

NFPA 70™ – National Electrical Code® 2020 amendments

1) Amend Section 210.5(C)(1) as follows (EL-20-01-21):

210.5 Identification for Branch Circuits

(C) **Identification of Ungrounded Conductors** Ungrounded conductors shall be identified in accordance with 210(C) (1) or (2), as applicable

(1) **Branch Circuits Supplied from More Than One Nominal Voltage System.** Where the premises wiring system has branch circuits supplied by more than one nominal voltage system, each ungrounded conductor of a branch circuit shall be identified by ~~phase or line and~~ system at all termination, connection, and splice points in compliance with 210(5)(C)(1)(a) or (b)

(a) *Means of Identification* The means of identification shall be permitted to be by separate color coding, marking tape, tagging, or other approved means.

(b) *Posting of Identification Means* The method utilized for conductors originating within each branch circuit panelboard or similar branch-circuit distribution equipment shall be documented in a manner that is readily available or shall be permanently posted at each branch-circuit panelboard or similar branch-circuit distribution equipment. The label shall be of sufficient durability to withstand the environment involved and shall not be handwritten

2) Amend Section 210.8(A) as follows (EL-20-02-21):

210.8(A) Dwelling Units. All 125-volt, single phase 15 and 20 ampere ~~through 250-volt~~ receptacles installed in the locations specified in 210.8(A)(1) through (A)(~~11~~10) ~~and supplied by single phase branch circuits rated 150 volts or less to ground~~ shall have ground-fault circuit-interrupter protection for personnel.

(1) – (4) unchanged

(5) Unfinished basements
Exception unchanged

(6) – (10) unchanged

~~(11) Indoor Damp and Wet Locations~~

3) Amend Section 210.8(B) as follows (EL-20-03-21):

210.8(B) Other Than Dwelling Units. All 125-volt ~~through 250-volt~~ receptacles supplied by single-phase branch circuits ~~rated 150 volts or less to ground, 50~~ 20 amperes or less, ~~and all receptacles supplied by three phase branch circuits rated 150 volts or less to ground, 100 amperes or less,~~ installed in the locations specified in 210.8(B)(1) through (B)(12) shall have ground-fault circuit-interrupter protection or personnel.

(1) – (5) unchanged

(6) ~~Indoor damp and~~ wet locations

(7) – (12) unchanged

4) Delete Section 210.8(E) as follows (EL-20-04-21):

210.8 (E) Equipment Requiring Servicing. [Delete Section in its entirety] ~~GFCI protection shall be provided for the receptacles required by 210.63.~~

5) Delete Section 210.8(F) as follows (EL-20-05-21):

210.8(F) Outdoor Outlets. [Delete Section in its entirety] All outdoor outlets for dwellings, other than those covered in 210.8(A)(3), Exception to (3), that are supplied by single phase branch circuits rated 150 volts to ground or less, 50 amperes or less, shall have ground fault circuit interrupter protection for personnel.

6) Amend Section 210.12 as follows (EL-20-06-21):

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)~~ (C). The arc-fault circuit interrupter shall be installed in a readily accessible location.

Exception: Arc fault circuit interrupter protective devices required by 210.12(A), (B), and (C) shall be permitted to be removed and replaced with non-AFCI devices as permitted by RSA 155-A:3-c.

210.12(A) Dwelling Units. unchanged

210.12(B) Dormitory Units. All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets and devices installed in dormitory unit bedrooms, living rooms, hallways, closets, ~~bathrooms~~, and similar rooms shall be protected by any of the means described in 210.12(A)(1) through (6).

