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WORKING DRAFT OF NEC CODE-MAKING PANEL 7 MEETING OUTPUT

CONTENT NOT FINAL – SUBJECT TO REVISION PRIOR TO LETTER BALLOT AND PUBLICATION OF SECOND DRAFT REPORT

Document: National Electrical Code®

Revision Cycle: A2025

Meeting Date: October 2024

Panel Activity: Comment Stage

This is a working draft, prepared by NFPA staff, to record the output generated at the Code-Making Panel 7 Second Draft Meeting. It includes draft copies of the Second Revisions and any Global Revisions.

It is being made available to Panel members for the purpose of facilitating early review, particularly for those Panel members who may be seeking input from their respective organizations in preparation for the Second Draft Ballot.

Second Revision No. 8247-NFPA 70-2024 [Global Comment]

[Create two new sections 551.2 and 552.2]
Listing Requirements.
All electrical materials, devices, appliances, fittings, and other equipment shall be listed and labeled.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 12:58:07 EDT 2024

Committee Statement

Committee Statement: All electrical materials, devices, appliances, fittings, and other equipment must be listed and labeled. This moves the listing requirements to XXX.2 section in compliance with the NEC Style Manual.

Response Message: SR-8247-NFPA 70-2024

Public Comment No. 589-NFPA 70-2024 [Article 552]

Second Revision No. 8255-NFPA 70-2024 [Global Comment]

See attached document for Article 550 reorganization and added PC's.

Supplemental Information

File Name	Description	Approved
SR_8255_Article_550.docx	attachment for SR 8255.	

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 13:58:54 EDT 2024

Committee Statement

Committee Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Response Message: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Public Comment No. 564-NFPA 70-2024 [Section No. 550.32(B)]

Public Comment No. 562-NFPA 70-2024 [Section No. 550.13(B)]

Public Comment No. 1724-NFPA 70-2024 [Article 550]

Public Comment No. 588-NFPA 70-2024 [Section No. 550.1]

Public Comment No. 561-NFPA 70-2024 [Section No. 550.10]

Public Comment No. 563-NFPA 70-2024 [Section No. 550.32]

Public Comment No. 560-NFPA 70-2024 [Article 550]

[I was told by the TC that the Article 550 references are correct at shown in this document. They already corrected them to incorporate any moves. Do not convert this to 1st edition references. Other references are supposed to be correct to the first draft.]

Part I. General

550.1 Scope.
This article covers electrical conductors and equipment installed within or on mobile and manufactured homes, ~~the~~ conductors that connect mobile and manufactured homes to a supply of electricity, and ~~the~~ installation of electrical wiring, luminaires, equipment, and appurtenances related to electrical installations within a mobile home park up to the mobile home service-entrance conductors or, if none, the mobile home service equipment.

Informational Note: See 24 CFR 3280, *Manufactured Home Construction and Safety Standards*, of the Federal Department of Housing and Urban Development for additional information on manufactured housing.

550.2 Listing Requirements.

All electrical materials, devices, appliances, fittings, and other equipment shall be listed and labeled ~~by a qualified testing agency and be connected in an approved manner when installed~~.

550.4 General Requirements.

550.4(A) In Other Than Mobile Home Parks.
Mobile homes installed in other than mobile home parks shall comply with the ~~provisions~~ requirements of this article.

550.4(B) Connection to Wiring System.
This article shall apply to mobile homes intended for connection to a wiring system rated 120/240 volts, nominal, 3-wire ac, with a grounded neutral conductor.

Part II. Mobile and Manufactured Homes

550.10 Power Supply.

550.10(A) Feeder.
The power supply to the mobile home shall ~~be a feeder assembly~~ consist~~ing~~ of not more than one listed 50-ampere mobile home feeder assembly ~~power-supply cord~~ or a permanently installed feeder.

Exception No. 1: A mobile home that is factory equipped with gas or oil-fired central heating equipment and cooking appliances shall be permitted to be provided with a listed mobile home power-supply cord rated 40 amperes.

Exception No. 2: A feeder assembly shall not be required for manufactured homes constructed in accordance with 550.52(B).

550.10(B) Feeder Assembly ~~Power-Supply Cord~~.
A feeder assembly ~~If the~~ serving a mobile home ~~has a power-supply cord, it~~ shall be permanently attached to the panelboard's enclosure, or to a junction box permanently connected to the panelboard, with the free end terminating in an attachment plug cap.

Cords with adapters and pigtail ends, extension cords, and similar items shall not be attached to, or shipped with, a mobile home.

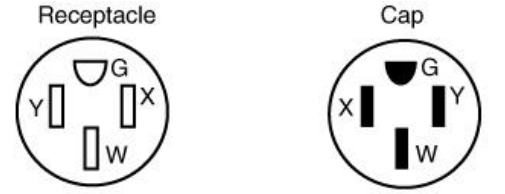
A suitable clamp or the equivalent shall be provided at the panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the feeder assembly ~~power-supply cord~~ is handled in its intended manner.

The feeder assembly ~~Cord~~ shall be a listed type with four conductors, one of which shall be identified by a continuous green color or a continuous green color with one or more yellow stripes for use as the equipment grounding conductor.

550.10(C) Attachment Plug Cap.
The attachment plug cap shall be a 3-pole, 4-wire, grounding type, rated 50 amperes, 125/250 volts with a configuration as shown in Figure 550.10(C) and intended for use with the 50-ampere, 125/250-volt receptacle configuration shown in Figure 550.10(C). ~~It shall be listed, by itself or as part of a power-supply cord~~ It ~~assembly, for the purpose and~~ shall be molded to or installed on the flexible cord so that it is secured tightly to the cord at the point where the cord enters the attachment plug cap. If a right-angle cap is used, the configuration shall be oriented so that the grounding member is farthest from the cord.

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

Figure 550.10(C) 50-Ampere, 125/250-Volt Receptacle and Attachment Plug Cap Configurations, 3-Pole, 4-Wire, Grounding-Types, Used for Feeder Assemblies for a Mobile Home ~~Supply Cords~~ and Mobile Home Parks.



125/250-V, 50-A, 3-pole, 4-wire, grounding type

550.10(D) Overall Length of a Feeder Assembly~~Power-Supply Cord~~.
The overall length of the feeder assembly ~~a power-supply cord~~, measured from the end of the cord, including bared leads, to the face of the attachment plug cap shall not be less than 6.4 m (21 ft) and shall not exceed 11 m (36½ ft). The length of the cord from the face of the attachment plug cap to the point where the cord enters the mobile home shall not be less than 6.0 m (20 ft).

550.10(E) Marking.
The feeder assembly ~~power-supply cord~~ shall bear the following marking:

FOR USE WITH MOBILE HOMES — 40 AMPERES

or

FOR USE WITH MOBILE HOMES — 50 AMPERES

550.10(F) Point of Entrance.
The point of entrance of the feeder assembly to the mobile home shall be in the exterior wall, floor, or roof.

550.10(G) Protected.
Where the cord passes through walls or floors, it shall be protected by means of conduits and bushings or equivalent. The cord shall be permitted to be installed within the mobile home walls, provided a continuous raceway having a maximum size of 32 mm (1¼ in.) is installed from the branch-circuit panelboard to the underside of the mobile home floor.

550.10(H) Protection Against Corrosion and Mechanical Damage.
Permanent provisions shall be made for the protection of the attachment plug cap of the feeder assembly~~power-supply cord~~ and any connector cord assembly or receptacle against corrosion and mechanical damage if such devices are in an exterior location while the mobile home is in transit.

550.10(I) Mast Weatherhead or Raceway.

Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of either of the following:

(1) One mast weatherhead installation, installed in accordance with ~~Part II of~~ Article 230, Part II, containing four continuous, insulated, color-coded feeder conductors, one of which shall be an equipment grounding conductor

(2) Raceways from the disconnecting means in the mobile home to the underside of the mobile home, with provisions for attachment to a suitable junction box or fitting to the raceway on the underside of the mobile home [with or without conductors as in 550.10(I)(1)] which shall be one of the following:

1. Rigid metal conduit
2. Intermediate metal conduit
3. Rigid polyvinyl chloride conduit
4. Other raceways identified for the location

The manufacturer shall provide written installation instructions stating the proper feeder conductor sizes for the raceway and the size of the junction box to be used.

550.11 Disconnecting Means and Branch-Circuit Protective Equipment.
The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a panelboard. If a fused panelboard is used, the maximum fuse size for the mains shall be plainly marked with lettering at least 6 mm (¼ in.) high and visible when fuses are changed.

Where plug fuses and fuseholders are used, they shall be tamper-resistant Type S, enclosed in dead-front fuse panelboards. Electrical panelboards containing circuit breakers shall also be dead-front type.

Informational Note: See 110.22 ~~concerning~~ for identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated and the type marking needed.

550.11(A) Disconnecting Means.
A single disconnecting means shall be provided in each mobile home consisting of a circuit breaker, or a switch and fuses and its accessories. The disconnecting means shall be installed in a readily accessible location near the point of entrance of the feeder assembly ~~supply cord~~ or conductors into the mobile home. The main circuit breakers or fuses shall be plainly marked “Main.” This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding, with sufficient terminals for all grounding conductors. The terminations of the grounded circuit conductors shall be insulated in accordance with 550.18~~16~~(A). The disconnecting equipment shall have a rating not less than the calculated load. The distribution equipment, either circuit breaker or fused type, shall be located a minimum of 600 mm (24 in.) from the bottom of such equipment to the floor level of the mobile home.

Informational Note: See 550.16~~20~~(A~~B~~) for ~~information on~~ disconnecting means ~~for~~ of branch circuits designed to energize heating or air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners.

A panelboard shall be rated not less than 50 amperes and employ a 2-pole circuit breaker rated 40 amperes for a 40-ampere feeder assembly ~~supply cord~~, or 50 amperes for a 50-ampere feeder assembly ~~supply cord~~. A panelboard employing a disconnect switch and fuses shall be rated 60 amperes and shall employ a single 2-pole, 60-ampere fuseholder with 40- or 50-ampere main fuses for 40- or 50-ampere feeder assembly ~~supply cords~~, respectively. The outside of the panelboard shall be plainly marked with the fuse size.

The panelboard shall be located in an accessible location but shall not be located in a bathroom or a clothes closet. A clear working space at least 750 mm (30 in.) wide and 750 mm (30 in.) in front of the panelboard shall be provided. This space shall extend from the floor to the top of the panelboard.

550.11(B) Branch-Circuit Protective Equipment.

Branch-circuit distribution equipment shall be installed in each mobile home and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

The branch-circuit overcurrent devices shall be rated as follows:

(1) Not more than the circuit conductors; and

(2) Not more than 150 percent of the rating of a single appliance rated 13.3 amperes or more that is supplied by an individual branch circuit; but

(3) Not more than the overcurrent protection size and of the type marked on the air conditioner or other motor-operated appliance.

550.11(C) Two-Pole Circuit Breakers.
Where circuit breakers are provided for branch-circuit protection, 240-volt circuits shall be protected by a 2-pole common or companion trip, or by circuit breakers with identified handle ties.

550.11(D) Electrical Nameplates.
A metal nameplate on the outside adjacent to the feeder assembly entrance shall read as follows:

THIS CONNECTION FOR 120/240-VOLT,
3-POLE, 4-WIRE, 60-HERTZ,
_____ AMPERE SUPPLY

The correct ampere rating shall be marked in the blank space.

Exception: For manufactured homes, the manufacturer shall provide in its written installation instructions or in the data plate the minimum ampere rating of the feeder assembly or, where provided, the service-entrance conductors intended for connection to the manufactured home. The rating provided shall not be less than the minimum load calculated in accordance with ***550.****30~~18~~.*

550.12 Branch Circuits.
The number of branch circuits required shall be determined in accordance with 550.12(A) through (E).

550.12(A) Lighting.
The number of branch circuits shall be based on 33 volt-amperes/m^2 (3 VA/ft^2) times outside dimensions of the mobile home (coupler excluded) divided by 120 volts to determine the number of 15- or 20-ampere lighting area circuits, for example,

[550.12(A)]

$$\frac{3 \times \text{length} \times \text{width}}{120 \times 15 \text{ (or } 20)} = \text{No. of 15- (or 20-) ampere circuits}$$

550.12(B) Small Appliances.
In kitchens, pantries, dining rooms, and breakfast rooms, two or more 20-ampere small-appliance circuits, in addition to the number of circuits required elsewhere in this section, shall be provided for all receptacle outlets required by 550.13(~~F~~D) in these rooms. The small appliance ~~Such~~ circuits shall have no other outlets.

Exception No. 1: Receptacle outlets installed solely for the electrical supply and support of an electric clock in any the rooms specified ***in 550.12(B) shall be permitted****.*

Exception No. 2: Receptacle outlets installed to provide power ~~for supplemental equipment and lighting~~ on gas-fired ranges, ovens, or counter-mounted cooking units shall be permitted.

Exception No. 3: A single receptacle for refrigeration equipment shall be permitted to be supplied from an individual branch circuit rated 15 amperes or greater.

