

OKLAHOMA UNIFORM BUILDING CODE COMMISSION

RULES

Title 748 - Oklahoma Uniform Building Code Commission Chapter 20 - Adopted Codes - Subchapters 9 and 10

National Electrical Code®, 2017 Edition (NEC®, 2017) 748:20-9-1 through 748:20-10-15

NOTICES:

1. Section headers within this document marked "Revoked" do not revoke the current chapter in the 2017 Edition of the National Electrical Code® (NEC®, 2017), associated with this revocation language. This language simply means the modifications made in a previous adoption have been "revoked" and the language reverts to the published content of the currently adopted code without amendment.
2. Section headers within this document marked "Reserved" does not omit the chapter in the 2018 Edition of the International Building Code® (IBC® 2018), associated with this reserved language. This language simply means no modifications were made to the Chapter in the current adoption of the IBC® 2018 and the Chapter stands, as published, as part of the statewide minimum code - the section title is merely a space holder for future rulemaking modifications, if needed.
3. The rules of the Oklahoma Uniform Building Code found on this website are **unofficial**. The official rules are published in The Oklahoma Administrative Code and The Oklahoma Register, as required by 75 O.S. § 250 et seq. To order an official copy of these rules, contact the Office of Administrative Rules at: (405) 521-4911.

CHAPTER 20. ADOPTED CODES

SUBCHAPTER 9. NEC® 2014

748:20-9-1. Adoption of National Electrical Code® [AMENDED AND RENUMBERED TO 748:20-10-1]

[Source: Added at 29 Ok Reg 1659, eff 11-1-12; Amended at 32 Ok Reg 2270, eff 11-1-15; Amended at 34 Ok Reg 2107, eff 9-15-17; Amended and renumbered to 748:20-10-1 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-2. Effect of Adoption [AMENDED AND RENUMBERED TO 748:20-10-2]

[Source: Added at 29 Ok Reg 1659, eff 11-1-12; Amended at 32 Ok Reg 2270, Eff 11-1-15; Amended and renumbered to 748:20-10-2 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-3. NEC® [AMENDED AND RENUMBERED TO 748:20-10-3]

[Source: Added at 29 Ok Reg 1659, eff 11-1-12; Amended at 32 Ok Reg 2270, eff 11-1-15; Amended and renumbered to 748:20-10-3 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-4. NEC® [AMENDED AND RENUMBERED TO 748:20-10-4]

[Source: Added at 29 Ok Reg 1659, eff 11-1-12; Amended at 32 Ok Reg 2270, eff 11-1-15; Amended and renumbered to 748:20-10-4 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-5. Participation in Federal Programs and/or Federally Funded or Financed Projects [AMENDED AND RENUMBERED TO 748:20-10-5]

[Source: Added at 29 Ok Reg 1659, eff 11-1-12; Amended at 32 Ok Reg 2270, eff 11-1-15; Amended and renumbered to 748:20-10-5 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-6. NEC® [AMENDED AND RENUMBERED TO 748:20-10-6]

[Source: Added at 29 Ok Reg 1659, eff 11-1-12; Amended at 32 Ok Reg 2270, eff 11-1-15; Amended and renumbered to 748:20-10-6 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-6.1. NEC® [AMENDED AND RENUMBERED TO 748:20-10-7]

[Source: Added at 32 Ok Reg 2270, eff 11-1-15; Amended and renumbered to 748:20-10-7 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-6.2. NEC® [AMENDED AND RENUMBERED TO 748:20-10-8]

[Source: Added at 32 Ok Reg 2270, eff 11-1-15; Amended and renumbered to 748:20-10-8 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-7. NEC® [AMENDED AND RENUMBERED TO 748:20-10-11]

[Source: Added at 29 Ok Reg 1659, eff 11-1-12, Amended at 32 Ok Reg 2270, eff 11-1-15; Amended at 33 Ok Reg 1852, eff 11-1-16, Amended at 34 Ok Reg 2107, eff 9-15-17; Amended and renumbered to 748:20-10-11 at 38 Ok Reg 2693, eff 9-14-21]

748:20-9-8. NEC® [AMENDED AND RENUMBERED 748:20-10-12]

[Source: Added at 32 Ok Reg 2270, eff 11-1-15; Amended and renumbered to 748:20-10-12 at 38 Ok Reg 2693, eff 9-14-21]

SUBCHAPTER 10. NEC® 2017

748:20-10-1. Adoption of the National Electrical Code®, 2017 Edition (NEC® 2017)

(a) The Oklahoma Uniform Building Code Commission (the "OUBCC") hereby adopts the National Electrical Code®, 2017 Edition - NFPA 70® (NEC® 2017), as amended and modified in this subchapter as the statewide minimum code for commercial electrical construction in the State of Oklahoma pursuant to 59 O.S. § 1000.23.

(b) The OUBCC through formal action expressly chose to adopt the NEC® 2017 as amended and modified in this subchapter as the statewide minimum code for commercial electrical construction in the State of Oklahoma.

(c) The OUBCC has pulled from the National Fire Protection Association (NFPA) website, published errata and Temporary Interim Amendments (TIA's) to the NEC® 2017 through July 31, 2019. Any errata or TIA's published after that date have not been reviewed or incorporated into these rules.

(d) This material contains information which is proprietary to and copyrighted by the National Fire Protection Association. The acronym "NFPA" and the NFPA logo are trademarks and service marks of NFPA. ALL RIGHTS RESERVED.

[Source: Amended and renumbered from 748:20-9-1 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-2. Effect of adoption

The NEC® 2017 as amended and revised by these rules, is hereby established and adopted as the statewide minimum code for commercial electrical construction in Oklahoma pursuant to 59 O.S. § 1000.23, and may only be amended or altered by other jurisdictions pursuant to Oklahoma law and the administrative rules of the OUBCC as set forth in Title 748, Chapter 15 of the Oklahoma Administrative Code.