~~**210.12(C) Guest Rooms, Guest Suites, and Patient Sleeping Rooms in Nursing Homes and Limited-Care Facilities.** All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets and devices installed in guest rooms and guest suites of hotels and motels and patient sleeping rooms in nursing homes and limited-care facilities shall be protected by any of the means described in 210.12(A)(1) through (6).~~

~~**210.12(D) (C) Branch Circuit Extensions or Modifications — Dwelling Units, Dormitory Units, and Guest Rooms and Guest Suites.** Where branch circuit wiring for any of the areas specified in 210.12(A), (B), or (C) is modified, replaced, or extended, the branch circuit shall be protected by one of the following:~~

- (1) By any of the means described in 210.12(A)(1) through (A)(6)
- (2) A listed outlet branch-circuit-type AFCI located at the first receptacle outlet of the existing branch circuit

Exception: AFCI protection shall not be required where the extension of the existing branch circuit conductors is not more than 1.8 m (6 ft) and does not include any additional outlets or devices, other than splicing devices. This measurement shall not include the conductors inside an enclosure, cabinet, or junction box.

7) Amend Section 210.52(C) as follows (EL-20-07-21):

210.52 Dwelling Unit Receptacle Outlets

(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)(~~34~~) and shall not be considered as the receptacle outlets required by 210.52(A).

(1) For the purposes of this section, receptacles installed in accordance with 210.52(C)(1)(a) or (C)(1)(b) shall be considered as one receptacle outlet.

~~(a) where using multi-outlet assemblies, e~~ Each 300 mm (12 in.) of a multi-outlet assembly containing two or more receptacles installed in individual or continuous lengths ~~shall be considered to be one receptacle outlet.~~

(b) Each two receptacles installed in the same device box.

(+2) **Wall Spaces.** Receptacle outlets shall be located so there is no point along the wall line is more than 600 mm (24 in.) measured horizontally from a receptacle outlet in that space.

Exception: 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).

(23) **Island and Peninsula Countertops and Work Surfaces:** Receptacle outlets shall be installed in accordance with 210.52(C)(23)(a) and (C)(23)(b).

(a) **Locations With Countertop or Work Surface Wall Spaces.**

(1) At least one receptacle outlet shall be installed where the location is also provided with countertop or work surfaces totaling more than 1.2 linear meters (4 linear feet).

(b) Locations Without Countertop or Work Surface Wall Spaces. Receptacle outlets shall be installed in accordance with (1) or (2). Receptacle outlets shall be permitted to be located as determined by the installer, designer, or building owner.

(a1) At least one receptacle outlet shall be provided for the first 0.84 m² (9ft²), or fraction thereof, of the countertop or work surface. A receptacle outlet shall be provided for every additional 1.7 m² (18 ft²), or fraction thereof, the countertop or work surface.

(b2) At least one receptacle outlet shall be located within 600 mm (2 ft) of the outer end of a peninsular countertop or work surface. ~~Additional required receptacle outlets shall be permitted to be located as determined by the installer, designer, or building owner. The location of the receptacle outlets shall be in accordance with 210.52(C)(3).~~ A peninsula countertop is measured from the connected perpendicular wall.

(34) **Receptacle Outlet Location.** Receptacle outlets shall be located in one or more of the following:

(1) On or Above Countertop or Work Surfaces: On or above, but not more than 500 mm (20 in), above the countertop or work surfaces.

(2) In Countertop or Work Surfaces: Receptacle outlets assemblies listed for use in countertop or work surfaces shall be permitted in countertop or work surfaces.

(3) Below countertop or work surfaces: Not more than 300 mm (12 in) below the countertop or work surface. Receptacles installed below a countertop or work surface shall not be located where the countertop or work surface extends more than 150 mm (6 in.) beyond its support base.

Receptacle outlets rendered not readily accessible by appliances fastened in place, appliance garages, sinks, or rangetops as covered in 210.52(C)(1), Exception, or appliances occupying assigned space shall not be considered as these required outlets.

Informational Note No. 1: See 406.5(E) and 406.5(G) for installation of receptacles in countertops and 406.5(F) and 405.5(G) for installations of receptacles in work surfaces. See 380.10 for installations of multioutlet assemblies.

Informational Note No. 2: See Annex J and ANSI/ICC A117.1-2009, Standard on Accessible and Usable Buildings and Facilities.