Countertop receptacle outlets installed in the kitchen shall be supplied by not less than two small-appliance circuit branch circuits, either or both of which shall be permitted to supply receptacle outlets in the kitchen and other locations specified in 550.12(B).

550.12(C) Laundry Area.
Where a laundry area is provided, a 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s). This circuit shall have no other outlets.

550.12(D) General Appliances.
For general appliances such as furnaces, water heaters, ranges, and central or room air conditioners, there shall be one or more circuits of adequate rating in accordance with the following:

Informational Note: See Article 440, Parts I through VI for central air conditioning.

(1) The ampere rating of fixed appliances shall be not over 50 percent of the circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on the same circuit.

(2) For fixed appliances on a circuit without lighting outlets, the sum of rated amperes shall not exceed the branch-circuit rating. Motor loads or continuous loads shall not exceed 80 percent of the branch-circuit rating.

(3) The rating of a single cord-and-plug-connected appliance on a circuit having no other outlets shall not exceed 80 percent of the circuit rating.

(4) The rating of a range branch circuit shall be based on the range demand as specified for ranges in 550.3018(B)(5).

550.12(E) Bathrooms.
Bathroom receptacle outlets shall be supplied by at least one 20-ampere branch circuit. Such circuits shall have no outlets other than as provided for in 550.13(GE)(2).

550.13 Receptacle Outlets.

550.13(A) Grounding-Type Receptacle Outlets.
All receptacle outlets shall comply with the following:

(1) Be of grounding type

(2) Be installed according to 406.12

(3) Except where supplying specific appliances, be 15- or 20-ampere, 125-volt, either single or multiple type, and accept parallel-blade attachment plugs

550.13(B) Ground-Fault Circuit Interrupters (GFCIs).
Ground-fault circuit-interrupter protection shall be provided as required in 210.8.

550.13(D) Outdoor Receptacles

Outdoor receptacle outlets shall comply with 406.9.

550.13(EC) Cord-Connected Fixed Appliance.

A grounding-type receptacle outlet shall be provided for each cord-connected fixed appliance installed.

550.13(FD) Receptacle Outlets Required.
Except in the bathroom, closet, and hallway areas, receptacle outlets shall be installed at wall spaces 600 mm (2 ft) wide or more so that no point along the floor line is more than 1.8 m (6 ft) measured horizontally from an outlet in that space. In addition, a receptacle outlet shall be installed in the following locations:

(1) Over or adjacent to countertops in the kitchen [at least one on each side of the sink if countertops are on each side and are 300 mm (12 in.) or over in width].

(2) Adjacent to the refrigerator and freestanding gas-range space. A multiple-type receptacle shall be permitted to serve as the outlet for a countertop and a refrigerator.

(3) At countertop spaces for built-in vanities.

(4) At countertop spaces under wall-mounted cabinets.

(5) In the wall at the nearest point to where a bar-type counter attaches to the wall.

(6) In the wall at the nearest point to where a fixed room divider attaches to the wall.

(7) In laundry areas within 1.8 m (6 ft) of the intended location of the laundry appliance(s).

(8) At least one receptacle outlet located outdoors and accessible at grade level and not more than 2.0 m (6½ ft) above grade. A receptacle outlet located in a compartment accessible from the outside of the unit shall be considered an outdoor receptacle.

(9) At least one receptacle outlet shall be installed in bathrooms within 900 mm (36 in.) of the outside edge of each basin. The receptacle outlet shall be located above or adjacent to the basin location. This receptacle shall be in addition to any receptacle that is a part of a luminaire or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity.

550.13(GE) Pipe Heating Cable(s) Receptacle Outlet.
For the connection of pipe heating cable(s), a receptacle outlet shall be located on the underside of the unit as follows:

(1) Within 600 mm (2 ft) of the cold water inlet.

(2) Connected to an interior branch circuit, other than a small-appliance branch circuit. It shall be permitted to use a bathroom receptacle circuit for this purpose.

(3) On a circuit where all of the outlets are on the load side of the GFCI ground-fault circuit interrupter.

(4) This outlet shall not be considered as the receptacle required by 550.30(B)(2)13(F)(8).

550.13(HF) Receptacle Outlets Not Permitted.
Receptacle outlets shall not be permitted in the following locations:

(1) Receptacle outlets shall not be installed within or directly over a bathtub or shower space.

(2) A receptacle shall not be installed in a face-up position in any countertop.

(3) Receptacle outlets shall not be installed above electric baseboard heaters, unless provided for in the listing or manufacturer's instructions.

550.13(IC) Receptacle Outlets Not Required.
Receptacle outlets shall not be required in the following locations:

(1) In the wall space occupied by built-in kitchen or wardrobe cabinets

(2) In the wall space behind doors that can be opened fully against a wall surface

(3) In room dividers of the lattice type that are less than 2.5 m (8 ft) long, not solid, and within 150 mm (6 in.) of the floor

(4) In the wall space afforded by bar-type counters

550.14 Luminaires and Appliances.

550.14(A) Fasten Appliances in Transit.
Means shall be provided to securely fasten appliances when the mobile home is in transit.

Informational Note: (See 550.1816 for provisions on grounding.)

550.14(B) Accessibility.
Every appliance shall be accessible for inspection, service, repair, or replacement without removal of permanent construction.

550.15 Luminaires

550.154(AC) Pendants.
Listed pendant-type luminaires or pendant cords shall be permitted.

550.154(BD) Bathtub and Shower Luminaires.
Where a luminaire is installed over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type listed for wet locations.

550.16 Equipment
Outdoor electrical equipment shall be listed for wet locations or outdoor use. Outdoor electrical equipment located on the underside of the home, under roof extensions or similarly protected locations, shall be listed for use in damp locations.

550.175 Wiring Methods and Materials.
Except as specifically limited in this section, the wiring methods and materials included in this *Code* shall be used in mobile homes. Where conductors are terminated, they shall be used with equipment listed and identified for the conductor materials.

550.175(A) Nonmetallic Boxes.
Nonmetallic boxes shall be permitted only with nonmetallic cable or nonmetallic raceways.

550.175(B) Nonmetallic Cable Protection.
Nonmetallic cable located 380 mm (15 in.) or less above the floor, if exposed, shall be protected from physical damage by covering boards, guard strips, or raceways. Cable likely to be damaged by stowage shall be so protected in all cases.

550.175(C) Metal-Covered and Nonmetallic Cable Protection.
Metal-covered and nonmetallic cables shall be permitted to pass through the centers of the wide side of 2 by 4 studs. However, they shall be protected where they pass through 2 by 2 studs or at other studs or frames where the cable or armor would be less than 32 mm (1¼ in.) from the inside or outside surface of the studs where the wall covering materials are in contact with the studs. Steel plates on each side of the cable, or a tube, with not less than 1.35 mm (0.053 in.) wall thickness shall be required to protect the cable. These plates or tubes shall be securely held in place.

550.175(D) Metal Faceplates.
Where metal faceplates are used, the installation shall comply with 406.40(B) and 406.16(B).

550.175(E) Installation Requirements.
Where a range, clothes dryer, or other appliance is connected by metal-covered cable or flexible metal conduit, a length of not less than 900 mm (3 ft) of unsupported cable or conduit shall be provided to service the appliance. The cable or flexible metal conduit shall be secured to the wall. Type NM or Type SE cable shall not be used to connect a range or dryer. This shall not prohibit the use of Type NM or Type SE cable between the branch-circuit overcurrent protective device and a junction box or range or dryer receptacle.

550.175(F) Raceways.
All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges. Where rigid metal conduit or intermediate metal conduit is terminated at an enclosure with a locknut and bushing connection, two locknuts shall be provided, one inside and one outside of the enclosure.

550.175(G) Switches.
Switches shall be rated as follows:

(1) For lighting circuits, switches shall be rated not less than 10 amperes, 120 to 125 volts, and in no case less than the connected load.

(2) Switches for motor or other loads shall comply with 404.46.

550.175(H) Under-Chassis Wiring (Exposed to Weather).

550.175(H)(1)
Where outdoor or under-chassis line-voltage (120 volts, nominal, or higher) wiring is exposed, it shall be protected by a conduit or raceway identified for use in wet locations. The conductors shall be listed for use in wet locations.

550.175(H)(2)
Where wiring is exposed to physical damage, it shall be protected by a raceway, conduit, or other means.

550.175(I) Boxes, Fittings, and Cabinets.
Boxes, fittings, and cabinets shall be securely fastened in place and shall be supported from a structural member of the home, either directly or by using a substantial brace.

Exception: Snap-in-type boxes. Boxes provided with special wall or ceiling brackets and wiring devices with integral enclosures that securely fasten to walls or ceilings and are identified for the use shall be permitted without support from a structural member or brace. The testing and approval shall include the wall and ceiling construction systems for which the boxes and devices are intended to be used.

550.175(J) Appliance Terminal Connections.
Appliances having branch-circuit terminal connections that operate at temperatures higher than 60°C (140°F) shall have circuit conductors as described in the following:

(1) Branch-circuit conductors having an insulation suitable for the temperature encountered shall be permitted to be run directly to the appliance.

(2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connection to a readily accessible outlet box placed at least 300 mm (1 ft) from the appliance. These conductors shall be in a suitable raceway or Type AC or MC cable of at least 450 mm (18 in.) but not more than 1.8 m (6 ft) in length.

550.175(K) Component Interconnections.
Fittings and connectors that are intended to be concealed at the time of assembly shall be listed and identified for the interconnection of building components. Such fittings and connectors shall be equal to the wiring method employed in

insulation, temperature rise, and fault-current withstanding and shall be capable of enduring the vibration and shock occurring in mobile home transportation.

Informational Note: See 550.4119 for interconnection of multiple section units.

550.186 Grounding.
Grounding of both electrical and nonelectrical metal parts in a mobile home shall be through connection to a grounding bus in the mobile home panelboard and shall be connected through the green-colored insulated conductor in the feeder assembly supply cord or the feeder wiring to the grounding bus in the service-entrance equipment located adjacent to the mobile home location. Neither the frame of the mobile home nor the frame of any appliance shall be connected to the grounded circuit conductor in the mobile home. Where the panelboard is the service equipment as permitted by 550.532(B), the neutral conductors and the equipment grounding bus shall be connected.

550.186(A) Grounded Conductor.

550.186(A)(1) Insulated.
The grounded circuit conductor shall be insulated from the equipment grounding conductors and from equipment enclosures and other grounded parts. The grounded circuit conductor terminals in the panelboard and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the panelboard or in appliances shall be removed and discarded. Where the panelboard is the service equipment as permitted by 550.532(B), the neutral conductors and the equipment grounding bus shall be connected.

550.186(A)(2) Connections of Ranges and Clothes Dryers.
Connections of ranges and clothes dryers with 120/240-volt, 3-wire ratings shall be made with 4-conductor cord and 3-pole, 4-wire, grounding-type plugs or by Type AC cable, Type MC cable, or conductors enclosed in flexible metal conduit.

550.186(B) Equipment Grounding Means.

550.186(B)(1) Feeder Assembly Supply Cord or Permanent Feeder.
The green-colored insulated grounding wire in the feeder assembly supply cord or permanent feeder wiring shall be connected to the grounding bus in the panelboard or disconnecting means.

550.186(B)(2) Electrical System.
In the electrical system, all exposed metal parts, enclosures, frames, luminaire canopies, and so forth, shall be effectively bonded to the grounding terminal or enclosure of the panelboard.

550.186(B)(3) Cord-Connected Appliances.
Cord-connected appliances, such as washing machines, clothes dryers, and refrigerators, and the electrical system of gas ranges and so forth, shall be grounded by means of a cord with an equipment grounding conductor and grounding-type attachment plug.

550.186(C) Bonding of Non-Current-Carrying Metal Parts.

550.186(C)(1) Exposed Non-Current-Carrying Metal Parts.
All exposed non-current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboard. A bonding conductor shall be connected between the panelboard and an accessible terminal on the chassis. Chassis of multiple mobile home sections shall be bonded together with a solid copper, 8 AWG minimum, insulated or bare, bonding conductor with terminations in accordance with 250.8 and 250.12.

550.186(C)(2) Grounding Terminals.
Grounding terminals shall be of the solderless type and listed as pressure-terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare, and shall be 8 AWG copper minimum, or equivalent. The bonding conductor shall be routed so as not to be exposed to physical damage.

550.186(C)(3) Metallic Piping and Ducts.

Metallic gas, water, and waste pipes and metallic air-circulating ducts shall be considered bonded if they are connected to the terminal on the chassis [see 550.18~~6~~(C)(1)] by clamps, solderless connectors, or by suitable grounding-type straps.

550.18~~6~~(C)(4) Metallic Roof and Exterior Coverings.
Any metallic roof and exterior covering shall be considered bonded if the following conditions are met:

(1) The metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners.

(2) The lower panel of the metallic exterior covering is secured by metallic fasteners at a cross member of the chassis by two metal straps per mobile home unit or section at opposite ends.

The bonding strap material shall be a minimum of 100 mm (4 in.) in width of material equivalent to the skin or a material of equal or better electrical conductivity. The straps shall be fastened with paint-penetrating fittings such as screws and starwashers or equivalent.

