

Amendments and deletions to the 2017 Edition of the National Electrical Code

Section 1.01 Title

This ordinance shall be known as the “Arlington Electrical Code,” may be cited as such and will be referred to herein as “this Code.”

Section 1.02 Purpose

The purpose of this Code is to provide minimum standards to safeguard life, limb, health, property and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation, inspection, performance and maintenance of electrical equipment used for light, heat, power, radio, television, signaling and for other purposes.

Section 1.03 Scope

- A. **General**: The provisions of this Code apply to all installations of, and work done on, electrical conductors, fittings, devices, motors, appliances and fixtures, hereafter referred to as “electrical equipment”, in or on public and private buildings and premises.
- B. **Compliance**: On all installations of electrical equipment hereafter made, and on all existing installations which are altered, all work must be done in a manner that conforms to the requirements for sufficient and safe electrical systems as provided in this Code.
- C. **Public Utilities**: The provisions of this Code do not apply to installations used by electricity supply, electric railway or communication agencies in the generation, transmission, or distribution of electricity or for the operation of street railways, signals or the transmission of intelligence when located within or on public thoroughfares, buildings or premises used exclusively by an agency operating under a franchise agreement with the City and under the jurisdiction of the Director of Utilities.
- D. **Radio and Television Stations**: The provisions of this Code shall apply to all electrical equipment used for power supply to radio and television transmitting equipment, but shall not apply to other electrical equipment used for radio and television transmissions.

Section 1.04 Existing Equipment

- A. **Lawfully Installed**: Electrical equipment lawfully installed prior to the effective date of this Code may be continued in its existing use with maintenance and repair continued if the use, maintenance or repair is in accordance with the original design and location and is not a hazard to life, health or property, except where specifically required by the Code of the City of Arlington, Texas.

- B. Maintained: Electrical equipment, both existing and new, shall be maintained in a safe condition. The owner or his designated agent shall be responsible for the maintenance of electrical equipment.

Section 1.05 Other Laws and Ordinances

The provisions of this Code shall not waive or set aside any provisions of the City or laws of the State of Texas. To the extent of a conflict between the existing ordinances of the City and this Code, this Code prevails.

Section 1.06 Prima Facie Evidence of Safe Conditions

Conformity of electrical equipment and installations with provisions of this Code, the (NEC) National Electrical Code, and/or a (NRTL) Nationally Recognized Testing Laboratory shall be prima facie evidence that such equipment and installations are in safe condition.

Section 1.07 National Electrical Code

- A. Adoption: The National Electrical Code, 2017 Edition, as published by the National Fire Protection Association, referred to herein as “NEC”, a copy of which is filed in the office of the City Secretary of the City of Arlington, Texas, is hereby adopted and designated as the Electrical Code of the City of Arlington, the same as though such Code were copied at length herein, subject, however, to the deletions, amendments and addenda provided in Section 1.07(B) hereof.
- B. Additions, Amendments and Deletions: The National Electrical Code, as adopted in Section 1.07(A) hereof, is hereby modified by the following deletions, amendments and addendums. These additions, amendments and deletions shall have precedence in any case where they are in conflict with the National Electrical Code adopted in Section 1.07(A) above.
1. The amendment of Article 100, entitled **DEFINITIONS**, by adding 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.
 2. The amendment of Article 110.2, entitled **Approval**, 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 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 approved 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.

3. The amendment of Article 210.12 (A), entitled **Dwelling Units**, by the addition of Exception 2 to read as follows:

Exception No. 2: Arc-Fault Circuit-Interrupter type circuit breakers shall not be required when ALL of the following conditions are met:

- (1) *The existing panelboard and/or circuit breaker supplying outlets otherwise required to be protected by arc-fault circuit interrupters is being replaced,*
- (2) *The branch circuit feeding outlets required to be protected by arc-fault circuit interrupters is not being repaired, replaced, extended, or otherwise altered in any way, and*
 - a. *The dwelling unit was constructed prior to January 1, 2002; or,*
 - b. *A family room, dining room, living room, parlor, library, den, sunroom, recreation room, closet, hallway, or similar area was constructed prior to the date of adoption of the 2008 NEC.*

4. The amendment of Table 210.24, entitled **Summary of Branch-Circuit Requirements**, to read as follows:

Table 210.24 Summary of Branch-Circuit Requirements

Circuit Rating	15A	20A	30A	40A	50A
Conductors (min. size)					
Circuit wires ¹	12	12	10	8	6
Taps	12	12	12	12	12
Fixture wires & cords – see 240.5					
Overcurrent Protection	15 A	20 A	30 A	40 A	50A
Outlet devices:					
Lampholders Permitted	Any type	Any type	Heavy Duty	Heavy Duty	Heavy Duty
Receptacle Rating ²	15 max. A	15 or 20 A	30 A	40 or 50 A	50A
Maximum Load	15 A	20 A	30 A	40 A	50A
Permissible Load	See 210.23(A)	See 210.23(A)	See 210.23(B)	See 210.23(C)	See 210.23 (C)

¹ These gauges are for copper conductors

² For receptacle rating of cord-connected electric-discharge luminaires, see 410.30(C)

5. The amendment of Article 230.70(A)(1), entitled **Readily Accessible Location**, to read as follows:

The service disconnecting means shall be installed at a readily accessible location either outside of a building or structure or inside nearest the point of entrance of the service conductors. Three-phase services to non-residential occupancies shall have the disconnecting means located on the exterior of the building or structure when the metering equipment is located on the exterior of the building or structure.