8) Amend Section 210.63(B)(2) as follows (EL-20-08-21):

210.63(B)(2) Indoor Equipment Requiring Dedicated Equipment Spaces. ~~Where~~ For equipment, other than service equipment, ~~requires~~ requiring 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 branch circuit disconnecting means.~~

9) Delete Section 230.67 as follows (EL-20-09-21):

230.67 Surge Protection. [Delete Section in its entirety]

~~(A) Surge Protective Device.~~ All services supplying dwelling units shall be provided with a surge-protective device (SPD).

~~(B) Location.~~ The SPD shall be an integral part of the service equipment or shall be located immediately adjacent thereto.

Exception: The SPD shall not be required to be located in the service equipment as required in (B) if located at each next level distribution equipment downstream toward the load.

~~(C) Type.~~ The SPD shall be a Type 1 or Type 2 SPD.

~~(D) Replacement.~~ Where service equipment is replaced, all of the requirements of this section shall apply.

10) Amend Section 230.71(B) as follows (EL-20-10-21):

230.71 Maximum Number of Disconnects.

(B) Two to Six Service Disconnecting Means.

Two to six service disconnects shall be permitted for each service permitted by 230.2 or for each set of service entrance conductors permitted by 230.40, Exception No. 1, 3, 4, or 5. The two to six service disconnecting means shall be permitted to consist of a combination of any of the following:

- (1) Separate enclosures with a main service disconnecting means in each enclosure
- (2) Panelboards with a main service disconnecting means in each panelboard enclosure
- (3) Switchboard(s) where there is only one service disconnect in each separate vertical section where there are barriers separating each vertical section
- (4) Service disconnects in switchgear or metering centers where each disconnect is located in a separate compartment
- (5) Metering Centers with barriers as required in article 230.62(C)

11) Amend Section 250.140 as follows (EL-20-11-21):

250.140 Frames of Ranges and Clothes Dryers. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the circuit for these appliances shall be connected to the equipment grounding conductor in the manner specified by 250.134 or 250.138.

Exception No.1: For existing branch-circuit installations only where an equipment grounding conductor is not present in the outlet or junction box, the frames of electric ranges, wall-mounted ovens, counter mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the circuit for these appliances shall be permitted to be connected to the grounded circuit conductor if all the following conditions are met.

- (1) The supply circuit is 120/240-volt, single-phase, 3-wire; or 208Y/120-volt derived from a 3-phase, 4-wire, wye-connected system.
- (2) The grounded conductor is not smaller than 10 A WG copper or 8 A WG aluminum.
- (3) The grounded conductor is insulated, or the grounded conductor is uninsulated and part of a Type SE service-entrance cable and the branch circuit originates at the service equipment.
- (4) Grounding contacts of receptacles furnished as part of the equipment are bonded to the equipment.

Exception No. 2: For existing branch-circuit installations only where the equipment supplies a dwelling unit(s) and there is no equipment grounding conductor present in the outlet or junction box, the frames of the appliances specified in Exception No. 1 shall be permitted to be connected to the grounded conductor provided all the conditions specified in (1), (2) and (4) of Exception No. 1 are met, the grounded conductor of the circuit supplying the appliance(s} is part of a nonmetallic sheathed cable and it is insulated or covered within the supply enclosure so it does not make contact with any normally non-current-carrying metal parts.

12) Amend Section 314.27(C) as follows (EL-20-12-21):

314.27(C) Boxes at Ceiling-Suspended (Paddle) Fan Outlets.

Outlet boxes or outlet box systems used as the sole support of a ceiling-suspended (paddle) fan shall be listed, shall be marked by their manufacturer as suitable for this purpose, and shall not support ceiling-suspended (paddle) fans that weigh more than 32 kg (70 lb). For outlet boxes or outlet box systems designed to support ceiling-suspended (paddle) fans that weigh more than 16 kg (35 lb), the required marking shall include the maximum weight to be supported.