550.19~~7~~ Testing.

550.19~~7~~(A) Dielectric Strength Test.
The wiring of each mobile home shall be subjected to a 1-minute, 900-volt, dielectric strength test (with all switches closed) between live parts (including neutral conductor) and the mobile home ground. Alternatively, the test shall be permitted to be performed at 1080 volts for 1 second. This test shall be performed after branch circuits are complete and after luminaires or appliances are installed.

Exception: Listed luminaires or appliances shall not be required to withstand the dielectric strength test.

550.19~~7~~(B) Continuity and Operational Tests and Polarity Checks.
Each mobile home shall be subjected to all of the following:

(1) An electrical continuity test to ensure that all exposed electrically conductive parts are properly bonded

(2) An electrical operational test to demonstrate that all equipment, except water heaters and electric furnaces, is connected and in working order

(3) Electrical polarity checks of permanently wired equipment and receptacle outlets to determine that connections have been properly made

Part IX Mobile and Manufactured Home Calculations [Relocate as new Article 120 Part IX. Renumber 550.18 as 120.140]

~~550.18~~120.140 Calculations.
The method detailed in 550.18(A) through 550.18(C) shall be employed in calculating the supply-cord and distribution-panelboard load for each feeder assembly for each mobile home in lieu of the procedure shown in Article ~~220~~120, Parts I through IV, and be based on a 3-wire, 120/240-volt ac only supply with 120-volt loads balanced between the two ungrounded conductors of the 3-wire system.

120.140 ~~550.18~~(A) Lighting, Small-Appliance, and Laundry Load.

120.140 ~~550.18~~(A)(1) Lighting Volt-Amperes.
Length times width of mobile home floor (outside dimensions) times 33 volt-amperes/m^2 (3 VA/ft^2)— for example, length × width × 3 = lighting volt-amperes.

120.140 ~~550.18~~(A)(2) Small-Appliance Volt-Amperes.
Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit — for example, number of circuits × 1500 = small-appliance volt-amperes.

120.140 ~~550.18~~(A)(3) Laundry Area Circuit Volt-Amperes.
1500 volt-amperes.

120.140 ~~550.18~~(A)(4) Total Volt-Amperes.
Lighting volt-amperes plus small-appliance volt-amperes plus laundry area volt-amperes equals total volt-amperes.

120.140 ~~550.18~~(A)(5) Net Volt-Amperes.
First 3000 total volt-amperes at 100 percent plus remainder at 35 percent equals volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

120.140 ~~550.18~~(B) Total Load for Determining Power Supply.
Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 550.18(A)(5).

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere feeder assembly ~~power supply cord~~ is provided, allow 15 amperes per ~~leg~~ phase for air conditioning.

(3) Twenty-five percent of current of largest motor in 550.18(B)(2).

(4) Total of nameplate amperes for waste disposer, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 550.18(B).

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D, Example D11, for an illustration of the application of this calculation.

Table 550.18(B) Freestanding Range Load

Nameplate Rating (watts)	Use (volt-amperes)
0–10,000	80 percent of rating
Over 10,000–12,500	8,000
Over 12,500–13,500	8,400
Over 13,500–14,500	8,800
Over 14,500–15,500	9,200
Over 15,500–16,500	9,600

Table 550.18(B) Freestanding Range Load

Nameplate Rating (watts)	Use (volt-amperes)
Over 16,500–17,500	10,000

120.140 ~~550.18~~(C) Optional Method of Calculation for Lighting and Appliance Load.
The optional method for calculating lighting and appliance load shown in 120.82 shall be permitted.

Commented [CC1]: This is a ballot detail under SR-8424 . It needs to be moved to 120 even if 550 reorganization does not occur.

Part IV Interconnected Sections of Mobile or Manufactured Home Units

550.41~~19~~ Interconnection of Multiple-Section Mobile or Manufactured Home Units.

550.41~~19~~(A) Wiring Methods.
Approved and listed fixed-type wiring methods shall be used to join portions of a circuit that must be electrically joined and are located in adjacent sections after the home is installed on its support foundation. The circuit's junction shall be accessible for disassembly when the home is prepared for relocation.

Informational Note: See 550.17~~5~~(K) for component interconnections.

550.41~~19~~(B) Disconnecting Means.
Expandable or multiunit manufactured homes, not having permanently installed feeders, that are to be moved from one location to another shall be permitted to have disconnecting means with branch-circuit protective equipment in each unit when so located that after assembly or joining together of units, the requirements of 550.10 will be met.

~~550.20 Outdoor Outlets, Luminaires, Air-Cooling Equipment, and So Forth.~~

550.~~20(A)~~.15(C) ~~Listed for Outdoor Use~~Exterior Mounted Luminaires. [Relocate to 550.15(C)]
Outdoor luminaires ~~and equipment~~ shall be listed for wet locations or outdoor use. ~~Outdoor receptacles shall comply with 406.9. Where~~ Outdoor luminaires located on the underside of the home, ~~or located~~ under roof extensions, or similarly protected locations, ~~outdoor luminaires and equipment~~ shall be listed for use in damp locations.

550.~~20(B).~~16(A) Outside Heating Equipment, Air-Conditioning Equipment, or Both. [Relocate to 550.16(A)]
A mobile home provided with a branch circuit designed to energize outside heating equipment, air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners, shall have such branch-circuit conductors terminate in a listed outlet box, or disconnecting means, located on the outside of the mobile home. A label shall be permanently affixed adjacent to the outlet box and shall contain the following information:

THIS CONNECTION IS FOR HEATING
AND/OR AIR-CONDITIONING EQUIPMENT.
THE BRANCH CIRCUIT IS RATED AT NOT MORE THAN
_____ AMPERES, AT _____ VOLTS, 60 HERTZ,
_____ CONDUCTOR AMPACITY.
A DISCONNECTING MEANS SHALL BE LOCATED
WITHIN SIGHT OF THE EQUIPMENT.

The correct voltage and ampere rating shall be given. The tag shall be not less than 0.51 mm (0.020 in.) thick etched brass, stainless steel, anodized or alclad aluminum, or equivalent. The tag shall not be less than 75 mm by 45 mm (3 in. by 1¾ in.) minimum size.

550.~~25~~ .13(C) Arc-Fault Circuit-Interrupter Protection. [Relocate to 550.13(C)]
All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in mobile homes and manufactured homes shall comply with 210.12

Part VIII. Services and Feeders

550.530 Distribution System.
The mobile home park secondary electrical distribution system to mobile home lots shall be single-phase, 120/240 volts, nominal.

550.31120.141 Allowable Demand Factors. [Relocate to new Article 120 Part IX. Renumber as 120.141]
Park electrical wiring systems shall be calculated (at 120/240 volts) on the larger of the following:

(1) 16,000 volt-amperes for each mobile home lot

(2) The load calculated in accordance with 550.18120.140 for the largest typical mobile home that each lot will accept

It shall be permissible to calculate the feeder or service load in accordance with Table 550.31120.141. No demand factor shall be allowed for any other load, except as provided in this *Code*.

Table 550.31120.141 Demand Factors for Services and Feeders

Number of Mobile Homes	Demand Factor (%)
1	100
2	55
3	44
4	39
5	33
6	29
7–9	28
10–12	27
13–15	26
16–21	25
22–40	24

Commented [CC2]: This is a ballot detail under SRSR-8424 . It needs to be moved to 120 even if 550 reorganization does not occur.

Table 550.31120.141 Demand Factors for Services and Feeders

Number of Mobile Homes	Demand Factor (%)
41–60	23
61 and over	22

550.3251 Service Equipment.

550.3251(A) Mobile Home Service Equipment.
Mobile home service equipment shall not be mounted in or on mobile homes. The service equipment shall be rated not less than that required by 550.51(C), and mounted within sight from the mobile home it serves. The installation of the service equipment shall comply with Article 230. The mobile home service disconnect shall be permitted to be used as the emergency disconnect in accordance with 230.70(A)(2) and 230.70(B)(2).

Informational Note: See Article 230 for installation of the service equipment.

550.3251(B) Manufactured Home Service Equipment.
Manufactured home service equipment shall be permitted to be installed in or on a manufactured homes, provided that if all of the following conditions are met:

(1) The manufacturer shall include in its written installation instructions information indicating that the home shall be secured in place by an anchoring system or installed on and secured to a permanent foundation.

(2) The installation of the service shall comply with Article 230 Part I through Part VII.

(3) Means shall be provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure.

(4) Bonding and grounding of the service shall comply with Article 250, Part I through Part V.

(5) The manufacturer shall include, in its written installation instructions, one method of grounding the service equipment at the installation site. The instructions shall clearly state that other methods of grounding are found in Article 250.

(6) The minimum size grounding electrode conductor shall be specified in the instructions.

(7) A warning label meeting the requirements in 110.21(B) and stating the following, shall be mounted on or adjacent to the service equipment:

WARNING
DO NOT PROVIDE ELECTRICAL POWER
UNTIL THE GROUNDING ELECTRODE(S)
IS INSTALLED AND CONNECTED
(SEE INSTALLATION INSTRUCTIONS).

Where the service equipment is not installed in or on the unit, the installation shall comply with the other requirements of this section.

550.3251(C) Rating.

Mobile home service equipment shall be rated at not less than 100 amperes at 120/240 volts, and provisions shall be made for connecting a mobile home feeder assembly by a permanent wiring method. Power outlets used as mobile home service equipment shall also be permitted to contain receptacles rated up to 50 amperes with appropriate overcurrent protection. Fifty-ampere receptacles shall conform to the configuration shown in Figure 550.10(C).

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

550.~~32~~51(D) Additional Outside Electrical Equipment.
Means for connecting a mobile home accessory building or structure or additional electrical equipment located outside a mobile home by a fixed wiring method shall be provided in either the mobile home service equipment or the local external disconnecting means permitted in 550.~~32~~51(A).

550.~~32~~51(E) Replacement Home.

When existing service equipment is reconnected to a replacement mobile or manufactured home, the service shall be provided with a surge protective device in accordance with 230.67.

550.~~32~~51(F) Additional Receptacles on Service Equipment.
Receptacles located outside ~~a~~ mobile or manufactured homes shall be provided with GFCI ~~ground-fault circuit-interrupter~~ protection as specified by 210.8(A). Where receptacles provide power to mobile or manufactured homes in accordance with 550.10, GFCI ~~ground-fault circuit-interrupter~~ protection shall not be required.

550.~~32~~51(G) Mounting Height.
Outdoor mobile home disconnecting means shall be installed so the bottom of the enclosure containing the disconnecting means is not less than 600 mm (2 ft) above finished grade or working platform. The disconnecting means shall be installed so that the center of the grip of the operating handle, when in the highest position, is not more than 2.0 m (6 ft 7 in.) above the finished grade or working platform.

550.~~32~~51(H) Marking.
Where a 125/250-volt receptacle is used in mobile home service equipment, the service equipment shall be marked as follows:

TURN DISCONNECTING SWITCH OR
CIRCUIT BREAKER OFF BEFORE INSERTING
OR REMOVING PLUG. PLUG MUST BE FULLY
INSERTED OR REMOVED.

The marking shall be located on the service equipment adjacent to the receptacle outlet.

550.~~33~~52 Feeder.

550.~~33~~52(A) Feeder Equipment.
The feeder assembly, including the disconnecting means, shall not be mounted in or on the mobile home. A manufactured home feeder disconnecting means shall be permitted to be installed in or on the manufactured home in accordance with the requirements of 550.~~32~~51(B). The feeder equipment shall be rated not less than that required in 550.~~32~~51(C), mounted in a readily accessible outdoor location, and within sight from the mobile home or manufactured home it serves. Grounding of the disconnecting means shall be in accordance with 250.32.

550.~~33~~52(B) Feeder Conductors.
Feeder conductors shall comply with the following:

(1) Feeder conductors shall consist of either a listed cord, factory installed in accordance with 550.10(B), or a permanently installed feeder consisting of four insulated, color-coded conductors that shall be identified by the factory or field marking of the conductors in compliance with 310.6. Equipment grounding conductors shall not be identified by stripping the insulation.

(2) Feeder conductors shall be installed in compliance with 250.32(B).

Exception: An existing feeder installed without an equipment grounding conductor shall be permitted to comply with 250.32(B)(1) Exception No. 1.

550.~~33~~52(C) Feeder Capacity.
Mobile home and manufactured home feeder circuit conductors shall have a capacity not less than the loads supplied, shall have an ampacity of not less than 100 amperes, and shall be permitted to be sized in accordance with 310.12.

Second Revision No. 8270-NFPA 70-2024 [Global Comment]

Remove the term "to be installed" in Articles 550, 551, and 552.

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Tue Oct 22 16:53:23 EDT 2024

Committee Statement

Committee Statement: Remove “to be installed” to align with NEC style manual 3.1.1, and 3.5.1.1
Response Message: SR-8270-NFPA 70-2024

Second Revision No. 8277-NFPA 70-2024 [Global Comment]

Replace "overcurrent protective devices" with "OCPD" in articles 550, 551, and 552.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 17:09:40 EDT 2024

Committee Statement

Committee Statement: The acronym OCPD was added and the term “overcurrent protective devices” was deleted in sections for consistency.