6. The amendment of Article 230.71(A), entitled **General**, to add an Exception to read as follows:

Exception: Multi-occupant buildings. Individual service disconnecting means is limited to six for each occupant. The number of individual disconnects at one location may exceed six.

7. The amendment of Article 250.64, entitled **Grounding Electrode Conductor Installation**, to read as follows:

250.64 Grounding Electrode Conductor Installation. Grounding electrode conductors at the service, at each building or structure where

supplied by a feeder(s) or branch circuit(s), or at a separately derived system shall be installed as specified in 250.64(A) through (G).

8. The amendment of Article 250.64, entitled **Grounding Electrode Conductor Installation**, by the addition of subsection (G) to read as follows:

(G) **Single Point Grounding Electrode.** Multiple Occupancy buildings, other than Group R as defined in the building code, shall have an aluminum or copper busbar not less than 6mm X 50mm X 600mm (1/4 in. X 2 in. X 24 in.) installed in a lockable cabinet located at each service location. All available grounding electrodes as described in 250.52(A)(1) through (A)(7) shall be connected to this busbar. In no case shall the grounding electrode conductors serving this busbar be smaller than 3/0 AWG copper wire.

Exception #1 Where the electrode is a rod, pipe, or plate electrode, that portion of the bonding jumper that is the sole connection to the busbar shall not be smaller than 6 AWG copper wire.

Exception #2 Where the electrode is a concrete-encased electrode, that portion of the bonding jumper that is the sole connection to the busbar shall not be smaller than 4 AWG copper wire.

9. The amendment of Article 250.68(B), entitled **Effective Grounding Path**, by the addition of a second paragraph to read as follows:

The connection of the grounding electrode conductor or bonding jumper to a grounding electrode shall be made in a manner that will ensure a permanent and effective grounding path. Where necessary to ensure the grounding path for a metal piping system used as a grounding electrode, bonding shall be provided around insulated joints and around any equipment likely to be disconnected for repairs or replacement. Bonding jumpers shall be of sufficient length to permit removal of such equipment while retaining the integrity of the grounding path. An effective grounding path connection to building steel shall be made by exothermic welding (cad welding); or listed pressure connectors or listed lugs with bolted connection through drilled and thread tapped mounting hole(s) at an accessible point on a common structural building steel member.

10. The amendment of Table 310.106(A), entitled **Minimum Size of Conductors**, to read as follows:

Table 310.106(A) Minimum Size of Conductors¹

Conductor Voltage Rating (Volts)	Minimum Conductor Size (AWG)	
	Copper	Aluminum or Copper-Clad Aluminum
0-2000	12	1/0
2001-8000	8	1/0
8001-15,000	2	1/0
15,001-28,000	1	1/0
28,001-35,000	1/0	1/0

¹ *Exception: An equipment grounding conductor within a listed cable assembly.*

11. The amendment of Article 334.10(3) to read as follows:

(3) Other structures permitted to be of Types III, IV, and V construction except as prohibited in 334.12. Cables shall be concealed within walls, floors, or ceilings that provide a thermal barrier of material that has at least a 15-minute finish rating as identified in listings of fire-rated assemblies acceptable to the authority having jurisdiction

FPN No. 1: Types of building construction and occupancy classifications are defined in accordance with the Construction Chapter.

FPN No. 2: See Annex E for determination of building types [NFPA 220, Table 3-1]. Cross Reference all building types as indicated in Table E.3 with the Construction Chapter.

FPN No. 3: Listings of acceptable finish ratings are provided in the Construction Chapter.

12. The amendment of Article 334.12(A), entitled **Types NM, NMC, AND MNS**, by the addition of Item (11) to read as follows.

(11) Types NM, NMC, NMS cable shall not be permitted to be installed in any occupancy with metal frame stud structures.

13. The amendment of Article 500.8 (A) (3) 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) Evidence acceptable to the authority having jurisdiction such as a manufacturer's self-evaluation or an engineering judgment signed and sealed by a qualified licensed Professional Engineer in the State of Texas.

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

16. The amendment of Article 505.7 (A), entitled **Implementation of Zone Classification System**, to read as follows:

(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 a qualified licensed Professional Engineer in the State of Texas.