustion, or water. There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken; bent; cut; or deteriorated by corrosion, chemical action, or overheating. Except where prohibited elsewhere in this Code, equipment shall be specifically evaluated by its manufacturer or a qualified testing laboratory prior to being returned to service.

*(REASON FOR CHANGE: To better define a Plan of Action for equipment that is compromised prior to restoring to service)*

\*\***Article 210.8 A 1 Bathrooms Exception; change the following to read as follows:**

**(A) Dwelling Units.**

All 125-volt through 250-volt receptacles installed in the following locations and supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel:

**(1) Bathrooms**

*Exception No. 4: Factory-installed receptacles that are not readily accessible and are mounted internally to bathroom exhaust fan assemblies shall not require GFCI protection unless required by the installation instructions or listing.*

*(Reason for the change: to cover all locations that exhaust fans could installed)*

**\*\*Article 210.52 C 1 Countertop and Work Surfaces Exception; change the following to read as follows:**

**C) Countertops and Work Surfaces.**

In kitchens, pantries, breakfast rooms, dining rooms, and similar areas of dwelling units, receptacle outlets for countertop and work surfaces that are 300 mm (12 in.) or wider shall be installed in accordance with 210.52(C)(1) through (C)(3) and shall not be considered as the receptacle outlets required by 210.52(A).

For the purposes of this section, where using multioutlet assemblies, each 300 mm (12 in.) of multioutlet assembly containing two or more receptacles installed in individual or continuous lengths shall be considered to be one receptacle outlet.

**(1) Wall Spaces.**

Receptacle outlets shall be installed so that no point along the wall line is more than 600 mm (24 in.) measured horizontally from a receptacle outlet in that space. The location of the receptacles shall be in accordance with 210.52(C)(3).

*Exception No. 1: Receptacle outlets shall not be required directly behind a range, counter-mounted cooking unit, or sink in the installation described in Figure 210.52(C)(1).*

~~*Exception No. 2: Where a required receptacle outlet cannot be installed in the wall areas shown in Figure 210.52(C)(1), the receptacle outlet shall be permitted to be installed as close as practicable to the countertop area to be served. The total number of receptacle outlets serving the countertop shall not be less than the number needed to satisfy 210.52(C)(1). These outlets shall be located in accordance with 210.52(C)(3).*~~

(Reason for the change: Elimination of receptacles in an area with a concept window wall configuration over the countertop is not the only option as there are devices available for a compliant installation)

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**\*\*Article 210.52 C 2 Island and Peninsular Countertops and Work Surfaces: Change the following to read as follows:**

Receptacle outlets, if installed to serve an island or peninsular countertop or work surface, shall be installed in accordance with 210.52(C)(3). If a receptacle outlet is not provided to serve an island or peninsular countertop or work surface, provisions shall be provided at the island or

peninsula for a chapter 3 wiring method shall be installed and supplied from a Small Appliance Branch Circuit to a Listed Outlet Box in the Peninsular or Island Cabinet at an Accessible Location, for future addition of a receptacle outlet to serve the island or peninsular countertop or work surface.

(Reason for the change: to clarify what the provisions are for positive options for enforcement and approval)

**\*\*Article 210.63 B 1 Equipment Requiring Servicing.; change the following to read as follows:**

**(B) Other Electrical Equipment.**

In other than one- and two-family dwellings, a receptacle outlet shall be located as specified in **210.63(B)(1)** and (B)(2).

**(1) Indoor Service Equipment.**

The required receptacle outlet shall be located within the same room or area as the service equipment.

**(2) Indoor Equipment Requiring Dedicated Equipment Spaces.**

Where equipment, other than service equipment, requires dedicated equipment space as specified in **110.26(E)**, the required receptacle outlet shall be located within the same room or area as the electrical equipment and shall not be connected to the load side of the equipment's disconnecting means.

(Reason for the change: to clarify that this is not any practical method for enforcement)

**\*\*\* New Article 220.7 Load Calculation; add the following:**

A load calculation shall be provided upon request when modifications to the electrical installation occurs.

(Reason for the change: to provide sufficient information as to the adequacy of existing conditions for the modifications proposed and substantiating the capacity of Power Production Systems used for Optional Standby/ Backup Use)

**\*\*\*Article 230.85 C Emergency Disconnects: Change the following to read as follows:**

For one- and two-family dwelling units, an emergency disconnecting means shall be installed.

**(C) Replacement.**

Where service equipment is replaced, all of the requirements of this section shall apply.