Response Message: SR-8277-NFPA 70-2024

Second Revision No. 8143-NFPA 70-2024 [Detail]

[Create two new sections after 555.14(A)(2)]

(3) Unencapsulated Welded Wire.

Unencapsulated steel structural welded wire reinforcement, bonded together by steel tie wires or the equivalent and fully embedded within the surface material.

(4) Nonconductive Surfaces

If structural reinforcing steel is absent, is encapsulated in a nonconductive compound, or embedding is not possible, a copper conductor grid in accordance with 555.14(A)(2) shall be provided directly under the surface material not more than 150 mm (6 in.) below finished grade.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 13:25:30 EDT 2024

Committee Statement

Committee Statement: New item (3) is in concert with similar changes in Section 680.26 regarding pool bonding grid. Item (4) was added to address installations where the equipotential plane was never installed, or when there is no surface material to embed the equipotential plane.

Response Message: SR-8143-NFPA 70-2024

Public Comment No. 1337-NFPA 70-2024 [New Section after 555.14(A)(2)]

Second Revision No. 8194-NFPA 70-2024 [Detail]

555.35 Ground-Fault Protection of Equipment (GFPE) and Ground-Fault Circuit Interrupters (GFCIs).

Ground-fault protection of equipment (GFPE) serving docking facilities and piers shall be provided in accordance with 555.35(A) through 555.35(E).

(A) Feeders and Branch Circuits.

Feeders and branch circuits shall be provided with listed GFPE rated not more than 100 milliamperes (mA).

Exception No. 1: The load side conductors of a separately derived system and circuit supplying ground-fault monitoring equipment that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted ~~to be installed~~ ~~without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.~~

Exception No. 2: Feeders for fire pumps shall be permitted to use ground-fault monitoring without disconnecting power to the fire pump in accordance with the following:

(1) ***The ground-fault monitor alarm shall notify upon ground faults exceeding 100 mA.***

(2) ***The alarm shall be audible and visual.***

(3) ***The alarm shall be located where it can be monitored by qualified personnel.***

(B) Receptacles and Outlets.

(1) Receptacles Providing Shore Power.

Listed GFPE, rated not more than 30 mA, shall be provided for receptacles installed in accordance with 555.33(A).

(2) Outlets for Other than Shore Power.

GFCI protection for personnel shall be provided for outlets under the following conditions:

(1) The branch circuit is single-phase, does not exceed 150 volts to ground, and is rated 60 amperes or less.

(2) The branch circuit is 3-phase, does not exceed 150 volts to ground, and is rated 100 amperes or less.

Exception to (1) and (2): Low-voltage circuits not requiring grounding, not exceeding the low-voltage contact limit, and supplied by listed transformers or power supplies that comply with 680.23(A)(2) shall be permitted ~~to be installed~~ ~~without ground-fault protection.~~

(C) Boat Hoists.

GFCI protection for personnel shall be provided for outlets not exceeding 240 volts that supply boat hoists installed at docking facilities. GFCI-protected receptacles for other than shore power shall be permitted to supply boat hoists.

(D) Leakage Current Measurement Device.

Where more than three receptacles supply shore power to boats, a listed leakage current measurement device for use in marina applications shall be available and be used to determine leakage current from each boat that will use shore power. The listing requirement for the leakage current measurement device for use in marina applications shall become effective January 1, 2026.

Informational Note No. 1: Leakage current measurement will provide the capability to determine when an individual boat has defective wiring or other problems contributing to hazardous voltage and current. The use of a test device will allow the facility operator to identify a boat that is creating problems. In some cases a single boat could cause an upstream GFPE device protecting a feeder to operate even though multiple boats are supplied from the same feeder. The use of a test device will help the facility operator prevent a particular boat from contributing to hazardous voltage and current in the marina area.

Informational Note No. 2: An annual test of each boat with the leakage current measurement device is a prudent step toward determining if a boat has defective wiring that could be contributing hazardous voltage and current. Where the leakage current measurement device reveals that a boat is contributing hazardous voltage and current, repairs should be made to the boat before it is permitted to use shore power.

Exception: Where shore power equipment includes a leakage indicator and leakage alarm, a separate leakage test device shall not be required.

(E) Coordination and Performance Testing.

GFPE protection systems shall be coordinated and performance tested by an approved method when first installed on site. This testing shall be conducted by a qualified person(s) in accordance with the manufacturer's instructions. A written record of this testing shall be made available to the authority having jurisdiction.

Supplemental Information

File Name	Description	Approved
NFPA_70_8194.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 17:35:40 EDT 2024

Committee Statement

Committee Statement: “To be installed” Is removed to align with NEC Style Manual Sections 3.1.1, and 3.5.1.1

Response Message: SR-8194-NFPA 70-2024

555.35 Ground-Fault Protection of Equipment (GFPE) and Ground-Fault Circuit Interrupters (GFCIs).

Ground-fault protection of equipment (GFPE) serving docking facilities and piers shall be provided in accordance with 555.35(A) through 555.35(E).

(A) Feeders and Branch Circuits.

Feeders and branch circuits shall be provided with listed GFPE rated not more than 100 milliamperes (mA).

Exception No. 1: The load side conductors of a separately derived system and circuit supplying ground-fault monitoring equipment that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted ~~to be installed~~ without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

Exception No. 2: Feeders for fire pumps shall be permitted to use ground-fault monitoring without disconnecting power to the fire pump in accordance with the following:

1. The ground-fault monitor alarm shall notify upon ground faults exceeding 100 mA.
2. The alarm shall be audible and visual.
3. The alarm shall be located where it can be monitored by qualified personnel.

(B) Receptacles and Outlets.

(1) Receptacles Providing Shore Power.

Listed GFPE, rated not more than 30 mA, shall be provided for receptacles installed in accordance with 555.33(A).

(2) Outlets for Other than Shore Power.

GFCI protection for personnel shall be provided for outlets under the following conditions:

1. The branch circuit is single-phase, does not exceed 150 volts to ground, and is rated 60 amperes or less.
2. The branch circuit is 3-phase, does not exceed 150 volts to ground, and is rated 100 amperes or less.

Exception to (1) and (2): Low-voltage circuits not requiring grounding, not exceeding the low-voltage contact limit, and supplied by listed transformers or power supplies that comply with 680.23(A)(2) shall be permitted ~~to be installed~~ without ground-fault protection.

(C) Boat Hoists.

GFCI protection for personnel shall be provided for outlets not exceeding 240 volts that supply boat hoists installed at docking facilities. GFCI-protected receptacles for other than shore power shall be permitted to supply boat hoists.

(D) Leakage Current Measurement Device.

Where more than three receptacles supply shore power to boats, a listed leakage current measurement device for use in marina applications shall be available and be used to determine leakage current from each boat that will use shore power. The listing requirement for the leakage current measurement device for use in marina applications shall become effective January 1, 2026.

Informational Note No. 1: Leakage current measurement will provide the capability to determine when an individual boat has defective wiring or other problems contributing to hazardous voltage and current. The use of a test device will allow the facility operator to identify a boat that is creating problems. In some cases a single boat could cause an upstream GFPE device protecting a feeder to operate even though multiple boats are supplied from the same feeder. The use of a test device will help the facility operator prevent a particular boat from contributing to hazardous voltage and current in the marina area.

Informational Note No. 2: An annual test of each boat with the leakage current measurement device is a prudent step toward determining if a boat has defective wiring that could be contributing hazardous voltage and current. Where the leakage current measurement device reveals that a boat is contributing hazardous voltage and current, repairs should be made to the boat before it is permitted to use shore power.

Exception: Where shore power equipment includes a leakage indicator and leakage alarm, a separate leakage test device shall not be required.

(E) Coordination and Performance Testing.

GFPE protection systems shall be coordinated and performance tested by an approved method when first installed on site. This testing shall be conducted by a qualified person(s) in accordance with the manufacturer's instructions. A written record of this testing shall be made available to the authority having jurisdiction.

Second Revision No. 8207-NFPA 70-2024 [Detail]

[Create two new sections after 682.33(A)(2)]

(3) Unencapsulated Welded Wire.

Unencapsulated steel structural welded wire reinforcement, bonded together by steel tie wires or the equivalent and fully embedded within the surface material.

(4) Nonconductive Surfaces

If structural reinforcing steel is absent, is encapsulated in a nonconductive compound, or embedding is not possible, a copper conductor grid in accordance with 682.33(A)(2) shall be provided directly under the surface material not more than 150 mm (6 in.) below finished grade.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 18:00:00 EDT 2024

Committee Statement

Committee Statement: New item (3) is in concert with similar changes in Section 680.26 regarding pool bonding grid. Item (4) was added to address installations where the equipotential plane was never installed, or when there is no surface material to embed the equipotential plane.

Response Message: SR-8207-NFPA 70-2024

Public Comment No. 1336-NFPA 70-2024 [New Section after 682.33(A)(2)]

Second Revision No. 8243-NFPA 70-2024 [Detail]

551.71 AC Type Receptacles Provided.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 11:44:03 EDT 2024

Committee Statement

Committee Statement: The title was revised to reflect the fact the requirements in this section apply to AC only.

Response Message: SR-8243-NFPA 70-2024

Public Comment No. 565-NFPA 70-2024 [Section No. 551.71]

Second Revision No. 8484-NFPA 70-2024 [Detail]

[See attached file]

Part IX Mobile and Manufactured Home Calculations [Relocate as new Article 120 Part IX. Re number 550.18 as 120.140]

~~550.18 120.140~~ ~~Calculations.~~

The method detailed in 550.18 (A) through 550.18 (C)shall be employed in calculating the supply-cord and distribution-panelboard load for each feeder assembly for each mobile home in lieu of the procedure shown in Article ~~220~~ 120, Parts I through IV, and be based on a 3-wire, 120/240-volt ac only supply with 120-volt loads balanced between the two ungrounded conductors of the 3-wire system.

120.140 ~~550.18~~ (A) Lighting, Small-Appliance, and Laundry Load.

120.140 ~~550.18~~ (A)(1) Lighting Volt-Amperes.

Length times width of mobile home floor (outside dimensions) times 33 volt-amperes/m^2 (3 VA/ft^2)— for example, length × width × 3 = lighting volt-amperes.

120.140 ~~550.18~~ (A)(2) Small-Appliance Volt-Amperes.

Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit — for example, number of circuits × 1500 = small-appliance volt-amperes.

120.140 ~~550.18~~ (A)(3) Laundry Area Circuit Volt-Amperes.

1500 volt-amperes.

120.140 ~~550.18~~ (A)(4) Total Volt-Amperes.

Lighting volt-amperes plus small-appliance volt-amperes plus laundry area volt-amperes equals total volt-amperes.

120.140 ~~550.18~~ (A)(5) Net Volt-Amperes.

First 3000 total volt-amperes at 100 percent plus remainder at 35 percent equals volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

120.140 ~~550.18~~ (B) Total Load for Determining Power Supply.

Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 550.18(A)(5).

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere feeder assembly ~~power-supply cord~~ is provided, allow 15 amperes per ~~leg~~ phase for air conditioning.

(3) Twenty-five percent of current of largest motor in 550.18(B)(2).

(4) Total of nameplate amperes for waste disposer, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 550.18(B).

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D, Example D11, for an illustration of the application of this calculation.

Table 550.18(B) Freestanding Range Load

Nameplate Rating (watts)	Use (volt-amperes)
0–10,000	80 percent of rating
Over 10,000–12,500	8,000
Over 12,500–13,500	8,400
Over 13,500–14,500	8,800
Over 14,500–15,500	9,200
Over 15,500–16,500	9,600
Over 16,500–17,500	10,000

120.140 ~~550.18~~ (C) Optional Method of Calculation for Lighting and Appliance Load.

The optional method for calculating lighting and appliance load shown in 120.82 shall be permitted.

Supplemental Information

File Name	Description	Approved
SR_8484_attachement.docx	SR 8484 attachment	

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Fri Oct 25 10:48:25 EDT 2024

Committee Statement

Committee Statement: Former 550.18 has been moved to Article 120 Part IX for calculations.

Response Message: SR-8484-NFPA 70-2024

Public Comment No. 1726-NFPA 70-2024 [Section No. 550.18]

Part IX Mobile and Manufactured Home Calculations [Relocate as new Article 120 Part IX. Renumber 550.18 as 120.140]

~~550.18~~120.140 Calculations.

The method detailed in 550.18(A) through 550.18(C) shall be employed in calculating the supply-cord and distribution-panelboard load for each feeder assembly for each mobile home in lieu of the procedure shown in Article ~~220~~120, Parts I through IV, and be based on a 3-wire, 120/240-volt ac only supply with 120-volt loads balanced between the two ungrounded conductors of the 3-wire system.

120.140 ~~550.18~~(A) Lighting, Small-Appliance, and Laundry Load.

120.140 ~~550.18~~(A)(1) Lighting Volt-Amperes.