~~Outlet boxes mounted in the ceilings of habitable rooms of dwelling occupancies in a location acceptable for the installation of a ceiling-suspended (paddle) fan shall comply with one of the following:~~

- ~~(1) Listed for the sole support of ceiling-suspended (paddle) fans~~
- ~~(2) An outlet box complying with the applicable requirements of 314.27 and providing access to structural framing capable of supporting of a ceiling-suspended (paddle) fan bracket or equivalent~~
Where spare, separately switched, ungrounded conductors are provided to a ceiling-mounted outlet box, in a location acceptable for a ceiling-suspended (paddle) fan in one-family, two-family, or multifamily dwellings, the outlet box or outlet box system shall be listed for sole support of a ceiling suspended (paddle) fan.

13) Amend Section 334.10 as follows (EL-20-13-21):

334.10 Uses Permitted. Type NM, Type NMC, and Type NMS cables shall be permitted to be used in the following, except as prohibited in 334.12:

- (1) No change.
- (2) Multi-family dwellings permitted to be of Types III, IV, and V construction.
- (3) Other structures permitted to be of Types III, IV and V construction. Except as permitted by 334.10 (6), 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. **Exception to (2) and (3):** For buildings or structures required to be of Type I or Type II construction, Type NM, Type NMC, and Type NMS cables shall be permitted to be used, provided that where so applied in buildings or structures exceeding three stories above grade, circuits run In Type NM, NMC or NMS cable shall not leave the floor or dwelling unit from which the circuits originate
- (4) No change.
- (5) No change.
- (6) Exposed within:
 - a. dropped and suspended ceiling cavities.
 - b. accessible attics and roof spaces.
 - c. unfinished basements and crawl spaces.

Except as Permitted by 334.30 {B} (2) for connections to luminaires and equipment, cables shall be installed to closely follow the surface of framing members, running boards, or the equivalent.

14) Amend Section 334.12 as follows (EL-20-13-21):

334.12 Uses Not Permitted.

(A) Types NM, NMC, and NMS. Types NM, NMC, and NMS cables shall not be permitted as follows:

- (1) In any dwelling or structure not specifically permitted in 334.10(1), (2), (3) and (5)
- ~~(2) Exposed within a dropped or suspended ceiling cavity in other than one- and two-family and multifamily dwellings.~~
- ~~(3) As service-entrance cable.~~
- ~~(4) In commercial garages having hazardous (classified) locations as defined in 511.3.~~
- ~~(5) In theaters and similar locations, except where permitted in 518.4(8).~~
- ~~(6) In motion picture studios.~~
- ~~(7) In storage battery rooms.~~
- ~~(8) In hoistways or on elevators or escalators.~~
- ~~(9) Embedded In poured cement, concrete, or aggregate.~~
- ~~(10) In hazardous (classified) locations, except where specifically permitted by other articles in this Code.~~

15) Amend Section 334.30 as follows (EL-20-13-21):

334.30(B)(2) is not more than 1.4 m (4 ½ ft.) from the last point of cable support to the point of connection to a luminaire or other piece of electrical equipment and the cable and point of connection are within an accessible ceiling. ~~in one, two, or multifamily dwellings.~~

16) Amend Section 406.12 as follows (EL-20-14-21):

406.12 Tamper-Resistant Receptacles. All 15- and 20-ampere, 125- and 250-volt nonlocking-type receptacles in the areas specified in 406.12(1) through ~~(6)~~ (8) shall be listed tamper-resistant receptacles.

(1) – (5) unchanged

~~(6) Subset of assembly occupancies described in 518.2 to include places of awaiting transportation, gymnasiums, skating rinks, and auditoriums~~

~~(7)~~(6) Dormitory units

~~(8) Assisted living facilities~~

17) Amend Section 422.5(A) as follows (EL-20-15-21):

422.5 Ground-Fault Circuit-Interrupter (GFCI) Protection for Personnel.

(A) **General.** Appliances identified in 422(A)(1) through (A)(7) rated 150 volts or less to ground and ~~60~~ 20 amperes or less, single ~~or 3-~~ phase, shall be provided with Class A GFCI protection for personnel. Multiple Class A GFCI protective devices shall be permitted but shall not be required.