[Source: Amended and renumbered from 748:20-9-2 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-3. NEC® 2017 Informative Annexes

(a) None of the informative annexes of the NEC® 2017 have been adopted by the OUBCC for inclusion in the statewide minimum code for commercial electrical construction in the State of Oklahoma.

(b) Informative Annexes A through J are not adopted as the statewide minimum code for commercial electrical construction within the State of Oklahoma. However, other jurisdictions within the State of Oklahoma may adopt any or all of said annexes in accordance with 59 O.S. § 1000.29.

(c) Issuance of annual permits. Annual permit requirements are located in Informative annex H, Section 80.19 (D) and while the OUBCC is not adopting the informative annexes, issuance of annual permits has been authorized and the annual permits section modified to provide the following requirements:

(1) 80.19 (D) Annual permit. This section has been modified to clarify an annual permit is a yearly permit which represents a group of individual permits for each alteration to an already approved electric, gas, mechanical or plumbing installation. This section has been modified to read: 80.19(D) Annual permit. An annual permit is a yearly permit which represents a group of individual permits for each alteration to an already approved electrical, gas, mechanical or plumbing installation. The building official is authorized to issue an annual permit upon application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

(2) 80.19 (D)(1) Annual permit records. This section has been added to require the building official to collect the OUBCC permit fee for each individual permit that is part of the annual permit at the completion of the annual permit term. This section has been added to read: 80.19 (D)(1)Annual permit records. The person to whom an annual permit is issued shall keep a detailed record of alterations made under such annual permit. The building official shall have access to such detailed records of alterations at all times. At the completion of the entity's annual permit term, the applicant shall file such detailed records of alterations with the building official. Pursuant to the authority of 59 O.S. § 1000.25, the building official shall collect fees for each individual permit which is part of the annual permit once the detailed records are submitted and remit such fees to the OUBCC.

[Source: Amended and renumbered from 748:20-9-3 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-4. NEC® 2017 Provisions Adopted and Modified

All chapters and provisions within chapters, including exceptions, of the NEC® 2017 not specifically addressed within these rules as being modified, deleted, moved or removed are hereby adopted without modification as the statewide minimum code for commercial electrical construction

within the State of Oklahoma pursuant to 59 O.S. § 1000.23. Chapters and provisions within chapters, including exceptions adopted with modifications are specifically addressed in these rules.
[Source: Amended and renumbered from 748:20-9-4 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-5. Participation in Federal programs and/or Federally funded or financed projects

In order to maximize federal financial aid, assistance, participation, financing and/or funding in any public project(s) and/or federal financial aid, participation, funding for and participation in any federal program(s) by the State of Oklahoma, its agencies, public trusts and instrumentalities, or by any Oklahoma municipalities and other political subdivisions, that receive financial aid, assistance, participation, financing and/or funding for and participate in any federal program(s), the State of Oklahoma, its agencies and instrumentalities, and any Oklahoma municipalities and other political subdivisions, may cooperate with the United States Government and any agency or instrumentality thereof, in the manner authorized and provided by federal law and regulation and in doing so may perform all necessary functions and take all necessary actions for accomplishing such federal purposes and programs, including but not limited to, following and/or complying with federal laws, regulations and/or requirements arising from or related to federal financial aid, assistance, participation, financing and/or funding, in the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, improvement, expansion, operation, maintenance, removal, and demolition of buildings and structures or any appurtenances attached to such buildings or structures, notwithstanding any provisions of any and all uniform building codes and standards adopted by the OUBCC to the contrary.

[Source: Amended and renumbered from 748:20-9-5 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-6. NEC® 2017 Article 90 Introduction

Article 90 of the Oklahoma adopted NEC® 2017, includes the following Preamble at the very beginning of the chapter:

- (1) Pursuant to 59 O.S. § 1000.23, the OUBCC has adopted the NEC® 2017 as amended and revised by the OUBCC, as the minimum code to be used by all entities for commercial electrical construction in jurisdictions throughout the State of Oklahoma. However, the OUBCC's adoption of Article 90 "Introduction" of the NEC ® 2017 is for continuity purposes and the OUBCC's adoption of Article 90 recognizes the methods of best practice in fully implementing the statewide minimum code for commercial electrical construction.
- (2) All provisions of the adopted NEC® 2017, including Article 90, as amended and revised by the OUBCC, are hereby established and adopted as the statewide minimum code for commercial electrical construction in Oklahoma pursuant to 59 O.S. § 1000.23, which may only be amended or altered pursuant to Oklahoma law and the administrative rules of the OUBCC as set forth in Title 748, Chapter 15 of the Oklahoma Administrative Code. However, the provisions of Article 90 adopted herein are only intended to be in force and effect to the extent that the respective provisions do not conflict with State law or the lawful exercise of code administration and enforcement jurisdiction by entities empowered to do so pursuant to applicable law.
- (3) The OUBCC's adoption of Article 90 in this manner is made with the recognition that the legal authority granting state and local code administration and enforcement jurisdictions the power and discretion to administer and enforce codes arises from Oklahoma laws governing those jurisdictions. Furthermore, the OUBCC also recognizes that many state and local code administration and enforcement jurisdictions have already created, or have the lawful authority to create, departments, offices and administrative policies pursuant to various applicable laws and other adopted model codes with "Introduction" provisions similar to Article 90 of the adopted NEC® 2017.

(4) This limited adoption of Article 90 is made in recognition of the authority and discretion possessed by jurisdictions to administer and enforce building codes. Exercising such authority and jurisdiction in a manner inconsistent with Article 90 must be supported by Oklahoma law. Code administration and enforcement jurisdictions shall not use the OUBCC's limited adoption of Article 90 to circumvent the remainder of the requirements established by the Oklahoma adopted NEC® 2017 and the OUBCC will strongly oppose any such practice.