Length times width of mobile home floor (outside dimensions) times 33 volt-amperes/m^2 (3 VA/ft^2)— for example, length × width × 3 = lighting volt-amperes.

120.140 ~~550.18~~(A)(2) Small-Appliance Volt-Amperes.

Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit — for example, number of circuits × 1500 = small-appliance volt-amperes.

120.140 ~~550.18~~(A)(3) Laundry Area Circuit Volt-Amperes.

1500 volt-amperes.

120.140 ~~550.18~~(A)(4) Total Volt-Amperes.

Lighting volt-amperes plus small-appliance volt-amperes plus laundry area volt-amperes equals total volt-amperes.

120.140 ~~550.18~~(A)(5) Net Volt-Amperes.

First 3000 total volt-amperes at 100 percent plus remainder at 35 percent equals volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

120.140 ~~550.18~~(B) Total Load for Determining Power Supply.

Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 550.18(A)(5).

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere feeder assembly ~~power-supply cord~~ is provided, allow 15 amperes per ~~leg~~ phase for air conditioning.

(3) Twenty-five percent of current of largest motor in 550.18(B)(2).

(4) Total of nameplate amperes for waste disposer, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 550.18(B).

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D, Example D11, for an illustration of the application of this calculation.

Table 550.18(B) Freestanding Range Load

Nameplate Rating (watts)	Use (volt-amperes)
0–10,000	80 percent of rating
Over 10,000–12,500	8,000
Over 12,500–13,500	8,400
Over 13,500–14,500	8,800
Over 14,500–15,500	9,200
Over 15,500–16,500	9,600
Over 16,500–17,500	10,000

120.140 ~~550.18~~(C) Optional Method of Calculation for Lighting and Appliance Load.
The optional method for calculating lighting and appliance load shown in 120.82 shall be permitted.

Second Revision No. 8485-NFPA 70-2024 [Detail]

[see attached file]

~~550.31 120.14~~ **~~1~~ Allowable Demand Factors.** ~~[Rel ocate to new Article 120 Part IX. R enumber as 120. 14 1]~~

Park electrical wiring systems shall be calculated (at 120/240 volts) on the larger of the following:

(1) 16,000 volt-amperes for each mobile home lot

(2) The load calculated in accordance with 120.140 for the largest typical mobile home that each lot will accept

It shall be permissible to calculate the feeder or service load in accordance with Table 120.141. No demand factor shall be allowed for any other load, except as provided in this *Code*.

Table 120.141(D) Demand Factors for Services and Feeders

Number of Mobile Homes	Demand Factor (%)
1	100
2	55
3	44
4	39
5	33
6	29
7–9	28
10–12	27
13–15	26
16–21	25

Table 120.141(D) Demand Factors for Services and Feeders

Number of Mobile Homes	Demand Factor (%)
22–40	24
41–60	23

Supplemental Information

File Name	Description	Approved
Sr_8485_attachment.docx	attachment for SR 8485	

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Fri Oct 25 11:03:23 EDT 2024

Committee Statement

Committee Statement: Former 550.31 has been moved to Article 120 Part IX for calculations.
Response Message: SR-8485-NFPA 70-2024

Public Comment No. 1725-NFPA 70-2024 [Section No. 550.31]

Second Revision No. 8286-NFPA 70-2024 [Section No. 545.9(A)]

(A) Other Dimensions.

~~Boxes~~ Listed boxes of dimensions other than those required in Table 314.16(A) shall be permitted~~ to be installed where tested, identified, and listed to applicable standards~~ .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 17:53:31 EDT 2024

Committee Statement

Committee Statement: "To be installed" is deleted to align with NEC Style Manual Sections 3.1.1, and 3.5.1.1.

"Where tested, identified to applicable standards" is deleted as there is already a reference to Listing that would address those issues.

Response Message: SR-8286-NFPA 70-2024

Second Revision No. 8287-NFPA 70-2024 [Section No. 545.10]

545.10 Receptacle or Switch with Integral Enclosure.

A receptacle or switch with integral enclosure and mounting means, where tested, identified, and listed to applicable standards, shall be permitted~~- to be installed~~ .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 17:55:00 EDT 2024

Committee Statement

Committee Statement: Deleted “to be installed” in accordance with the PC as it is redundant. Also deleted where tested, identified to applicable standards as there is already a reference to Listing

Response Message: SR-8287-NFPA 70-2024

Second Revision No. 8285-NFPA 70-2024 [Section No. 545.24]

545.24 Disconnecting Means and Branch-Circuit ~~Overcurrent Protection~~ OCPD .

(A) Disconnecting Means.

A single disconnecting means consisting of a circuit breaker, or a switch and fuses and its accessories, shall be provided in a readily accessible location for each relocatable structure.

(B) ~~Branch-Circuit~~ Overcurrent Protective Devices and Panelboards.

Branch-circuit distribution equipment shall be installed in each relocatable structure and include ~~a branch-circuit overcurrent protection device~~ an OCPD for each branch circuit consisting of either circuit breakers or fuses.

Panelboards shall be installed in a readily accessible location.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 17:51:16 EDT 2024

Committee Statement

Committee Statement: The acronym OCPD was added and the term “overcurrent protective devices” was deleted in sections for consistency.

Response Message: SR-8285-NFPA 70-2024

Second Revision No. 8282-NFPA 70-2024 [Section No. 545.26]

545.26 Bonding of Exposed Non-Current-Carrying Metal Parts.

All exposed non-current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboards. A bonding conductor shall be connected between the panelboards and an accessible terminal on the chassis. Chassis of ~~mutiple~~ multiple relocatable structure sections that are physically connected together shall be bonded together with a solid copper, 8 AWG minimum, insulated or bare bonding conductor with terminations in accordance with 250.8 and 250.12.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 17:40:53 EDT 2024

Committee Statement

Committee Statement: Relocatable structures should be physically connected to require them to be bonded together.

Response Message: SR-8282-NFPA 70-2024

Public Comment No. 791-NFPA 70-2024 [Section No. 545.26]

Second Revision No. 8293-NFPA 70-2024 [Section No. 547.44(A)(2)]

(2) Outdoors.

Equipotential planes shall be installed in concrete slabs where metallic equipment is located that could become energized and is accessible to livestock.

The equipotential plane shall encompass the area where the livestock stands while accessing metallic equipment that could become energized.

Informational note: Metallic equipment could include but is not limited to waterers, conveyance feeding equipment and feeding troughs.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 18:21:06 EDT 2024

Committee Statement

Committee Statement: The informational note explains the type of electrical equipment found in an outdoor area that would require an equipotential plane.

Response Message: SR-8293-NFPA 70-2024 There is no need to refer to a subsequent requirement.

Public Comment No. 1702-NFPA 70-2024 [Section No. 547.44(A)(2)]

Second Revision No. 8294-NFPA 70-2024 [Section No. 547.44(C)]

(C) Equipotential Plane Construction.

Equipotential planes shall be constructed as specified in 547.44(C)(1) ~~or~~ through 547.44(C)(~~2~~ 4).

(1) Structural Reinforcing Steel.

Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

(2) Copper Grid.

Copper grids shall be permitted where the following requirements are met:

(1) They are constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing in accordance with 250.8 or other approved means

(2) They are arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.)

(3) Be constructed using only listed splicing devices or exothermic welding

(3) Unencapsulated Welded Wire.

Unencapsulated steel structural welded wire reinforcement, bonded together by steel tie wires or the equivalent and fully embedded within the surface material.

(4) Nonconductive Surfaces.

If structural reinforcing steel is absent, is encapsulated in a nonconductive compound, or embedding is not possible, a copper conductor grid in accordance with 547.44(C)(2) shall be provided directly under the surface material not more than 150 mm (6 in.) below finished grade.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 18:50:51 EDT 2024

Committee Statement

Committee Statement: 547.44(C)(2): Item 3 was added for consistency of requirements for equipotential planes.

New item (3) is in concert with similar changes in Section 680.26 regarding pool bonding grid. Item (4) was added to address installations where the equipotential plane was never installed, or when there is no surface material to embed the equipotential plane.

Response Message: SR-8294-NFPA 70-2024

Public Comment No. 1340-NFPA 70-2024 [New Section after 547.44(C)(2)]

Second Revision No. 8225-NFPA 70-2024 [Section No. 551.20(B)]

(B) Voltage Converters (120-Volt Alternating Current to Low-Voltage Direct Current).

The 120-volt ac side of the voltage converter shall be wired in full conformity with the requirements of Article 551, Parts I, II, and IV, for 120-volt electrical systems.

Exception: Converters supplied as an integral part of a listed appliance shall not be subject to 551.20(B).

~~All converters and transformers shall be listed for use in recreational vehicles and designed or equipped to provide overtemperature protection.~~

(C) Voltage Converter Size.

To determine the voltage converter size, the following percentages shall be applied to the total connected load of all 12-volt equipment:

1) The first 20 amperes of load at 100 percent plus

2) The second 20 amperes of load at 50 percent plus

3) All loads above 40 amperes at 25 percent

Exception: A low-voltage appliance that is controlled by a momentary switch (normally open) that has no means for holding in the closed position or refrigerators with a 120-volt function shall not be considered a connected load when determining the required converter ~~rating~~ size . Momentarily energized appliances shall be limited to those used to prepare the vehicle for occupancy or travel.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 19:09:19 EDT 2024

Committee Statement

Committee Statement: The second sentence in (B) was deleted since new 551.2 addresses listing of equipment.

Item (C) text was inadvertently deleted during the first draft.

Response Message: SR-8225-NFPA 70-2024

Public Comment No. 243-NFPA 70-2024 [Section No. 551.20]

Second Revision No. 8283-NFPA 70-2024 [Section No. 551.32]

551.32 Other Sources.

(A) General Requirements.

Other sources of ac power, such as inverters, motor generators, or engine generators, shall be listed for use in recreational vehicles and shall be installed in accordance with the terms of the listing. Other sources of ac power shall be wired in full conformity with the requirements in Article 551, Parts I, II, III, IV, and V, covering 120-volt electrical systems.

(B) Labeling of Inverters. If an inverter or inverter/charger is provided, a safety label complying with 110.21(B) with the signal word WARNING in minimum 6-mm (1/4 in.) high letters and body text in minimum 3-mm (1/8 in.) high letters on a contrasting background shall be affixed at the panelboard(s) and at the entry of the feeder assembly to the vehicle and shall read as follows:

WARNING

This electrical system is equipped with an inverter or inverter/charger.

Disconnect all AC and DC power to the inverter or inverter/charger before performing any service to the electrical system. Failure to do so can result in shock causing serious injury or death.

Supplemental Information

File Name	Description	Approved
NEC_CMP-7_SR-8283_551.32.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 17:45:41 EDT 2024

Committee Statement

Committee Statement: A recent field incident that resulted in electrical shock to an RV service technician was brought to the attention of CMP-7. This label will alert service technicians and owners that although they have unplugged the vehicle, electrical hazards may still be present. The label size and description is consistent with other labels sizes in NFPA 1192.

Response Message: SR-8283-NFPA 70-2024

551.32 Other Sources.

~~Other sources of ac power, such as inverters, motor generators, or engine generators, shall be listed for use in recreational vehicles and shall be installed in accordance with the terms of the listing. Other sources of ac power shall be wired in full conformity with the requirements in Article 551, Parts I, II, III, IV, and V, covering 120-volt electrical systems.~~

(A) General Requirements.

Other sources of ac power, such as inverters, motor generators, or engine generators, shall be listed for use in recreational vehicles and shall be installed in accordance with the terms of the listing. Other sources of ac power shall be wired in full conformity with the requirements in Article 551, Parts I, II, III, IV, and V, covering 120-volt electrical systems.

(B) Labeling of Inverters.

If an inverter or inverter/charger is provided, a safety label complying with 110.21(B) with the signal word WARNING in minimum 6-mm (1/4 in.) high letters and body text in minimum 3-mm (1/8 in.) high letters on a contrasting background shall be affixed at the panelboard(s) and at the entry of the feeder assembly to the vehicle and shall read as follows:

WARNING

This electrical system is equipped with an inverter or inverter/charger.

Disconnect all AC and DC power to the inverter or inverter/charger before performing any service to the electrical system. Failure to do so can result in shock causing serious injury or death.

Second Revision No. 8234-NFPA 70-2024 [Section No. 551.40(D)]

(D) Grounding Monitor Interrupter.

Recreational vehicles with a 30- or 50-ampere feeder assembly shall have a listed Type II grounding monitor interrupter permanently installed between the feeder assembly connection to the vehicle and before either of the following:

1. The panelboard if not provided with a transfer switch ~~if installed or the panelboard. This requirement shall become effective January 1, 2026.~~ ahead of the panelboard.

2. The transfer switch ahead of the panelboard, if provided.

Exception: The grounding monitor interrupter shall be permitted to be integral to the utility supply side of the transfer switch or panelboard.

Informational Note: See UL 2299, the Outline of Investigation for Grounding Monitor Interrupters for Type II grounding monitor interrupters (GMI). Type II GMI meets the requirements of a Type I GMI that monitors and interrupts the ungrounded conductors if grounding is lost, and additionally monitors and interrupts the grounding conductor if a potential is present on the grounding conductor.