18) Amend Section 422.16(B)(2) as follows (EL-20-16-21):

422.16(B)(2) Built-in Dishwashers and Trash Compactors.

Built-in dishwashers and trash compactors shall be permitted to be cord-and-plug-connected with a flexible cord identified as suitable for the purpose in the installation instructions of the appliance manufacturer where all of the following conditions are met:

(1) For a trash compactor, the length of the cord shall be 0.9 m to 1.2 m (3 ft to 4 ft) measured from the face of the attachment plug to the plane of the rear of the appliance.

(2) For a built-in dishwasher, the length of the cord shall be 0.9 m to 2.0 m (3 ft to 6.5 ft) measured from the face of the attachment plug to the plane of the rear of the appliance.

(3) Receptacles shall be located to protect against physical damage to the flexible cord.

(4) The receptacle for a trash compactor shall be located in the space occupied by the appliance or adjacent thereto.

(5) The receptacle for a built-in dishwasher shall be located in the space adjacent to the space occupied by the dishwasher.

~~Where the flexible cord passes through an opening, it shall be protected against damage by a bushing, grommet, or other approved means.~~

(6) The receptacle shall be accessible.

(7) The flexible cord shall have an equipment grounding conductor and be terminated with a grounding-type attachment plug.

Exception: A listed appliance distinctly marked to identify it as protected by a system of double insulation shall not be required to be terminated with a grounding-type attachment plug

19) Amend Section 440.14 as follows (EL-20-17-21):

440.14 Location. Disconnecting means shall be located within sight from, and readily accessible from the air-conditioning or refrigerating equipment. The disconnecting means shall be permitted to be installed on or within the air-conditioning or refrigerating equipment.

The disconnecting means shall not be located on panels that are designed to allow access to the air-conditioning or refrigeration equipment or to obscure the equipment nameplate(s).

Exception No. 1: Where the disconnecting means provided in accordance with 430.102(A) is lockable in accordance with 110.25 and the refrigerating or air-conditioning equipment is essential to an industrial process in a facility with written safety procedures, and where the conditions of maintenance and supervision ensure that only qualified persons service the equipment, a disconnecting means within sight from the equipment shall not be required.

Exception No. 2: Where an attachment plug and receptacle serve as the disconnecting means in accordance with 440.13, their location shall be accessible but shall not be required to be readily accessible

Exception no. 3: The disconnect for an indoor unit of a ductless mini-split system shall not be required if the disconnect for the outdoor condensing unit that feeds the indoor unit is lockable in the open position in accordance with 110.25.

20) Amend Section 450.9 as follows (EL-20-18-21):

450.9 Ventilation. The ventilation shall dispose of the transformer full-load heat losses without creating a temperature rise that is in excess of the transformer rating.

Informational Note No. 1: See IEEE C57.12.00-2015, *General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers*, and IEEE C57.12.01-2015, *General Requirements for Dry-Type Distribution and Power Transformers*.

Informational Note No. 2: Additional losses occur in some transformers where nonsinusoidal currents are present, resulting in increased heat in the transformer above its rating. See IEEE C57.110-2008, *Recommended Practice for Establishing Liquid-Filled and Dry-Type Power and Distribution Transformer Capability When Supplying Nonsinusoidal Load Currents*, where transformers are utilized with nonlinear loads.

Transformers with ventilating openings shall be installed so that the ventilating openings are not blocked by walls or other obstructions. The required clearances shall be clearly marked on the transformer. ~~Transformer top surfaces that are horizontal and readily accessible shall be marked to prohibit storage.~~

21) Delete Section 680.4 as follows (EL-20-19-21):

680.4 Inspections After Installation. [Delete Section in its entirety]

~~The authority having jurisdiction shall be permitted to require periodic inspection and testing.~~

End of NFPA 70™ – National Electrical Code® 2020 amendments