[Source: Amended and renumbered from 748:20-9-6 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-7. NEC® 2017 Chapter 1 General

Chapter 1 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) Article 100 Definitions. This section has been modified to include a definition of a nationally recognized testing laboratory and a definition of a plaque. This section has been modified to read:

(A) Nationally Recognized Testing Laboratory. A testing facility given this designation from the United States Occupational Safety and Health Administration (OSHA) that provides product safety testing and certification services to manufacturers.

(B) Plaque. A flat, thin piece of metal, wood, or non-conductive, UV, rain, corrosion, and ice resistant material with a sustainable temperature rating from negative 20 degrees Fahrenheit to 130 degrees Fahrenheit or better. For the ambient temperature of the environment to which it is installed, with engraved writing on it that is used especially as a reminder or warning of something. A plaque shall be designed to be installed by adhesive means or mechanical fasteners, as determined by the environment where to be permanently installed. A plaque shall also be known as a Permanent Plaque, Directory, or substitute for a label, excluding circuit directories.

(2) Section 110.12 (B) Integrity of Electrical Equipment and Connections. This section has been modified to allow for the reuse of existing electrical equipment, rather than requiring new replacements when certain conditions are met. This section has been modified to read: 110.12 (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, or corrosive residues. 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. Damaged materials, equipment, appliances, and devices shall not be reused unless such elements have been reconditioned, tested, and placed in good and proper working condition and approved by a nationally recognized testing laboratory, or by the manufacturer of the equipment. Electrical equipment damaged by natural or man-made events shall be reused only as recommended by the manufacturer of such equipment.

[Source: Amended and renumbered from 748:20-9-6.1 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-8. NEC® 2017 Chapter 2 Wiring and Protection

Chapter 2 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) Section 210.12 Arc-Fault Circuit-Interrupter Protection. This section has been modified to address errata published by NFPA® which adds a section reference "(D)" to the section. This section has been modified to read: 210.12 Arc-Fault Circuit-Interrupter Protection. Arc-fault circuit-interrupter protection shall be provided as required in 210.12(A), (B), (C), and (D). The arc-fault circuit-interrupter shall be installed in a readily accessible location.

(2) Section 220.12 Lighting Load for Specified Occupancies. This section was modified to address a TIA published by NFPA®. The change modifies the second exception to delete incorrect calculation formulas. This section has been modified to read: 220.12 Lighting Load for Specified Occupancies. A unit load of not less than that specified in Table 220.12 for occupancies

specified shall constitute the minimum lighting load. The floor area for each floor shall be calculated from the outside dimensions of the building, dwelling unit, or other area involved. For dwelling units, the calculated floor area shall not include open porches, garages, or unused or unfinished spaces not adaptable for future use. Exceptions:

(A) Exception No 1: Where the building is designed and constructed to comply with an energy code adopted by the local authority, the lighting load shall be permitted to be calculated at the values specified in the energy code where the following conditions are met:

(i) A power monitoring system is installed that will provide continuous information regarding the total general lighting load of the building.

(ii) The power monitoring system will be set with alarm values to alert the building owner or manager if the lighting load exceeds the values set by the energy code.

(iii) The demand factors specified in 220.42 are not applied to the general lighting load.

(B) Exception No. 2: Where a building is designed and constructed to comply with an energy code adopted by the local authority and specifying an overall lighting density of less than 13.5 volt-amperes/square meters (1.2 volt-amperes/square feet), the unit lighting loads in Table 220.12 for office and bank areas within the building shall be permitted to be reduced by 11 volt-amperes/square meters (1 volt-ampere/square foot).

(3) Section 230.67 Electric Utility Meter Enclosure. This section has been added to clarify installation specifications for outdoor electric utility meter enclosures for structures intended for use as a single-family dwelling to a maximum of a four-family dwelling. This section has been added to read: 230.67 Electric Utility Meter Enclosure.

(A) Electric utility meter enclosures for structures intended for use as a single-family dwelling to a maximum of a four-family dwelling shall be installed in accordance with the following:

Outdoor Utility Meter Enclosures

(i) A meter enclosure installed outdoors shall be securely mounted to the exterior of a building or other structure such as a pole or metal rack. The meter enclosure shall be installed in a readily accessible location.

(ii) The meter enclosure shall not be placed where it is prone or likely subjected to physical damage, vibration, excessive dust, vapors, or corrosive conditions.

(iii) The meter enclosure shall be installed not more than five and one-half (5 1/2) feet or less than two and one-half (2 1/2) feet above finished grade measured to the horizontal centerline of the meter socket. Working clearances for the meter enclosure shall be maintained in accordance with 110.26(A).

(iv) Electric utility meter enclosures shall not be installed on the inside of a structure, or within walls, locked gates or other obstructions that limit ready access to the equipment.

(v) The provisions of 90.2 concerning metering equipment shall not apply.

(vi) The electric utility meter enclosure installed outdoors shall not be placed or located within or in the immediate vicinity of the proper enclosure of a dangerous dog as defined in 4 O.S. § 44.

(B) Hazardous (Classified) Locations. Meter enclosures shall not be installed in a hazardous (classified) location.

[Source: Amended and renumbered from 748:20-9-6.2 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-9. NEC® 2017 Chapter 3 Wiring Methods and Materials

Chapter 3 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) Section 300.4 Protection Against Physical Damage. This section has been modified to address errata published by NFPA® to delete the informational note. This section has been modified to

read: 300.4 Protection Against Physical Damage. Where subject to physical damage, conductors, raceways, and cables shall be protected.