Supplemental Information

File Name	Description	Approved
NEC_CMP-7_SR-8234_551.40_D_.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 19:51:02 EDT 2024

Committee Statement

Committee Statement: A type II GMI provides protection against a reflected hot skin condition. The location of the GMI is more clearly defined and allows for incorporation into already existing devices. The effective date is removed as it is not needed.

Response Message: SR-8234-NFPA 70-2024

Public Comment No. 793-NFPA 70-2024 [Section No. 551.40(D)]

Public Comment No. 716-NFPA 70-2024 [Section No. 551.40(D)]

(D) Grounding Monitor Interrupter.

Recreational vehicles with a 30- or 50-ampere feeder assembly shall have a listed Type II grounding monitor interrupter permanently installed between the feeder assembly connection to the vehicle and before either ~~a transfer switch if installed or the panelboard. This requirement shall become effective January 1, 2026.~~of the following:

(1) The panelboard if not provided with a transfer switch ahead of the panelboard.

(2) The transfer switch ahead of the panelboard, if provided.

Exception: The grounding monitor interrupter shall be permitted to be integral to the utility supply side of the transfer switch or panelboard.

Informational Note: See UL 2299, the Outline of Investigation for Grounding Monitor Interrupters for Type II grounding monitor interrupters (GMI). Type II GMI meets the requirements of a Type I GMI that monitors and interrupts the ungrounded conductors if grounding is lost, and additionally monitors and interrupts the grounding conductor if a potential is present on the grounding conductor.

Second Revision No. 8254-NFPA 70-2024 [Section No. 551.45]

551.45 Panelboard.

(A)

~~Listed and Appropriately Rated.~~

~~A listed and appropriately rated panelboard or other equipment specifically listed for this purpose shall be used. The grounded conductor termination bar shall be insulated from the enclosure as provided in 551.54(C) . An equipment grounding terminal bar shall be attached inside the enclosure of the panelboard.~~

~~**(B)** Location.~~

~~The panelboard shall be installed in a readily accessible location with the RV in the setup mode. Working clearance for the panelboard with the RV in the setup mode shall be not less than 600 mm (24 in.) wide and 750 mm (30 in.) deep.~~

~~*Exception No. 1: Where the panelboard cover is exposed to the inside aisle space, one of the working clearance dimensions shall be permitted to be reduced to a minimum of 550 mm (22 in.). A panelboard is considered exposed where the panelboard cover is within 50 mm (2 in.) of the aisle's finished surface or not more than 25 mm (1 in.) from the backside of doors that enclose the space.*~~

~~*Exception No. 2: Compartment doors used for access to a generator shall be permitted to be equipped with a locking system.*~~

(~~C~~ B) Dead-Front Type.

The panelboard shall be of the dead-front type and shall consist of one or more circuit breakers or Type S fuseholders. A main disconnecting means shall be provided where fuses are used or where more than two circuit breakers are employed. A main overcurrent protective device not exceeding the feeder assembly rating shall be provided where more than two branch circuits are employed.

Supplemental Information

File Name	Description	Approved
NEC_CMP-7_SR-8254_551.45.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 13:42:59 EDT 2024

Committee Statement

Committee Statement: Listing requirements have been moved to XXX.2 section in compliance with the NEC Style Manual. The grounding terminal bar requirements are redundant with the grounding section of the article.

Response Message:	SR-8254-NFPA 70-2024

551.45 Panelboard.

~~(A) Listed and Appropriately Rated.~~

~~A listed and appropriately rated panelboard or other equipment specifically listed for this purpose shall be used. The grounded conductor termination bar shall be insulated from the enclosure as provided in 551.54(C). An equipment grounding terminal bar shall be attached inside the enclosure of the panelboard.~~

(~~B~~A) Location.

The panelboard shall be installed in a readily accessible location with the RV in the setup mode. Working clearance for the panelboard with the RV in the setup mode shall be not less than 600 mm (24 in.) wide and 750 mm (30 in.) deep.

Exception No. 1: Where the panelboard cover is exposed to the inside aisle space, one of the working clearance dimensions shall be permitted to be reduced to a minimum of 550 mm (22 in.). A panelboard is considered exposed where the panelboard cover is within 50 mm (2 in.) of the aisle's finished surface or not more than 25 mm (1 in.) from the backside of doors that enclose the space.

Exception No. 2: Compartment doors used for access to a generator shall be permitted to be equipped with a locking system.

(~~C~~B) Dead-Front Type.

The panelboard shall be of the dead-front type and shall consist of one or more circuit breakers or Type S fuseholders. A main disconnecting means shall be provided where fuses are used or where more than two circuit breakers are employed. A main overcurrent protective device not exceeding the feeder assembly rating shall be provided where more than two branch circuits are employed.

Second Revision No. 8239-NFPA 70-2024 [Section No. 551.47(A)]

(A) Wiring Systems.

~~Except as otherwise specified in this article, the following wiring methods shall be permitted to be installed within a recreational vehicle:~~

(1) ~~Type AC~~

(2) ~~Type FC~~

(3) ~~Type MC~~

(4) ~~Type UF~~

(5) ~~Type IMC~~

(6) ~~Type ENT~~

(7) ~~Surface metal raceways~~

(8) ~~Surface nonmetallic raceways~~

~~The wiring method shall include an equipment grounding conductor~~
Wiring methods of Chapter 3 shall be permitted where identified for the application. An equipment grounding means shall be provided in accordance with 250.118 .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 11:21:06 EDT 2024

Committee Statement

Committee Statement: The section is revised to be inclusive of all of the wiring methods in Chapter 3. The wiring method is required to be applicable to its use. The equipment grounding means is not limited to a wire-type.

Response Message: SR-8239-NFPA 70-2024

Second Revision No. 8284-NFPA 70-2024 [New Section after 551.47(R)]

(S) Prewiring for Inverter Installation.

Prewiring installed for the purpose of future inverter installation shall comply with the following:

(1) Circuit conductors shall be based on the anticipated load as stated on the label required in 551.47(S)(4).

(2) If junction boxes are utilized at either of the circuit originating or at the termination points, the free ends of the conductors shall be capped or taped.

(3) If devices, such as receptacle outlet, are installed, the installation shall be complete, including circuit conductor connections.

(4) A safety label complying with 110.21(B) with the signal word WARNING in minimum 6-mm (¼-in.) high letters and body text in mini- mum 3-mm (⅛-in.) high letters on a contrasting background shall be affixed on the cover of each junction box containing incomplete circuitry and shall read, using one of the following warnings, as appropriate:

WARNING

INVERTER PREP

ONLY INSTALL AN INVERTER LISTED SPECIFICALLY FOR RV USE

HAVING OVERCURRENT PROTECTION RATED 110–125-VOLT AC,

60 HZ, _____ AMPERES MAXIMUM.

PLEASE ENSURE WIRING AND EQUIPMENT ARE RATED FOR THE INVERTER INPUT AND OUTPUT.

The correct ampere rating shall be legibly marked in the blank space.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 17:48:56 EDT 2024

Committee Statement

Committee Statement: The revision provides owners and service technicians notice that the RV is prewired for the installation of an inverter. The label provides information to the service technician on the rating and sizing of the pre-wire installation. The label size and description is consistent with other labels sizes in NFPA 1192.

Response Message: SR-8284-NFPA 70-2024

Second Revision No. 8244-NFPA 70-2024 [Section No. 551.71(A)]

(A) Recreational Vehicle Sites.

Every recreational vehicle site with electrical supply shall be equipped with recreational vehicle site supply equipment containing receptacles conforming to the configurations identified in Figure 551.46(C)(1). These receptacles shall ~~meet the~~ be listed as weather-resistant ~~requirements in accordance with 406~~ . ~~9(B)(1) and 406.9(B)(2)~~ . These receptacles, when used in recreational vehicle site electrical equipment, shall not be required to be tamper-resistant in accordance with 406.26.

~~Receptacles shall be listed to meet the following~~ A recreational vehicle park shall be equipped with recreational vehicle site receptacles meeting the following type and percentages :

(1) A 20-ampere, 125-volt receptacle at all sites

(2) A 30-ampere, 125-volt receptacle at a minimum of 70 percent of the sites

(3) A 50-ampere, 125/250-volt receptacle at a minimum of 40 percent of new sites and 20 percent of existing sites

Every recreational vehicle site equipped with a 50-ampere receptacle shall also be equipped with a 30-ampere, 125-volt receptacle.

Additional receptacles in accordance with 551.81 shall be permitted to be added.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 12:04:44 EDT 2024

Committee Statement

Committee Statement: The reference to Section 406.9 is deleted since the receptacles need to be listed as weather resistant.

The requirement for the percentage of receptacles has been clarified to indicate which sites require the receptacles.

Response Message: SR-8244-NFPA 70-2024 The phrase "provided in accordance with" implies that every recreational vehicle site would require a 50-amp receptacle, which is not the intent of this section.

Public Comment No. 795-NFPA 70-2024 [Section No. 551.71(A)]

Second Revision No. 8250-NFPA 70-2024 [Section No. 552.1]

552.1 Scope.

This article covers the electrical conductors and equipment installed within or on park trailers ~~not covered fully under Articles~~ ~~550~~ ~~and~~ ~~551~~ .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 13:14:33 EDT 2024

Committee Statement

Committee Statement: This article covers the electrical conductors and equipment installed within or on park trailers. It does not cover the distribution system that supplies the park trailer.

Response Message: SR-8250-NFPA 70-2024

Public Comment No. 567-NFPA 70-2024 [Section No. 552.1]

Second Revision No. 8251-NFPA 70-2024 [Section No. 552.45]

552.45 Panelboard.

(A)

~~Listed and Appropriately Rated.~~

~~A listed and appropriately rated panelboard shall be used. The grounded conductor termination bar shall be insulated from the enclosure as provided in 552.55(C) . An equipment grounding terminal bar shall be attached inside the metal enclosure of the panelboard.~~

~~**(B)** Location.~~

~~The panelboard shall be installed in a readily accessible location. Working clearance for the panelboard shall be not less than 600 mm (24 in.) wide and 750 mm (30 in.) deep.~~

~~*Exception:* *Where the panelboard cover is exposed to the inside aisle space, one of the working clearance dimensions shall be permitted to be reduced to a minimum of 550 mm (22 in.). A panelboard shall be considered exposed where the panelboard cover is within 50 mm (2 in.) of the aisle's finished surface or not more than 25 mm (1 in.) from the backside of doors that enclose the space.~~

(~~C~~ B) Dead-Front Type.

The panelboard shall be of the dead-front type. A main disconnecting means shall be provided where fuses are used or where more than two circuit breakers are employed. A main overcurrent protective device not exceeding the feeder assembly rating shall be provided where more than two branch circuits are employed.

Supplemental Information

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NEC_CMP-7SR-8251_552.45.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 13:31:07 EDT 2024

Committee Statement

Committee Statement: Listing requirements have been moved to XXX.2 section in compliance with the NEC Style Manual. The grounding terminal bar requirements are redundant with the grounding section of the article.

Response Message: SR-8251-NFPA 70-2024

Public Comment No. 587-NFPA 70-2024 [Section No. 552.45]

552.45 Panelboard.

~~(A) Listed and Appropriately Rated.~~

~~A listed and appropriately rated panelboard shall be used. The grounded conductor termination bar shall be insulated from the enclosure as provided in 552.55(C). An equipment grounding terminal bar shall be attached inside the metal enclosure of the panelboard.~~

(~~B~~A) Location.

The panelboard shall be installed in a readily accessible location. Working clearance for the panelboard shall be not less than 600 mm (24 in.) wide and 750 mm (30 in.) deep.

Exception: Where the panelboard cover is exposed to the inside aisle space, one of the working clearance dimensions shall be permitted to be reduced to a minimum of 550 mm (22 in.). A panelboard shall be considered exposed where the panelboard cover is within 50 mm (2 in.) of the aisle's finished surface or not more than 25 mm (1 in.) from the backside of doors that enclose the space.

(~~C~~B) Dead-Front Type.

The panelboard shall be of the dead-front type. A main disconnecting means shall be provided where fuses are used or where more than two circuit breakers are employed. A main overcurrent protective device not exceeding the feeder assembly rating shall be provided where more than two branch circuits are employed.

Second Revision No. 8114-NFPA 70-2024 [New Section after 555.1]

555.2 Listing Requirements.

All electrical equipment installed in areas comprising of piers, wharves, docks, floating buildings , marinas, boatyards, boat basins, boathouses, yacht clubs, or boat condominiums shall be listed.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 11:31:34 EDT 2024

Committee Statement

Committee Statement: Listing language is added in accordance with Section 2.2.1 of the NEC Style Manual. The XXX.2 section of Article 555 will address equipment unique to marina and dock installations that are required to be listed.

Response Message: SR-8114-NFPA 70-2024

Public Comment No. 590-NFPA 70-2024 [Article 555]

Second Revision No. 8197-NFPA 70-2024 [Section No. 555.6]

555.6 Load Calculations for Service and Feeder Conductors.

(A) General Lighting and Other Loads. General lighting and other loads shall be calculated in accordance with Article 120 , Part III.