*Exception: Where a pre-existing installation is Code Compliant with 230.70 A, only meter sockets, service entrance conductors, or related raceways and fittings are replaced, the requirements of this section shall not apply.*

(Reason for the change: to clarify that there are pre-existing that were approved but were not Code Compliant and when modified shall comply with Code)

**\*\*\*Article 408.4 Descriptions ~~Field Identification~~ Required: Change the following to read as follows**

**(A) Circuit Directory or Circuit Description.**

Every circuit and circuit modification shall be provided with a legible and permanent description that complies with all of the following conditions as applicable:

- (1) Located at each switch or circuit breaker in a switchboard or switchgear
- (2) Included in a circuit directory that is located on the face of, inside of, or in an approved location adjacent and permanently affixed to the panel door in the case of a panelboard
- (3) Clear, evident, and specific to the purpose or use of each circuit including spare positions with an unused overcurrent device
- (4) Described with a degree of detail and clarity that is unlikely to result in confusion between circuits
- (5) Not dependent on transient conditions of occupancy
- (6) Clear in explaining abbreviations and symbols when used

*(REASON FOR CHANGE: To add clarity and provide more positive options for enforcement and approval)*

**\*\*Article 410.118: Change the following to read as follows**

**410.118 Access to other boxes.**

Luminaires recessed in the ceilings, floors, or walls shall not be used to access outlet, pull, or junction boxes or conduit bodies, unless the box or conduit body is an integral part of the listed luminaire.

Exception: removable luminaires with a minimum measurement of 22 in. X 22 in. shall be permitted to be used as access to outlet, pull, junction boxes or conduit bodies.

(REASON FOR CHANGE: To add clarity and provide more positive options for enforcement and approval. This will allow access to boxes not integral with the luminaire. This measurement aligns with the limited access above a lay-in ceiling measurement in 110.26(A)(4).  
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**\*\*Article 422.31 B: Change the following to read as follows**

#### **422.31 B Appliances Rated over 300 Volt-Amperes**

(B) Appliances Rated over 300 Volt-Amperes. For permanently connected appliances rated over 300 volt-amperes, the branch-circuit switch or circuit breaker shall be permitted to serve as the disconnecting means where the switch or circuit breaker is within sight from and is readily accessible to the appliance it serves or is capable of being locked in the open position in accordance with 110.25 and is readily accessible to the appliance it serves.

Informational Note No. 1: For appliances employing unit switches, see 422.34.

Informational Note No 2: The following means of access are considered to constitute readily accessible for this code change when conforming to the additional access requirements of the I Codes:

- (1) A permanent stair.
- (2) A pull-down stair with a minimum 300 lb. (136 kg) capacity.
- (3) An access door from an upper floor level.

REASON FOR CHANGE: To add clarity and provide more positive options for enforcement and approval)

**\*\*\*Article 500.8 (A) (3); change to read as follows:**

#### **500.8 Equipment.**

Articles 500 through 504 require equipment construction and installation that ensure safe performance under conditions of proper use and maintenance.

Informational Note No. 1: It is important that inspection authorities and users exercise more than ordinary care with regard to installation and maintenance.

Informational Note No. 2: Since there is no consistent relationship between explosion properties and ignition temperature, the two are independent requirements.

Informational Note No. 3: Low ambient conditions require special consideration. Explosion proof or dust-ignition proof equipment may not be suitable for use at temperatures lower than -25°C (-13°F) unless they are identified for low-temperature service. However, at low ambient temperatures, flammable concentrations of vapors may not exist in a location classified as Class I, Division 1 at normal ambient temperature.

**(A) Suitability.** Suitability of identified equipment shall be determined by one of the following:

- (1) Equipment listing or labeling;
- (2) Evidence of equipment evaluation from a qualified testing laboratory or inspection agency concerned with product evaluation; or,
- (3) By Special Permission Only, Evidence acceptable to the authority having jurisdiction such as a manufacturer's self-evaluation *accompanied by* or an owner's engineering judgment an engineering judgment signed and sealed Under Supervision by a Qualified State of Texas Licensed Professional Engineer engaged primarily in the design or maintenance of electrical installations as referenced by TBPELS 137.59 (a)(b) as acceptable by the AHJ.

Informational Note: Additional documentation for equipment may include certificates demonstrating compliance with applicable equipment standards, indicating special conditions of use, and other pertinent information.

(REASON FOR CHANGE: It was revised to reflect new language and rearrangement of that section)

**\*\*\*Article 505.7 and 505.7 (A); change to read as follows:**

#### **505.7 Special Precaution.**

~~Article 505~~ This article requires equipment construction and installation that ensures safe performance under conditions of proper use and maintenance.

Informational Note No. 1: It is important that inspection authorities and users exercise more than ordinary care ~~with regard~~ to regarding the installation and maintenance of electrical equipment in hazardous (classified) locations.