(2) Table 310.104(A) Conductor Applications and Insulations Rated 600 Volts. This table has been modified to address errata published by NFPA® in row 18, column 6, subcolumn 3. The table has been modified to read: Table 310.104(A) Conductor Applications and Insulations Rated 600 Volts. The title contains a superscript "1" at the end to indicate footnote 1 is applicable. The table contains 27 rows and 7 columns. Column 6 of the table contains three subcolumns. The modified table is described below:

(A) Row 1 contains the headers for the table and are listed below:

(i) Row 1, column 1 is entitled "Trade Name."

(ii) Row 1, column 2 is entitled "Type Letter."

(iii) Row 1, column 3 is entitled "Maximum Operating Temperature."

(iv) Row 1, column 4 is entitled "Application Provisions."

(v) Row 1, column 5 is entitled "Insulation."

(vi) Row 1, column 6 is entitled "Thickness of Insulation" and contains three subcolumns listed below:

(I) Row 1, column 6, subcolumn 1 is entitled "AWG or kcmil."

(II) Row 1, column 6, subcolumn 2 is entitled "mm."

(III) Row 1, column 6, subcolumn 3 is entitled "mils."

(vii) Row 1, column 7 is entitled "Outer Covering" with a subscript "2" at the end of the title indicating footnote #2 is applicable.

(B) Row 2 lists the trade name "Fluorinated ethylene propylene" in column 1. No changes have been made to this row.

(C) Row 3 lists the trade name "Mineral insulation (metal sheathed)" in column 1. No changes have been made to this row.

(D) Row 4 lists the trade name "Moisture-, heat-, and oil-resistant thermoplastic" in column 1. No changes have been made to this row.

(E) Row 5 lists the trade name "Paper" in column 1. No changes have been made to this row.

(F) Row 6 lists the trade name "Perfluoro-alkoxy" in column 1. No changes have been made to this row.

(G) Row 7 lists the trade name "Perfluoro-alkoxy" in column 1. No changes have been made to this row.

(H) Row 8 lists the trade name "Thermoset" in column 1. No changes have been made to this row.

(I) Row 9 lists the trade name "Moisture-resistant thermoset" in column 1. No changes have been made to this row.

(J) Row 10 lists the trade name "Silicone" in column 1. No changes have been made to this row.

(K) Row 11 lists the trade name "Thermoset" in column 1. No changes have been made to this row.

(L) Row 12 lists the trade name "Thermoplastic and fibrous outer braid" in column 1. No changes have been made to this row.

(M) Row 13 lists the trade name "Extended polytetra-fluoro-ethylene" in column 1. No changes have been made to this row.

(N) Row 14 lists the trade name "Heat-resistant thermoplastic" in column 1. No changes have been made to this row.

(O) Row 15 lists the trade name "Moisture- and heat-resistant thermoplastic" in column 1. No changes have been made to this row.

- (P) Row 16 lists the trade name "Moisture- and heat-resistant thermoplastic" in column 1. No changes have been made to this row.
- (Q) Row 17 lists the trade name "Moisture- and heat-resistant thermoplastic" in column 1. No changes have been made to this row.
- (R) Row 18 has been modified and is described below:
- (i) Column 1 lists the trade name "Moisture-resistant thermoplastic."
 - (ii) Column 2 lists the type letter "TW."
 - (iii) Column 3 lists the maximum operating temperature of "60 degrees Celsius (140 degrees Fahrenheit)."
 - (iv) Column 4 lists the Application Provisions "Dry and wet locations."
 - (v) Column 5 lists the Insulation "Flame-retardant, moisture-resistant thermoplastic."
 - (vi) Column 6 lists the Thickness of Insulation in each of the subrows as follows:
 - (I) Column 6, subrow 1 lists the AWG or kcmil "14-10, 8, 6-2, 1-4/0, 213-500, 501-1000, 1001-2000," respectively.
 - (II) Column 6, subrow 2 lists the mm "0.76, 1.14, 1.52, 2.03, 2.41, 2.79, 3.18," respectively.
 - (III) Column 6, subrow 3 lists the mils "30, 45, 60, 80, 95, 110, 125," respectively.
 - (vii) Column 7 lists the Outer Covering "None."
- (S) Row 19 lists the trade name "Underground feeder and branch-circuit cable - single conductor (for Type UF cable employing more than one conductor, see Article 340)" in column 1. No changes have been made to this row.
- (T) Row 20 lists the trade name "Underground service entrance cable - single conductor (for Type USE cable employing more than one conductor, see Article 338)" in column 1. No changes have been made to this row.
- (U) Row 21 lists the trade name "Thermoset" in column 1. No changes have been made to this row.
- (V) Row 22 lists the trade name "Thermoset" in column 1. No changes have been made to this row.
- (W) Row 23 lists the trade name "Moisture-resistant thermoset" in column 1. No changes have been made to this row.
- (X) Row 24 lists the trade name "Moisture-resistant thermoset" in column 1. No changes have been made to this row.
- (Y) Row 25 lists the trade name "Moisture-resistant thermoset" in column 1. No changes have been made to this row.
- (Z) Row 26 lists the trade name "Modified ethylene tetrafluoro-ethylene" in column 1. No changes have been made to this row.
- (AA) Row 27 lists the trade name "Modified ethylene tetrafluoro-ethylene" in column 1. No changes have been made to this row.

(BB) The table has seven footnotes. No changes have been made to the footnotes.

(3) Section 392.80(A)(1) Multiconductor Cables. This section has been modified to address errata published by the NFPA® to correct a section reference in the first subparagraph from "310.15(A)(3)(a)" to "310.15(B)(3)(a)." This section has been modified to read: 392.80(A)(1) Multiconductor Cables. The allowable ampacity of the multiconductor cables, nominally rated 2000 volts or less, installed according to the requirements of 392.22(A) shall be as given in Table 310.15(B)(16) and Table 310.15(B)(18), subject to the provisions of (A)(1)(a), (b), (c), and 310.15(A)(2).