(B) Demand Factors. The demand factors

~~set forth~~
in 120.120 shall be permitted for each service and/or feeder circuit supplying receptacles that provide shore power for boats.

(C) Noncoincidental Loads. Reductions for noncoincidental loads shall be permitted to be calculated in accordance with 120.6.

(D) Power Control Systems (PCS). PCS shall be permitted to be used for load calculations in accordance with 120.7.

Supplemental Information

File Name	Description	Approved
NEC_CMP-7_SR-8197_555.6.docx		

Submitter Information Verification

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Submittal Date: Mon Oct 21 17:40:17 EDT 2024

Committee Statement

Committee Statement: Section 555.6 is revised into a list format for usability. New (C) and (D) permit calculations for both noncoincidental (120.6) and PCS (120.7) loads to be considered.

Response Message: SR-8197-NFPA 70-2024

555.6 Load Calculations for Service and Feeder Conductors.

~~General lighting and other loads shall be calculated in accordance with Article 120, Part III. The demand factors set forth in 120.120 shall be permitted for each service and/or feeder circuit supplying receptacles that provide shore power for boats.~~

(A) General Lighting and Other Loads.

General lighting and other loads shall be calculated in accordance with Article 120, Part III.

(B) Demand Factors.

The demand factors ~~set forth~~ in 120.120 shall be permitted for each service and/or feeder circuit supplying receptacles that provide shore power for boats.

(C) Noncoincidental Loads.

Reductions for noncoincidental loads shall be permitted to be calculated in accordance with 120.6.

(D) Power Control Systems (PCS).

PCS shall be permitted to be used for load calculations in accordance with 120.7.

Second Revision No. 8118-NFPA 70-2024 [Section No. 555.9]

555.9 Engineered Design.

Documentation of ~~the~~ an engineered electrical design of the pier distribution system shall be provided upon request of the AHJ.

Exception: An engineered design shall not be required for one and two-family dwelling units if the system voltage is 240-volts ac, single phase, or less.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 11:43:52 EDT 2024

Committee Statement

Committee Statement: The request for a design is excluded for smaller dwelling unit installations.

Response Message: SR-8118-NFPA 70-2024

Public Comment No. 797-NFPA 70-2024 [Section No. 555.9]

Second Revision No. 8178-NFPA 70-2024 [Section No. 555.13]

555.13 Bonding of Non-Current-Carrying Metal Parts.

All ~~metal parts in contact with the water, all metal piping, and all~~ non-current-carrying metal parts that are likely to become energized shall be connected to ~~one of~~ the ~~following:. The~~ branch circuit or feeder equipment grounding conductor ~~The grounding bus in the panelboard using solid copper conductors~~ by a bonding conductor not required to be larger than 8 AWG copper conductor ; insulated, covered, or bare ~~; not smaller than 8 AWG~~ .

Connections to bonded parts shall be made in accordance with 250.8.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 16:20:28 EDT 2024

Committee Statement

Committee Statement: The text removes the reference to “all metal parts in contact with the water, all metal piping” to only require the metal parts that are “likely to become energized” to be bonded using a conductor not larger than a #8 AWG to facilitate the operation of the ground fault devices.

Response Message: SR-8178-NFPA 70-2024

Public Comment No. 156-NFPA 70-2024 [Section No. 555.13]

Public Comment No. 799-NFPA 70-2024 [Section No. 555.13]

Second Revision No. 8142-NFPA 70-2024 [Section No. 555.14]

555.14 Equipotential Planes and Bonding of Equipotential Planes.

Equipotential planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water ~~where~~ if the following conditions exist:

(1) ~~Where the~~ The system voltage exceeds 250 volts to ground

(2) ~~Where the~~ The equipment is located within 3 m (10 ft) of the body of water

(A) Equipotential Plane Construction.

Equipotential planes shall encompass the area around outdoor service equipment or disconnecting means and extend from the area directly below the equipment out not less than 900 mm (36 in.) in all directions from which a person would be able to stand and come in contact with the equipment. Bonding to equipotential planes shall be provided as specified in 555.14(A)(1) ~~or~~ through 555.14(A)(~~2~~ 4) and be attached to metallic enclosures that are likely to become energized with a solid copper conductor, insulated, covered or bare, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel.

Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

(2) Copper Grid.

Copper grid shall comply with the following requirements:

(1) Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing in accordance with 250.8 or other approved means

(2) Be arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.)

(3) ~~Only~~ Be constructed using only listed splicing devices or exothermic welding ~~permitted to be used~~

(B) Areas Not Requiring Equipotential Planes.

Equipotential planes shall not be required for the controlled utilization equipment on the docking facility or floating building supplied by the service equipment or disconnecting means.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 13:21:30 EDT 2024

Committee Statement

Committee Statement: The language in (A), as written, applied only to the service equipment. The charging language in Sections 555.14 and 555.14(B) both refer to other disconnecting means, but the language in (A) did not. The "where" to "if" language change is to comply with the NEC Style Manual. In addition, the reference was changed to include the language for unencapsulated welded wire and nonconductive surfaces added under a separate revision.

555.14(A)(2) Item (3) phrase is corrected.

Response Message: SR-8142-NFPA 70-2024

Public Comment No. 798-NFPA 70-2024 [Section No. 555.14]

Second Revision No. 8163-NFPA 70-2024 [Section No. 555.15]

555.15 Servicing and Replacing of Equipment.

Servicing or replacing of electrical ~~enclosures, devices,~~ equipment or wiring methods shall be done in accordance with 555.15(A) or 555.15(B).

~~Informational Note:~~ NFPA 303-2021, ~~*Fire Protection Standard for Marinas and Boatyards*~~ , is a resource for guiding the electrical inspection of a marina.

(A) Servicing.

Equipment that has been damaged shall be recognized, documented, and serviced by a qualified person to the edition of this code to which it was originally installed.

(B) Replacing.

When replacement of equipment is necessary, a qualified person shall document and replace the equipment in accordance with the requirements of this code. The installation shall require an inspection of the circuit. Any servicing necessary to address issues discovered during the inspection shall be done in accordance with 555.15(A).

Informational Note: NFPA 303-2021, *Fire Protection Standard for Marinas and Boatyards*, is a resource for guiding the electrical inspection of a marina.

Supplemental Information

File Name	Description	Approved
NEC_CMP-7_SR-8163_555.15.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 14:08:56 EDT 2024

Committee Statement

Committee Statement: The defined term "equipment" as added in the requirement includes enclosures, and devices. The revision correlates with the title of the section and the requirements in (A) and (B).

Response Message: SR-8163-NFPA 70-2024 Wiring methods have been retained since they may not be included in the term equipment.

Public Comment No. 29-NFPA 70-2024 [Section No. 555.15]

555.15 Servicing and Replacing of Equipment.

Servicing or replacing of electrical ~~enclosures, devices,~~equipment or wiring methods shall be done in accordance with 555.15(A) or 555.15(B).

(A) Servicing.

Equipment that has been damaged shall be recognized, documented, and serviced by a qualified person to the edition of this code to which it was originally installed.

(B) Replacing.

When replacement of equipment is necessary, a qualified person shall document and replace the equipment in accordance with the requirements of this code. The installation shall require an inspection of the circuit. Any servicing necessary to address issues discovered during the inspection shall be done in accordance with 555.15(A).

Informational Note: NFPA 303-2021, *Fire Protection Standard for Marinas and Boatyards*, is a resource for guiding the electrical inspection of a marina.

Second Revision No. 8303-NFPA 70-2024 [Section No. 555.33(B)]

(B) Other Than Shore Power.

If shore power is installed to boats, a 120-volt AC, 15- or 20-ampere, GFCI receptacle shall be installed.

Receptacles other than those supplying shore power to boats shall be permitted to be enclosed in marina power outlets with the receptacles that provide shore power to boats if the receptacles are marked to clearly indicate that they are not to be used to supply power to boats.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 19:40:07 EDT 2024

Committee Statement

Committee Statement: The revision adds a requirement to reduce the likelihood of using an adapter that would promote connections without proper GFCI protection.

Response Message: SR-8303-NFPA 70-2024

Second Revision No. 8176-NFPA 70-2024 [Section No. 555.35(A)]

(A) Feeders and Branch Circuits.

Feeders and branch circuits shall be provided with listed GFPE rated not more than 100 milliamperes (mA).

Exception No. 1: The load side conductors of a separately derived system and circuit supplying ground-fault monitoring equipment that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted to be installed without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

~~*Exception No. 2: Feeders for fire pumps shall be permitted to*~~
(B) Fire Pump Circuits

Fire pumps shall use ground-fault monitoring

~~*without disconnecting power to the fire pump*~~
in accordance with the following:

(1) The ground-fault monitor alarm shall notify upon ground faults exceeding 100 mA.

(2) The alarm shall be audible and visual.

(3) The alarm shall be located where it can be monitored by qualified personnel.

Informational Note: See 695.7(G) which prohibits GFPE in any fire pump power circuit. The wiring of a fire pump located on a dock, pier, or wharf could contribute to leakage current in the water.

Supplemental Information

File Name	Description	Approved
NEC_CMP-7_SR-8176_555.35_A_.docx		

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Oct 21 14:54:42 EDT 2024

Committee Statement

Committee Statement: Many times, if a fire pump is located on a dock, pier, or wharf the fire pump wiring could potentially contribute to leakage current in the water. Ground-fault monitoring alerts personnel in the vicinity.

Response Message: SR-8176-NFPA 70-2024

Public Comment No. 802-NFPA 70-2024 [Section No. 555.35(A)]

(A) Feeders and Branch Circuits.

Feeders and branch circuits shall be provided with listed GFPE rated not more than 100 milliamperes (mA).

Exception ~~No. 1~~: The load side conductors of a separately derived system and circuit supplying ground-fault monitoring equipment that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted to be installed without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

~~*Exception No. 2: Feeders for fire pumps shall be permitted to use ground-fault monitoring without disconnecting power to the fire pump in accordance with the following:*~~

~~*1. The ground-fault monitor alarm shall notify upon ground faults exceeding 100 mA.*~~

~~*2. The alarm shall be audible and visual.*~~

~~*3.*~~*1.* ~~*The alarm shall be located where it can be monitored by qualified personnel.*~~

(B) Fire Pump Circuits.

~~Feeders for fire~~ Fire pumps shall ~~be permitted to~~ use ground-fault monitoring ~~without disconnecting power to the fire pump~~ in accordance with the following:

1. The ground-fault monitor alarm shall notify upon ground faults exceeding 100 mA.
2. The alarm shall be audible and visual.
3. The alarm shall be located where it can be monitored by qualified personnel.

Informational Note: See 695.7(G) which prohibits GFPE in any fire pump power circuit. The wiring of a fire pump located on a dock, pier, or wharf could contribute to leakage current in the water.

Second Revision No. 8192-NFPA 70-2024 [Section No. 555.52(B)]

(B) Wiring Methods.

Liquidtight flexible metal conduit or liquidtight flexible nonmetallic conduit with approved fittings shall be permitted for feeders and where flexible connections are required for services. Extra-hard usage portable power cable listed for both wet locations and sunlight resistance shall be permitted for a feeder to a floating building where flexibility is required. Other raceways suitable for the location shall be permitted ~~to be installed~~ where flexibility is not required.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 17:28:14 EDT 2024

Committee Statement

Committee Statement: "To be installed" is removed to align with NEC Style Manual Sections 3.1.1, and 3.5.1.1

Response Message: SR-8192-NFPA 70-2024

Second Revision No. 8199-NFPA 70-2024 [Section No. 555.53]

555.53 Ground-Fault Protection.

The main ~~overcurrent protective device~~ OCPD that feeds the floating building shall have ground-fault protection not exceeding 100 mA. Ground-fault protection of each individual branch or feeder circuit shall be permitted as a suitable alternative. Outdoor outlets, shore power outlets, and boat hoists located at floating buildings shall comply with 555.35(B) and 555.35(C).

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 17:42:14 EDT 2024

Committee Statement

Committee Statement: The acronym OCPD was added and the term “overcurrent protective devices” was deleted in sections for consistency.

Response Message: SR-8199-NFPA 70-2024

Second Revision No. 8295-NFPA 70-2024 [Sections 604.100(A)(1), 604.100(A)(2)]

Sections 604.100(A)(1), 604.100(A)(2)

(1) Cables.

Cables shall be listed Type AC cables or listed Type MC cables containing nominal 600-volt, 8 AWG to 12 AWG insulated copper conductors or 6 AWG to 10 AWG insulated copper -clad aluminum ~~or copper~~ conductors. .

Other cables specified in ~~794~~ 722 .~~135~~ 122 , ~~800~~ 722 .~~113~~ 131 , ~~and830~~ and 722 .~~179~~ 134 shall be permitted in manufactured wiring systems for wiring of equipment within the scope of their respective articles.

(2) Conduits and Tubing.

Conduits and tubing shall comply with the requirements of 604.100(A)(2)(a) and 604.100(A)(2)(b).