Informational Note No. 2: ~~Low ambient conditions require special consideration.~~ Electrical equipment ~~depending~~ that is dependent on the protection ~~techniques described~~ technique permitted by 505.8(A) may not be suitable for use at temperatures lower than -20°C (-4°F) unless they are identified for use at lower temperatures. ~~However,~~ Low ambient conditions require special consideration. At low ambient temperatures, flammable concentrations of vapors ~~may~~ might not exist in a location classified Class I, Zones 0, 1, or 2 at normal ambient temperature.

- (A)** Implementation of Zone Classification System. Classification of areas, engineering and design, selection of equipment and wiring methods, installation, and inspection shall be performed ~~By Special Permission Only,~~ under Supervision by a Qualified State of Texas Licensed Professional Engineer engaged primarily in the design or maintenance of electrical installations as referenced by TBPELS 137.59 (a)(b) as acceptable by the AHJ.

- (B)** GO TO TBPE LAW FOR THE DEFINITION OF AN ENGINEER  
<https://pels.texas.gov/>



(REASON FOR CHANGE: Carryover from previous amendment with change to better define the qualifications for an engineering judgement. Code revision language included.)

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**\*\*Article 695.6 A 1: Change the following to read as follows:**

**695.6 (A) Supply Conductors.**

**(1) Services and On-Site Power Production Facilities.**

Service conductors and conductors supplied by on-site power production facilities shall be physically routed outside a building(s) and shall be installed as service-entrance conductors in accordance with 230.6, 230.9, and Parts III and IV of Article 230. Where supply conductors cannot be physically routed outside of buildings, the conductors shall be permitted to be routed through the building(s) where installed in accordance with 230.6(1) or (2).

~~Exception: The supply conductors within the fire pump room shall not be required to meet 230.6 (1) or (2)~~

(REASON FOR CHANGE: To add clarity and provide more positive options for enforcement and approval. All Fire Pump rooms are not Fire Rated as on all 4 sides. There are Fault Currents that could exceed 150,000-190,000 amps and protection of these Service Conductors is essential and conflict with other codes, specifically 230.70(A)(1).)

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**\*\*\*Article 690.9 D: Change the following to read as follows:**

**690.9(D) Transformers.** Overcurrent protection for power transformers shall be installed in accordance with 705.30(F).

~~Exception: A power transformer with a current rating on the side connected toward the interactive inverter output, not less than the rated continuous output current of the inverter, shall be permitted without overcurrent protection from the inverter.~~

(REASON FOR CHANGE: is that this removes the requirements for 240.21(C) for transformer secondaries when the inverters 125% output is smaller than the transformers rating..)

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**\*\*\*Article 705.8 System Installation: Change the following to read as follows:**

**705.8 System Installation.** Installation of one or more electrical power production sources operating in parallel with a primary source(s) of electricity shall be performed only by qualified persons. During the installation there shall be on site one of the following:

(1) A person holding a Master Electrician License issued by the Texas Department of Licensing and Regulation.



(2)A person holding a Journeyman Electrician License issued by the Texas Department of Licensing and Regulation.

~~(3) A person holding a Residential Wireman License issued by the Texas Department of Licensing and Regulation. Additionally this person must have formal training in interconnected electric power production sources. This training must be approved by the AHJ.~~

(REASON FOR CHANGE: These are specialized systems as evidenced by the Code, which contain installation requirements from chapter 6,Special Equipment and chapter 7 Special Conditions)

### **705.80 Power Source Capacity.**

For interconnected power production sources that operate in island mode, capacity shall be calculated using the sum of all power source output maximum currents for the connected power production source. Solar photovoltaic (PV) and wind systems shall not be included in the sum capacity.

(REASON FOR CHANGE: to keep unreliable production sources out of the calculation as 705 creates conflictions with all standby systems.)

**\*\*\*Article 710.15 A: Change the following to read as follows**

### **710.15 General**

#### **710.15(A) Supply Output.**

~~Power supply to premises wiring systems fed by stand-alone or isolated microgrid power sources shall be permitted to have less capacity than the calculated load. The capacity of the sum of all sources of the stand-alone supply shall be equal to or greater than the load posed by the largest single utilization equipment connected to the system. Calculated general lighting loads shall not be considered as a single load have adequate capacity to meet the calculated load in accordance with Article 220.~~

Informational Note: ~~For general-use loads the system capacity can be calculated using the sum of the capacity of the firm sources, such as generators and ESS inverters. For specialty loads intended to be powered directly from a variable source, the capacity can be calculated using the sum of the variable sources, such as PV or wind inverters, or the combined capacity of both firm and variable sources.~~

*(REASON FOR CHANGE: The Scope of the Article has been, clarified and the amendment is no longer necessary.)*

**END**