(A) The adjustment factors of 310.15(B)(3)(a) shall apply only to multiconductor cables with more than three current-carrying conductors. Adjustment factors shall be limited to the

number of current-carrying conductors in the cable and not to the number of conductors in the cable tray.

(B) Where cable trays are continuously covered for more than 1.8 m (6 ft) with solid unventilated covers, not over 95 percent of the allowable ampacities of Table 310.15(B)(16) and Table 310.15(B)(18) shall be permitted for multiconductor cables.

(C) Where multiconductor cables are installed in a single layer in uncovered trays, with a maintained spacing of not less than one cable diameter between cables, the ampacity shall not exceed the allowable ambient temperature-corrected ampacities of multiconductor cables, with not more than three insulated conductors rated 0 through 2000 volts in free air, in accordance with 310.15(C).

[Source: Added at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-10. NEC® 2017 Chapter 4 Equipment for General Use

Chapter 4 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) Section 410.2 Definition. This section has been modified to add two definitions to the section:

(A) The definition of HORTICULTURAL LIGHTING EQUIPMENT has been added to clarify lighting equipment identified for horticultural use is to be designed to provide supplemental general illumination within the growing environment. This definition has been added to read: HORTICULTURAL LIGHTING EQUIPMENT. Lighting equipment identified for horticultural use is designed to provide a spectral characteristic needed for the growth of plants and can also provide supplemental general illumination within the growing environment.

(B) The definition of LUMINAIRE REMOTE POWER SOURCES has been added to clarify Luminaire remote power sources include LED Drivers, fluorescent ballasts or HID ballasts. This definition has been added to read: LUMINAIRE REMOTE POWER SOURCES.

Luminaire remote power sources include LED Drivers, fluorescent ballasts, or HID ballasts.

(2) Part XVI. Special Provisions for Horticultural Lighting Equipment. This part header has been added to Article 410 Luminaires, Lampholders, and Lamps to signify the start of a new section of code related to provisions needed for horticultural lighting equipment. This part heading has been added to read: Part XVI. Special Provisions for Horticultural Lighting Equipment

(3) Section 410.170 General. This section has been added to clarify luminaires complying with parts 1 through 7, 9, 10, 11 and 12 of this article shall be permitted to be used for horticultural lighting. It clarifies part 16 of the article shall apply to lighting equipment specifically identified for horticultural use. This section has been added to read: 410.170 General. Luminaires complying with Parts, I, II, III, IV, V, VI, VII, IX, X, XI, and XII of this article shall be permitted to be used for horticultural lighting. Part XVI shall additionally apply to lighting equipment specifically identified for horticultural use.

(4) Section 410.172 Listing. This section has been added to clarify lighting equipment identified for horticultural use is required to be listed. This section has been added to read: 410.172 Listing. Lighting equipment identified for horticultural use shall be listed.

(5) Section 410.174 Installation and use. This section has been added to clarify lighting equipment identified for horticultural use to be installed and used in accordance with the manufacturer's installation instructions and installation markings on the equipment as required by the listing. This section has been added to read: 410.174 Installation and use. Lighting equipment identified for horticultural use shall be installed and used in accordance with the manufacturer's installation instructions and installation markings on the equipment as required by that listing.

(6) Section 410.176 Locations not permitted. This section has been added to clarify the location and installation where lighting equipment identified for horticultural use is not permitted. This section has been added to read: 410.176 Locations not permitted.

(A) General Lighting. Lighting equipment identified for horticultural use shall not be installed as lighting for general illumination unless such use is indicated in the manufacturer's instructions.

(B) Installed Location. Lighting equipment identified for horticultural use shall not be installed where it is likely to be subject to physical damage or where concealed.

(7) Section 410.178 Flexible cord. This section has been added to clarify flexible cord will be permitted only when provided as part of a listed lighting equipment identified for horticultural use and identified for specific uses. This section has been added to read: 410.178 Flexible cord. Flexible cord shall only be permitted when provided as part of listed lighting equipment identified for horticultural use for any of the following uses:

(A) Connecting a horticultural lighting luminaire directly to a branch circuit outlet.

(B) Interconnecting horticultural lighting luminaires.

(C) Connecting a horticultural lighting luminaire to a remote power source.

(8) Section 410.180 Fittings and connectors. This section has been added to clarify fittings and connectors attached to flexible cords shall be provided as part of a listed horticultural lighting equipment device or system and installed in accordance with the instructions provided as part of the listing. This section has been added to read: 410.180 Fittings and connectors. Fittings and connectors attached to flexible cords shall be provided as part of a listed horticultural lighting equipment device or system and installed in accordance with the instructions provided as part of that listing.

(9) Section 410.182 Grounding. This section has been added to require lighting equipment identified for horticultural use to be grounded as required in Article 250 and Part V of this article. This section has been added to read: 410.182 Grounding. Lighting equipment identified for horticultural use shall be grounded as required in Article 250 and Part V of this article.

(10) Section 410.184 Ground-fault circuit-interrupter protection. This section has been added to clarify lighting equipment identified for horticultural use employing flexible cord(s) with one or more connectors to be supplied by lighting outlets with ground-fault circuit-interrupter protection. This section has been added to read: 410.184 Ground-fault circuit-interrupter protection. Lighting equipment identified for horticultural use employing flexible cord(s) with one or more connectors shall be supplied by lighting outlets with ground-fault circuit-interrupter protection.

(11) Section 410.186 Support. This section has been added to clarify special fittings identified for support of horticultural lighting equipment shall be designed specifically for the horticultural lighting equipment on which they are installed and shall be used in accordance with the installation instructions provided and shall be securely fastened. This section has been added to read: 410.186 Support. Special fittings identified for support of horticultural lighting equipment shall be designed specifically for the horticultural lighting equipment on which they are installed and shall be used in accordance with the installation instructions provided and shall be securely fastened.

