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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 FIRST DRAFT REPORT

Document: National Electrical Code®

Revision Cycle: A2025

Meeting Dates: January 21 - 23, 2024

Panel Activity: Input Stage

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

First Revision No. 8245-NFPA 70-2024 [Detail]

Change Title of Article 555 Marinas, Boatyards, Floating Buildings, and Commercial and Noncommercial Docking Facilities to be read as Article 555 Marinas, Boatyards, Floating Buildings, and Docking Facilities

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 08:53:16 EST 2024

Committee Statement

Committee Statement: The removal of “commercial and non-commercial” from the title adds clarity. The technical committee does not have purview over the Article 555 Scope as stated in the 2023 NEC Style Manual section 2.1.4.4. The approval of article scope statements shall be the responsibility of the National Electrical Code Correlating Committee.

Response Message: FR-8245-NFPA 70-2024

Public Input No. 1487-NFPA 70-2023 [Article 555]

Public Input No. 1583-NFPA 70-2023 [Global Input]

Public Input No. 2240-NFPA 70-2023 [Article 555]

First Revision No. 8799-NFPA 70-2024 [Detail]

Add a new Title "Part VII. Recreational Vehicle Parks" above "Calculaed Load"

Move 551.73 Calculated Load to 220.130 Calculated Load

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 17:00:02 EST 2024

Committee Statement

Committee Statement: Relocate the recreational vehicle calculations to Article 220, Part VIII, titled Recreational Vehicle Park Load Calculations. The relocation is consistent with all the calculations being located in one article.

Response Message: FR-8799-NFPA 70-2024

Public Input No. 3113-NFPA 70-2023 [Section No. 551.73]

Public Input No. 3114-NFPA 70-2023 [New Section after 220.102]

First Revision No. 9037-NFPA 70-2024 [Detail]

Add a new Subsection 555.35(E) to come after the existing 555.35(D), as shown below. Revise the cross-reference in the parent text of 555.35 to read "…in accordance with 555.35(A) through (E)."

555.35

(E) Coordination and Performance Testing.

The GFPE protection system 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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Wed Jan 24 20:48:29 EST 2024

Committee Statement

Committee Statement: Coordination of electrical system(s) is necessary to ensure the operation and functionality of the marina. This requirement that all GFPE devices be coordinated will ensure that devices upstream of a fault continue to operate, so as to not interrupt power of the entire marina electrical system.

To reduce the likelihood of electrical shock drownings, the GFPE protective equipment used in marina environments shall be tested by a qualified individual to ensure compliance with 555.35(A), and to verify that the marina branch circuits and feeders are properly coordinated.

Response Message: FR-9037-NFPA 70-2024

Public Input No. 4435-NFPA 70-2023 [New Section after 555.35(D)]

Public Input No. 4066-NFPA 70-2023 [New Section after 555.35(D)]

First Revision No. 8424-NFPA 70-2024 [Definition: Equipotential Plane.]

~~**Equipotential Plane.**~~

~~Conductive parts bonded together to reduce voltage gradients in a designated area. (682) (CMP-17)~~

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 09:52:47 EST 2024

Committee Statement

Committee Statement: This definition was deleted to comply with the NEC Style Manual Section 2.1.2.7 regarding multiple definitions for the same term.

Response Message: FR-8424-NFPA 70-2024

Public Input No. 3033-NFPA 70-2023 [Definition: Equipotential Plane.]

Public Input No. 1800-NFPA 70-2023 [Definition: Equipotential Plane.]

First Revision No. 8439-NFPA 70-2024 [Definition: Voltage, Low. (Low Voltage).]

Voltage, Low. (Low Voltage).

An electromotive force rated 24 volts, nominal, or less. (~~551~~ 552) (CMP-7)

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 10:50:18 EST 2024

Committee Statement

Committee Statement: While the definition is no longer necessary for 551, it is applicable to Article 552, as the thresholds for low-voltage circuits are not identified in Article 552.

Response Message: FR-8439-NFPA 70-2024

Public Input No. 2283-NFPA 70-2023 [Definition: Voltage, Low. (Low Voltage).]

First Revision No. 8668-NFPA 70-2024 [New Section after 545.1]

545.2 Listing Requirements.

All raceways, cable wiring methods and fittings shall be listed. Other wiring systems specifically identified for use in manufactured buildings shall be listed and provided with listed fittings.