(a) Conduits and tubing shall be listed and one of the following types:

(2) Flexible metal conduit (FMC)

(3) Liquidtight flexible metal conduit (LFMC)

(4) Liquidtight flexible nonmetallic conduit (LFNC)

(5) Electrical metallic tubing (EMT)

(f) The wiring method shall contain nominal 600-volt, 8 AWG to 12 AWG insulated copper conductors or 6 AWG to 10 AWG insulated copper -clad aluminum ~~or copper conductors with~~ conductors with a bare or insulated copper-clad aluminum or copper equipment grounding conductor equivalent in size to the ungrounded conductor.

Exception No. 1 to (1) and (2): Tap conductors for a luminaire no longer than 1.8 m (6 ft) and intended for connection to a single luminaire shall be permitted to contain conductors smaller than 12 AWG but not smaller than 18 AWG.

Exception No. 2 to (1) and (2): Listed manufactured wiring assemblies containing conductors smaller than 12 AWG shall be permitted for remote-control, signaling, or communications circuits.

Exception No. 3 to (2): Listed manufactured wiring systems containing unlisted flexible metal conduit of noncircular cross section or trade sizes smaller than permitted by 348.20(A), or both, shall be permitted where the wiring systems are supplied with fittings and conductors at the time of manufacture.

Supplemental Information

File Name	Description	Approved
NEC_CMP-7_SR-8295_604.100_A_1_.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 18:58:58 EDT 2024

Committee Statement

Committee Statement:	The size of copper clad aluminum conductors should be appropriately sized for the equivalent current carrying capacity of copper to maintain consistency throughout the NEC. The section references in (A)(1) have been revised due to changes made under separate revisions.
Response Message:	SR-8295-NFPA 70-2024

Public Comment No. 1358-NFPA 70-2024 [Sections 604.100(A)(1), 604.100(A)(2)]

[604.100(A)]

(1) Cables.

Cables shall be listed Type AC cables or listed Type MC cables containing nominal 600-volt, 8 AWG to 12 AWG insulated copper conductors or 6 AWG to 10 AWG insulated copper-clad aluminum ~~or copper~~ conductors.

Other cables specified in ~~794.135, 800.113, and830.179~~722.122, 722.131, and 722.134 shall be permitted in manufactured wiring systems for wiring of equipment within the scope of their respective articles.

(2) Conduits and Tubing.

Conduits and tubing shall comply with the requirements of 604.100(A)(2)(a) and 604.100(A)(2)(b).

1. Conduits and tubing shall be listed and one of the following types:
    1. Flexible metal conduit (FMC)
    2. Liquidtight flexible metal conduit (LFMC)
    3. Liquidtight flexible nonmetallic conduit (LFNC)
    4. Electrical metallic tubing (EMT)
2. The wiring method shall contain nominal 600-volt, 8 AWG to 12 AWG insulated copper conductors or 6 AWG to 10 AWG insulated copper-clad aluminum ~~or copper~~ conductors with a bare or insulated copper-clad aluminum or copper equipment grounding conductor equivalent in size to the ungrounded conductor.

Exception No. 1 to (1) and (2): Tap conductors for a luminaire no longer than 1.8 m (6 ft) and intended for connection to a single luminaire shall be permitted to contain conductors smaller than 12 AWG but not smaller than 18 AWG.

Exception No. 2 to (1) and (2): Listed manufactured wiring assemblies containing conductors smaller than 12 AWG shall be permitted for remote-control, signaling, or communications circuits.

Exception No. 3 to (2): Listed manufactured wiring systems containing unlisted flexible metal conduit of noncircular cross section or trade sizes smaller than permitted by 348.20(A), or both, shall be permitted where the wiring systems are supplied with fittings and conductors at the time of manufacture.

Second Revision No. 8296-NFPA 70-2024 [Sections 675.6, 675.7]

Sections 675.6, 675.7

675.6 Marking on Main Control Panels.

Main control panels shall be provided with a nameplate giving the following information:

(1) Manufacturer's name, rated voltage, phase, and frequency

(2) Current rating of the machine

(3) Rating of the main disconnecting means and size of the ~~branch-circuit overcurrent protective device~~ OCPD required

675.7 Equivalent Current Ratings.

Where intermittent duty is not involved, Article 430 shall be used for determining ratings for controllers, disconnecting means, conductors, and the like. Where irrigation machines have inherent intermittent duty, the determinations of equivalent current ratings in 675.7(A) and 675.7(B) shall be used.

(A) Continuous-Current Rating.

The equivalent continuous-current rating for the selection of branch-circuit conductors and ~~branch-circuit overcurrent protective devices~~ OCPDs shall be equal to 125 percent of the motor nameplate full-load current rating of the largest motor, plus a quantity equal to the sum of each of the motor nameplate full-load current ratings of all remaining motors on the circuit, multiplied by the maximum percent duty cycle at which they can continuously operate.

(B) Locked-Rotor Current.

The equivalent locked-rotor current rating shall be equal to the numerical sum of the locked-rotor current of the two largest motors plus 100 percent of the sum of the motor nameplate full-load current ratings of all the remaining motors on the circuit.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 19:04:00 EDT 2024

Committee Statement

Committee Statement: The acronym OCPD was added and the term "overcurrent protective devices" was deleted in sections for consistency.

Response Message: SR-8296-NFPA 70-2024

Public Comment No. 1647-NFPA 70-2024 [Global Input]

Second Revision No. 8299-NFPA 70-2024 [Section No. 675.8(B)]

(B) Main Disconnecting Means.

The main disconnecting means for the machine shall provide overcurrent protection, shall be at the point of connection of electric power to the machine, or shall be in sight from the machine in accordance with 110 .29 , and it shall be readily accessible and lockable open in accordance with 110.25. This disconnecting means shall have a horsepower and current rating not less than required for the main controller.

Exception No. 1: Circuit breakers without marked horsepower ratings shall be permitted in accordance with 430.109.

Exception No. 2: A listed molded case switch without marked horsepower ratings shall be permitted.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 19:10:40 EDT 2024

Committee Statement

Committee Statement: Revision made to add a reference to 110.29 after “in sight from” for consistency.

Response Message: SR-8299-NFPA 70-2024

Second Revision No. 8298-NFPA 70-2024 [Sections 675.16, 675.17]

Sections 675.16, 675.17

675.16 Energy from More Than One Source.

Equipment within an enclosure receiving electric energy from more than one source shall not be required to have a disconnecting means for the additional source if its voltage is 30 volts or less and it meets the requirements of Article ~~725~~ 720 , Part II.

675.17 Connectors.

External plugs and connectors on the equipment shall be weatherproof type.

Unless provided solely for the connection of circuits meeting the requirements of Article ~~725~~ 720 , Part II, external plugs and connectors shall be constructed as specified in 250.124(A).

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 19:07:40 EDT 2024

Committee Statement

Committee Statement: The installation requirements previously outlined in Section 725, Part II, are now relocated under Section 720, Part II.

Response Message: SR-8298-NFPA 70-2024

Second Revision No. 8214-NFPA 70-2024 [Section No. 682.15(B)]

(B) Feeder and Branch Circuits on Piers.

Feeder and branch-circuit conductors that are installed on piers shall be provided with ground-fault protection not exceeding 30 mA. Coordination with downstream ground-fault protection shall be permitted at the feeder ~~overcurrent protective device~~ OCPD .

Exception No. 1: Transformer secondary conductors of a separately derived ac system, operating at voltages exceeding 15 volts ac, that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted ~~to be installed~~ without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

Exception No. 2: Low-voltage circuits not requiring grounding, not exceeding the low-voltage contact limit as defined in Article 100, and supplied by listed transformers or power supplies that comply with 680.23(A)(2) shall be permitted ~~to be installed~~ without ground-fault protection.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 18:26:23 EDT 2024

Committee Statement

Committee Statement: "To be installed" is removed to align with NEC Style Manual Sections 3.1.1, and 3.5.1.1.

The acronym OCPD was added and the term "overcurrent protective devices" was deleted in sections for consistency.

Response Message: SR-8214-NFPA 70-2024

Second Revision No. 8211-NFPA 70-2024 [Section No. 682.33(A)]

(A) Equipotential Plane Construction and Bonding .

Equipotential planes shall encompass the area around outdoor service equipment and disconnecting means and extend from the area directly below the equipment out not less than 900 mm (36 in.) in all directions from which a person would be able to stand and come in contact with the equipment. Bonding to equipotential planes shall be provided as specified in 682.33(A)(1) ~~or~~ through 682.33(A)(~~2~~ 4) and be attached to metallic enclosures that are likely to become energized with a solid copper conductor, insulated, covered or bare, and not smaller than 8 AWG. Bonding connections shall be made by exothermic welding or by listed pressure connectors or clamps that are labeled as being suitable for the purpose and are stainless steel, brass, copper, or copper alloy.

(1) Structural Reinforcing Steel.

Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

(2) Copper Grids.

Copper grids shall comply with the following requirements:

(1) Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing in accordance with 250.8 or other approved means

(2) Be arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.)

(3) ~~Only~~ Be constructed using only listed splicing devices or exothermic welding ~~are permitted to be used~~

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 18:11:04 EDT 2024

Committee Statement

Committee Statement: The language in 682.33 addresses disconnecting means that are not service equipment, but existing 682.33(A) only discusses the service equipment. “Bonding” was added to the title of the section. Text for bonding connections was incorporated from (C).555.14(A)(2) Item (3) phrase is corrected.

Response Message: SR-8211-NFPA 70-2024

Public Comment No. 836-NFPA 70-2024 [Section No. 682.33(A) [Excluding any Sub-Sections]]

Second Revision No. 8212-NFPA 70-2024 [Section No. 682.33(C)]

~~(C) Bonding.~~

~~(1) Bonded Parts.~~

~~The parts specified in 682.33(C)(1) through 682.33(C)(3) shall be bonded together and to the electrical grounding system. Bonding conductors shall be solid copper, insulated, covered or bare, and not smaller than 8 AWG. Connections shall be made by exothermic welding or by listed pressure connectors or clamps that are labeled as being suitable for the purpose and are stainless steel, brass, copper, or copper alloy.~~

~~(2) Outdoor Service Equipment and Disconnects.~~

~~Outdoor service equipment or disconnecting means that control equipment in or on water, that have metallic enclosures and controls accessible to personnel, and that are likely to become energized shall be bonded to equipotential planes.~~

~~(3) Walking Surfaces.~~

~~Surfaces directly below the equipment specified in 682.33(C)(2) but not less than 900 mm (36 in.) in all directions from the equipment from which a person would be able to stand and come in contact with the equipment shall be bonded to equipotential planes with wire mesh or other conductive elements on, embedded in, or placed under the walk surface within 75 mm (3 in.).~~

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Oct 21 18:13:34 EDT 2024

Committee Statement

Committee Statement: The section is deleted because it contained redundant material with (A). Text for bonding connections was incorporated into 682.33(A).

Response Message: SR-8212-NFPA 70-2024

Second Revision No. 8305-NFPA 70-2024 [Sections Part VII., 120.120]

Sections Part VII., 120.120

Part VII. Marinas, Boatyards, Floating Buildings, and ~~Commercial and Noncommercial~~ Docking Facilities

120.120 Receptacle Loads.

General lighting and other loads in marinas, boatyards, floating buildings, and ~~commercial and noncommercial~~ docking facilities shall be calculated in accordance with Part III of this article and, in addition, the demand factors set forth in Table 120.120 shall be permitted for each service or feeder circuit supplying receptacles that provide shore power for boats. These calculations shall be permitted to be modified as indicated in Notes (1) and (2) of Table 120.120. Where demand factors of Table 120.120 are applied, the demand factor specified in 120.61(B) shall not be permitted.

Informational Note: These demand factors could be inadequate in areas of extreme hot or cold temperatures with loaded circuits for heating, air-conditioning, or refrigerating equipment.

Table 120.120 Demand Factors for Shore Power Receptacle Loads

Number of Shore Power Receptacles	Sum of the Rating of the Receptacles (%)
1–4	100
5–8	90
9–14	80
15–30	70
31–40	60
41–50	50
51–70	40
≥71	30

Notes:

1. Where shore power accommodations provide two receptacles specifically for an individual boat slip and these receptacles have different voltages (e.g., one 30-ampere, 125-volt and one 50-ampere, 125/250-volt), only the receptacle with the larger kilowatt demand shall be required to be calculated.

2. For each shore powered pedestal being installed that includes an individual kilowatt-hour submeters for each slip and is being calculated using the criteria listed in Table 220.120, the total demand amperes shall be permitted to be multiplied by 0.9 to achieve the final demand amperes of the facility.

3. If a circuit feeding a boat hoist and shore power for the same boat slip is shared, only the load with the larger kilowatt demand shall be required to be counted in the load calculation.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Oct 22 19:56:44 EDT 2024

Committee Statement

Committee Statement:	The deletion of commercial and noncommercial is consistent with the change to the title of Article 555.
Response Message:	SR-8305-NFPA 70-2024

Public Comment No. 711-NFPA 70-2024 [Part VII.]