(12) Section 410.188 Hazardous (classified) locations. This section has been added to clarify where horticultural lighting is installed in hazardous (classified) locations, the horticultural lighting equipment shall conform to Articles 500 through 517 in addition to this article. This section has been added to read: 410.188 Hazardous (classified) locations. Where installed in hazardous (classified) locations, horticultural lighting equipment shall conform to Articles 500 through 517 in addition to this article.

(13) Section 422.16(B)(5) Gas-fired central furnaces. This section has been added to allow flexible cord-and-plug connections in dwelling units as an alternative means of temporarily supplying the gas-fired furnace by a portable generator for heating purposes. This section has been added to read: 422.16(B)(5) Gas-fired central furnaces. Gas-fired furnaces supplying dwelling units shall be permitted to be connected by a flexible cord-and-plug. The cord and attachment plug shall have sufficient ampacity for the load, and shall be routed or otherwise protected to prevent physical damage to the cord or attachment plug.

(14) 424.99(B) Insulation. This section has been modified to address errata published by NFPA® to correct a section reference from "(C)(5)" to "(B)(6)." This section has been modified to read: 424.99(B) Insulation. Listed heating panels or panel sets, if installed under floor covering, shall be installed on floor surfaces that are smooth and flat in accordance with the manufacturer's instructions and shall also comply with 424.99(B)(1) through (B)(6).

(15) Section 430.97(C) Minimum Wire-Bending Space. This section has been modified to address errata published by NFPA® to correct a reference from "Article 312(D)" to "Article 312." This section has been modified to read: 430.97(C) Minimum Wire-Bending Space. The minimum wire-bending space at the motor control center terminals and minimum gutter space shall be as required in Article 312.

(16) Section 450.23(A) Indoor Installations. This section has been modified to address errata published by NFPA®. The correction moves the last two items out of the list of conditions in the first paragraph for Type I or Type II buildings, and makes each their own conditions for when indoor installations shall be permitted. The section has been modified to read: 450.23(A) Indoor Installations. Indoor installations shall be permitted in accordance with one of the following:

(A) In Type I or Type II buildings, in areas where all of the following requirements are met:

(i) The transformer is rated 35,000 volts or less.

(ii) No combustibile materials are stored.

(iii) A liquid confinement area is provided.

(iv) The installation complies with all the restrictions provided for in the listing of the liquid.

(B) With an automatic fire extinguishing system and a liquid confinement area, provided the transformer is rated 35,000 volts or less.

(C) In accordance with 450.26.

[Source: Added at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-11. NEC® 2017 Chapter 5 Special Occupancies

Chapter 5 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) Section 505.7 (A) Implementation of zone classification system. This section has been modified to require a registered professional engineer to engineer and design, and select the equipment and wiring methods for classification areas. It allows for the installation of the equipment, wiring methods and inspections to be performed by qualified persons. This section has been modified to read: 505.7 (A) Implementation of zone classification system. Classification of areas, engineering and design, selection of equipment and wiring methods shall be performed by a Registered Professional Engineer with expertise in Hazardous (Classified) Locations and Zone Systems. The installation of equipment and wiring methods, and inspections shall be performed by qualified persons.

(2) Section 505.9(E)(2) Equipment Provided with Threaded Entries for Metric Threaded Conduit or Fittings. This section has been modified to address a TIA published by the NFPA®. The change deletes Groups C, D, IIB, or IIA from requiring metric threaded fittings installed into explosionproof or flameproof equipment entries to have a class fit of at least 6g/6H and be made

up with at least five threads fully engaged; and deletes the language requiring "at not less than eight threads fully engaged and wrenchtight." This section has been modified to read: 505.9(E)(2) Equipment Provided with Threaded Entries for Metric Threaded Conduit or Fittings.

(A) For equipment with metric threaded entries, listed conduit fittings or listed cable fittings shall be used. Such entries shall be identified as being metric or listed adapters to permit connection to conduit or NPT threaded fittings shall be provided with the equipment and shall be used for connection to conduit or NPT traded fittings.

(B) Metric threaded fittings installed into explosionproof or flameproof equipment entries shall have a class of fit of at least 6g/6H and be made up with at least five threads fully engaged.

(3) Section 506.7 (A) Implementation of zone classification system. This section has been modified to require a registered professional engineer to engineer and design, and select the equipment and wiring methods for classification areas. It allows for the installation of the equipment, wiring methods and inspections to be performed by qualified persons. This section has been modified to read: 506.7 (A) Implementation of zone classification system. Classification of areas, engineering and design, selection of equipment and wiring methods, shall be performed by a Registered Professional Engineer with expertise in Hazardous (Classified) Locations and Zone Systems. The installation of equipment and wiring methods and inspection shall be performed by qualified persons.

(4) Section 511.2 Major Repair Garage. This section has been modified to include maintenance or repairs that require open-flame cutting or welding as part of the definition of a major repair garage. This section has been modified to read: 511.2 Major Repair Garage. A building or portions of a building where major repairs, such as engine overhauls, painting, body and fender work, maintenance or repairs that require open-flame cutting or welding, and repairs that require draining of the motor vehicle fuel tank are performed on motor vehicles, including associated floor space used for offices, parking, or showrooms [30A:3.3.12.1].