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Tue Jan 23 10:31:51 EST 2024

Committee Statement

Committee Statement: The section was reorganized to comply with the NEC Style Manual, Section 2.2.1.
Response Message: FR-8668-NFPA 70-2024

Public Input No. 2796-NFPA 70-2023 [New Section after 545.1]

First Revision No. 8669-NFPA 70-2024 [Section No. 545.4]

~~(B)~~

545.4 ~~Wiring Methods.~~

(A) ~~Methods Permitted.~~

~~All raceway and cable wiring methods included in this *Code* and other wiring systems specifically intended and listed for use in manufactured buildings shall be permitted with listed fittings and with fittings listed and identified for manufactured buildings.~~

4 Securing Cables.

In closed construction, cables shall be permitted to be secured only at cabinets, boxes, or fittings where 10 AWG or smaller conductors are used and protection against physical damage is provided.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8669_545.4.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 10:37:10 EST 2024

Committee Statement

Committee Statement: The section was revised to comply with the NEC Style Manual, Section 2.2.1.

Response Message: FR-8669-NFPA 70-2024

Public Input No. 2795-NFPA 70-2023 [Section No. 545.4]

545.4 ~~Wiring Methods~~Securing Cables.
In closed construction, cables shall be permitted to be secured only at cabinets, boxes, or fittings where 10 AWG or smaller conductors are used and protection against physical damage is provided.

~~**(A) Methods Permitted.**~~
~~All raceway and cable wiring methods included in this *Code* and other wiring systems specifically intended and listed for use in manufactured buildings shall be permitted with listed fittings and with fittings listed and identified for manufactured buildings.~~

~~**(B) Securing Cables.**~~ **[Move to main section]**
~~In closed construction, cables shall be permitted to be secured only at cabinets, boxes, or fittings where 10 AWG or smaller conductors are used and protection against physical damage is provided.~~

First Revision No. 8670-NFPA 70-2024 [Section No. 545.22(D)]

(D) Grounding.

~~**(1)** Feeders.~~

~~The feeder(s) shall be grounded in accordance with Parts I, II, and III of Article 250 .~~

~~**(2)** Two or More Relocatable Structures.~~

~~Where two or more relocatable structures are structurally connected to form a single unit, and a common grounding electrode conductor and tap arrangement as specified in 250.64(D)(1) is utilized, it shall be permitted to use the chassis bonding conductor specified in 545.26 as the tap conductor.~~

The equipment grounding conductor shall be sized in accordance with 250.122. Any installed grounded conductor shall not be connected to the equipment grounding conductor.

The feeder(s) shall be grounded in accordance with Article 250, Parts I and II.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8670_545.22_D_.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 10:41:12 EST 2024

Committee Statement

Committee Statement: The added language clarifies the equipment grounding sizing requirement and addresses the need to separate grounded and grounding conductors. Section (D)(2) is deleted and relocated to Section 545.26 as the intent is bonding and not grounding. This first revision also corrects the Style Manual issue in the former Section (D)(1) and is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts.

Response Message: FR-8670-NFPA 70-2024

Public Input No. 2758-NFPA 70-2023 [Section No. 545.22(D)]

Public Input No. 2040-NFPA 70-2023 [Section No. 545.22(D)]

(D) Grounding.

The feeder(s) shall be grounded in accordance with Article 250, Parts I~~, II,~~ and ~~III of Article 250~~II.

~~**(1) Feeders.**~~ **[Move text to (D)]**

~~The feeder(s) shall be grounded in accordance with Parts I, II, and III of Article 250.~~

~~**(2) Two or More Relocatable Structures.**~~

~~Where two or more relocatable structures are structurally connected to form a single unit, and a common grounding electrode conductor and tap arrangement as specified in 250.64(D)(1) is utilized, it shall be permitted to use the chassis bonding conductor specified in 545.26 as the tap conductor.~~

First Revision No. 8675-NFPA 70-2024 [Section No. 545.24(B)]

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

Branch-circuit distribution equipment shall be installed in each relocatable structure and shall include a branch circuit overcurrent protection device 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 Jan 23 10:55:47 EST 2024

Committee Statement

Committee Statement: The terms “overcurrent protection” and “branch-circuit protective equipment” were revised to “branch circuit overcurrent protective devices” to be consistent with the defined term. This change was made in accordance with the recommendation of Global PI 4050.