(5) Section 555.9 Electrical Connections. This section has been modified to limit access to luminaires or other electrical connections while standing in either a natural or man-made body of water by requiring luminaires or other electrical connections not intended for submerged application to be located at least 5 feet horizontally from the nearest normal edge of the water. This section has been modified to read: 555.9 Electrical Connections. Electrical connections shall be located at least 305 mm (12 in.) above the deck of a floating pier. Luminaires or other electrical connections shall be located at least 5 feet (1524 mm) horizontally from the nearest normal edge of the water not intended for a submerged application. Conductor splices, within approved junction boxes, utilizing sealed wire connector systems listed and identified for submersion shall be permitted where located above the waterline but below the electrical datum plane for floating piers. All electrical connections shall be located at least 305 millimeters (12 inches) above the deck of a fixed pier but not below the electrical datum plane.

(6) Section 590.4(G) Splices. This section has been modified to address a TIA published by NFPA® deleting the language "except where" in the first sentence and rewording the conditions as an exception to the section when installed on a construction site. This section has been modified to read: 590.4(G) Splices. A box, conduit body, or other enclosure, with a cover installed shall be required for all splices. Exception: On construction sites, a box, conduit body, or other enclosure shall not be required for either of the following conditions:

(A) The circuit conductors being spliced are all from nonmetallic multiconductor cord or cable assemblies, provided that the equipment grounding continuity is maintained with or without the box.

(B) The circuit conductors being spliced are all from metal sheathed cable assemblies terminated in listed fittings that mechanically secure the cable sheath to maintain effective electrical continuity.

[Source: Amended and renumbered from 748:20-9-7 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-12. NEC® 2017 Chapter 6 Special Equipment

Chapter 6 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) 625.17(B) Output Cable to the Electric Vehicle. This section has been modified to address a TIA published by NFPA®. The change breaks the section out and removes the electrical vehicle cable listed types into one item and adds a second item to require the output cable to be an integral part of listed electrical vehicle supply equipment. This section has been modified to read: 625.17(B) Output Cable to the Electric Vehicle. The output cable to the electric vehicle shall be one of the following:

(A) Listed Type EV, EVJ, EVE, EVJE, EVT or EVJT flexible cable as specified in Table 400.4.

(B) An integral part of listed electrical vehicle supply equipment.

(2) 625.44(A) Portable Equipment. This section has been modified to address a TIA published by NFPA®. The change adds two more methods for connecting portable equipment to the premises wiring. This section has been modified to read: 625.44(A) Portable Equipment. Portable equipment shall be connected to the premises wiring systems by one of the following methods:

(A) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated 125 volt, single phase 15 or 20 amperes.

(B) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 250 volt, single phase, 15 or 20 amperes.

(C) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 250 volts, single phase, 30 or 50 amperes.

(D) A nonlocking, 2-pole, 3-wire grounding-type receptacle outlet rated at 60 volts dc maximum, 15 or 20 amperes.

(3) The length of the power supply cord, if provided, between the receptacle outlet and the equipment shall be in accordance with 625.17(A)(5).

(4) Section 680.23 (A)(4) Voltage Limitations. This section has been modified to prohibit the use of underwater luminaires if they operate above the low voltage contact limit as defined in Section 680.2 and limit the use of luminaires or other electrical connections while standing in either a natural or man-made body of water. This section has been modified to read: 680.23 (A)(4) Voltage Limitations. No luminaires shall operate above the low voltage contact limit as defined in Section 680.2. This requirement shall apply to new installations, repair, replacement and modification of underwater luminaires. This section shall not apply to relamping if the line-voltage luminaire is protected by a Class A ground-fault circuit-interrupter.

(5) Section 682.10 Electrical Equipment and Transformers. This section has been modified to require luminaires or other electrical connections to be located at least 5 feet horizontally from the nearest normal edge of the water. This section has been modified to read: 682.10 Electrical Equipment and Transformers. Electrical equipment and transformers, including their enclosures, shall be specifically approved for the intended location. No portion of an enclosure for electrical equipment not identified for operation while submerged shall be located below the electrical datum plane. Luminaires or other electrical connections shall be located at least 5 feet (1524 mm) horizontally from the nearest edge of the water.

(6) Section 690.15 Disconnection of Photovoltaic Equipment. This section has been modified to address errata published by NFPA. The correction adds a comma between the words "converters"

and "inverters" in the first sentence of the paragraph. This section has been modified to read: 690.15 Disconnection of Photovoltaic Equipment. Isolating devices shall be provided to isolate PV modules, ac PV modules, fuses, dc-to-dc converters, inverters, and charge controllers from all conductors that are not solidly grounded. An equipment disconnecting means or a PV system disconnecting means shall be permitted in place of an isolating device. Where the maximum circuit current is greater than 30 amperes for the output circuit of a dc combiner or the input circuit of a charge controller or invert, an equipment disconnecting means shall be provided for isolation. Where a charge controller or inverter has multiple input circuits, a single equipment disconnecting means shall be permitted to isolate the equipment from the input circuits.

[Source: Amended and renumbered from 748:20-9-8 at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-13. NEC® 2017 Chapter 7 Special Conditions

Chapter 7 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) Section 700.16 Emergency Illumination. This section has been modified to add ballast and LED drivers to the list of any individual lighting elements, in the second paragraph, that are part of the emergency lighting system requirement to be installed so that failure of any of the individual element cannot leave any space that requires emergency illumination in total darkness. This section has been modified to read: 700.16 Emergency Illumination. Emergency illumination shall include means of egress lighting, illuminated exit signs, and all other luminaries specified as necessary to provide required illumination.

(2) Emergency lighting systems shall be designed and installed so that the failure of any individual lighting element, such as the failure of a lamp, ballast, or LED driver, cannot leave in total darkness any space that requires emergency illumination.

(3) Where high-intensity discharge lighting such as high- and low-pressure sodium, mercury vapor, and metal halide is used as the sole source of normal illumination, the emergency lighting systems shall be required to operate until normal illumination has been restored.