Response Message: FR-8675-NFPA 70-2024

First Revision No. 8672-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 panelboard. A bonding conductor shall be connected between the panelboard and an accessible terminal on the chassis. Chassis of mutiple relocatable structure 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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 10:47:22 EST 2024

Committee Statement

Committee Statement: The proposed language clarifies the bonding requirement for more than two structures and was relocated from the former 545.22(D)(2).

Response Message: FR-8672-NFPA 70-2024

Public Input No. 2041-NFPA 70-2023 [Section No. 545.26]

First Revision No. 8677-NFPA 70-2024 [Sections 547.3, 547.4]

[Move 547.3 to be 547.5 after 547.4 , also there were additional edits made in section 547.4]

Sections 547.3, 547.4

547.3 ~~–~~ **5** Other Articles.

For buildings and structures not having conditions as specified in 547.1, the electrical installations shall be made in accordance with the applicable articles in this *Code*.

547.4 Surface Temperatures.

Electrical equipment or devices installed in accordance with this article shall be installed in a manner such that they will function at full rating without developing surface temperatures in excess of the specified normal safe operating range of the equipment or device.

Informational Note: See ~~Part III of~~ Article 502, Part III, for use of equipment in ~~Class 2~~ Class II locations.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 11:02:00 EST 2024

Committee Statement

Committee Statement: Move 547.3 to new 547.5 and delete 547.3 to comply with parallel numbering format required in the NEC Style Manual, Section 2.2, for Numbering Conventions.

The text is revised to comply with the NEC

Style Manual Section 4.1.4, regarding the use of Parts and the clarification of Class II (not Class 2) hazardous location.

Response Message: FR-8677-NFPA 70-2024

Public Input No. 4173-NFPA 70-2023 [Section No. 547.4]

Public Input No. 2759-NFPA 70-2023 [Section No. 547.4]

First Revision No. 8683-NFPA 70-2024 [Section No. 547.23]

547.23 Damp or Wet Locations.

In damp or wet locations, equipment enclosures, boxes, conduit bodies, and fittings shall be placed or equipped so as to prevent moisture from entering or accumulating within the enclosure, box, conduit body, or fitting.

In wet locations, including normally dry or damp locations where surfaces are periodically washed or sprayed with water, boxes, conduit bodies, equipment enclosures, and fittings shall be listed for use in wet locations~~, and equipment enclosures shall be weatherproof~~ .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 11:14:47 EST 2024

Committee Statement

Committee Statement: Splitting the requirement into two paragraphs to increase usability instead of using a list format to comply with NEC Style Manual 3.5.1.1 .

Response Message: FR-8683-NFPA 70-2024

Public Input No. 4185-NFPA 70-2023 [Section No. 547.23]

First Revision No. 8691-NFPA 70-2024 [Section No. 547.28]

547.28 Ground-Fault Circuit-Interrupter Protection.

Ground-fault circuit-interrupter (GFCI) protection shall be provided as required in 210.8(B)for areas of agricultural buildings not included in the scope of this article. GFCI protection shall not be required for other than 125-volt AC , 15- and 20-ampere receptacles installed within the following areas:

(1) Areas requiring an equipotential plane

(2) Outdoors

(3) Damp or wet locations

(4) Dirt confinement areas for livestock

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 11:32:58 EST 2024

Committee Statement

Committee Statement: The word "AC" was added in accordance with the recommendation of Global PI 4287. Clearly identified requirements which are not applicable to DC circuits by incorporating “AC” terminology as applicable per the Correlating Committee DC Task Group.

Response Message: FR-8691-NFPA 70-2024

First Revision No. 8695-NFPA 70-2024 [Section No. 547.40]

547.40 Electrical Supply to Building(s) or Structure(s) from a Distribution Point.

Any agricultural building or structure for livestock located on the same premises shall be supplied from a distribution point. More than one distribution point on the same premises shall be permitted.

Any existing agricultural building or structure for other than livestock not under the scope of ~~Article 547~~ - this article shall be permitted to be supplied in accordance with 250.32(B)(1), Exception No. 1.

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Tue Jan 23 11:43:18 EST 2024

Committee Statement

Committee Statement: Revision made to comply with Section 4.1.4 of the NEC® Style Manual
Response Message: FR-8695-NFPA 70-2024

Public Input No. 1152-NFPA 70-2023 [Section No. 547.40]

First Revision No. 8707-NFPA 70-2024 [Section No. 547.41(A)(5)]

(5) Rating.