(4) Where an emergency system is installed, emergency illumination shall be provided in the area of the disconnecting means required by 225.31 and 230.70, as applicable, where the disconnecting means are installed indoors. Exception: Alternative means that ensure that the emergency lighting illumination level is maintained shall be permitted.

(5) Section 725.144(B) Use of Class 2-LP or Class 3-LP Cables to Transmit Power and Data.

This section has been modified to address a TIA published by NFPA®. The change adds language to specify the correction factors of 310.5(B)(2) shall apply for ambient temperatures above 30 degrees Celsius (86 degrees Fahrenheit). This section has been modified to read:

725.144(B) Use of Class 2-LP or Class 3-LP Cables to Transmit Power and Data. Types CL3P-LP, CL2P-LP, CL3R-LP, CL2R-LP, CL3LP, or CL2-LP shall be permitted to supply power to equipment at a current level up to the marked ampere limit located immediately following the suffix LP and shall be permitted to transmit data to the equipment. For ambient temperatures above 30 degrees Celsius (86 degrees Fahrenheit), the correction factors of 310.5(B)(2) shall apply. The Class 2-LP and Class 3-LP cables shall comply with the following as applicable:

(A) Cables with the suffix "-LP" shall be permitted to be installed in bundles, raceways, cable trays, communications raceways, and cable routing assemblies.

(B) Cables with the suffix "-LP" and marked ampere level shall follow the substitution hierarchy of Table 725.154 and Figure 725.154(A) for the cable type without the suffix "LP" and without the marked ampere level.

(C) System design shall be permitted by qualified persons under engineered supervision.

(6) Table 725.154 Applications of Listed Class 2, Class 3, CMUC, and PLTC cables in Buildings. This table has been modified to address errata published by NFPA®. The errata adds missing

horizontal lines between sections in the table. None of the content in the table itself has been modified. The table contains 5 rows and 2 columns. Some of the rows have subrows, the first column entitled "Applications" has two subcolumns, and the second column entitled "Cable Type" has 6 subcolumns. Horizontal lines have been added to the table in the following rows and columns:

(A) Row 2 entitled "In fabricated ducts as described in 300.22(B)." A horizontal line has been added in the first column entitled "Applications" in the second subcolumn and carries through the second column entitled "Cable Type" through all 6 subcolumns, to clarify the section has two subrows across all columns except the first subcolumn in the first column. The line splits the row into two subrows as described below:

(i) Row 2, subrow 1 is entitled "In fabricated ducts."

(ii) Row 2, subrow 2 is entitled "In metal raceway that complies with 300.22(B)."

(B) Row 5 entitled "Within buildings in other than air-handling spaces and risers." A horizontal line has been added in the second column entitled "Cable Type" in the sixth subcolumn to carry the subrow all the way across. The line splits between the two subrows as described below:

(i) Row 2, subrow 1 is entitled "General"

(ii) Row 2, subrow 2 is entitled "In one- and two-family dwellings."

(7) Table 760.154 Applications of Listed PLFA Cables in Buildings. This table has been modified to address errata published by NFPA®. The errata adds a missing vertical line between two columns in the table. None of the content of the table itself has been modified. The table contains 5 rows and 2 columns. Each row has subrows, column 1 entitled "Applications" has two subcolumns, and column 2 entitled "Cable Type" has three subcolumns. The vertical line has been added in the fourth row entitled "In risers," and in the first subrow entitled "In vertical runs," between the second and third subcolumns of the second column entitled "Cable Tray."

(8) Section 770.110(A)(2) Communication Raceways. This section has been modified to address a TIA published by the NFPA®. The change modifies the section reference for listing requirements from "800.113" to "800.182" and adds to the installation requirements a reference to section "800.113." This section has been modified to read: 770.110(A)(2) Communication Raceways. Optical fiber cables shall be permitted to be installed in plenum communication raceways, riser communication raceways selected in accordance with Table 800.154(b), listed in accordance with 800.182, and installed in accordance with 800.113 and 62.56, where the requirements applicable to electrical nonmetallic tubing (ENT) apply.

[Source: Added at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-14. NEC® 2017 Chapter 8 Communication Systems

Chapter 8 of the Oklahoma adopted NEC® 2017 is adopted with the following modifications:

(1) Section 840.3(G) Electrical Classification of Data Circuits and Cables. This section has been modified to correct errata published by NFPA®, changing a reference paragraph from "(c)" to (b)." The section has been modified to read: 840.3(G) Electrical Classification of Data Circuits and Cables. Sections 725.139(D)(1) and 800.133(A)(1)(b) shall apply to the electrical classification of Class 2 and Class 3 circuits in the same cable with communications circuits.

(2) Section 840.160 Power Circuits. This section has been modified to address a TIA published by NFPA®. The modification deletes a requirement for where the power supplied over a communications cable to communications equipment is greater than 60 watts, the communication cables and the power circuits are to comply with Section 725.144 when used in place of Class 2 and Class 3 cables. The modification adds a requirement for installations of listed communication cables to comply with 725.144 where listed communication cables are used in place of Class 2

and Class 3 cables and adds an exception for noncompliance with Section 725.144 for installations of listed 4-pair communications cables where the nominal current does not exceed 0.3 amperes in any conductor. This section has been modified to read: 840.160 Powering Circuits. Communications cables, in addition to carrying the communication circuit, shall also be permitted to carry circuits for powering communications equipment. Installations of listed communications cables shall comply with 725.144 where listed communications cables are used in place of Class 2 and Class 3 Cables. Exception: Compliance with 725.144 shall not be required for installations of listed 4-pair communications cables where the nominal current does not exceed 0.3 amperes in any conductor.

[Source: Added at 38 Ok Reg 2693, eff 9-14-21]

748:20-10-15. NEC® [RESERVED]

[Source: Reserved at 38 Ok Reg 2693, eff 9-14-21]