The site-isolating device shall be rated for the calculated load as determined by ~~Part V of~~ Article 220 , Part V .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 13:01:51 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. The article number shall precede the part number.

Response Message: FR-8707-NFPA 70-2024

Public Input No. 2760-NFPA 70-2023 [Section No. 547.41(A)(5)]

First Revision No. 8714-NFPA 70-2024 [Section No. 547.41(B)]

(B) Service Disconnecting Means and Overcurrent Protection at the Building(s) or Structure(s).

Where the service disconnecting means and overcurrent protection are located at the building(s) or structure(s), the requirements of 547.41(B)(1) through (B)(3) shall apply.

(1) Conductor Sizing.

The supply conductors shall be sized in accordance with ~~Part V of~~ Article 220 , Part V .

(2) Conductor Installation.

The supply conductors shall be installed in accordance with ~~Part II of~~ Article 225 , Part II .

(3) Grounding and Bonding.

For each building or structure, grounding and bonding of the supply conductors shall be in accordance with 250.32, and the following conditions shall be met:

(1) The equipment grounding conductor is not smaller than the largest supply conductor if of the same material or is adjusted in size in accordance with the equivalent size columns of Table 250.122 if of different materials.

(2) The equipment grounding conductor is connected to the grounded circuit conductor and the site-isolating device enclosure at the distribution point.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 13:06:32 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. The article number shall precede the part number.

Response Message: FR-8714-NFPA 70-2024

Public Input No. 2761-NFPA 70-2023 [Section No. 547.41(B)]

First Revision No. 8717-NFPA 70-2024 [Section No. 547.42]

547.42 Service Disconnecting Means and Overcurrent Protection at the Distribution Point.

The service disconnecting means and overcurrent protection for each set of feeders or branch circuits shall be located at the distribution point. The service disconnecting means shall be installed in accordance with ~~Part VI of~~ Article 230 , Part VI . The feeders or branch circuits supplied to buildings or structures shall comply with 250.32 and Article 225, Parts I and II.

Informational Note: Methods to reduce neutral-to-earth voltages in livestock facilities include supplying buildings or structures with 4-wire single-phase services, sizing 3-wire single-phase service and feeder conductors to limit voltage drop to 2 percent, and connecting loads line-to-line, will provide reasonable efficiency of operation.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 13:09:56 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. The article number shall precede the part number.

Response Message: FR-8717-NFPA 70-2024

Public Input No. 2762-NFPA 70-2023 [Section No. 547.42]

First Revision No. 8722-NFPA 70-2024 [Section No. 547.44]

547.44 Equipotential Planes and Bonding of Equipotential Planes.

The installation and bonding of equipotential planes shall comply with 547.44(A) ~~and~~ through (~~B~~ C). For the purposes of this section, the term *livestock* shall not include poultry.

(A) Where Required.

Equipotential planes shall be required in the following areas:

(1) Indoors.

Equipotential planes shall be installed in confinement areas with concrete floors where metallic equipment is located that may become energized and is accessible to livestock.

(2) Outdoors.

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

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

(B) Bonding.

Equipotential planes shall be bonded to the grounding electrode system or an equipment grounding terminal in any enclosed panelboard of the electrical grounding system associated with the equipotential plane. The bonding conductor shall be solid copper, insulated, covered or bare, and not smaller than 8 AWG. The means of bonding to wire mesh or conductive elements shall be by pressure connectors or clamps of brass, copper, copper alloy, or other approved means. Slatted floors that are supported by structures that are a part of an equipotential plane shall not require bonding.

Informational Note No. 1: See ASEA/ASABE EP473.2-2001 (R2015), *Equipotential Planes in Animal Containment Areas*, for methods to establish equipotential planes.

Informational Note No. 2: See ASEA/ASABE EP342.3-2010 (R2015), *Safety for Electrically Heated Livestock Waterers*, for methods for safe installation of livestock waterers.

Informational Note No. 3: Low grounding electrode system resistances may reduce voltage differences in livestock facilities.

(C) Equipotential Plane Construction.

The equipotential plane shall be constructed as specified in 547.44(C)(1) or (C)(2).

(1) *Structural Reinforcing Steel* . Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

(2) *Copper Grid* . A copper grid shall be permitted where the following requirements are met:

(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) 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.)

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 13:19:45 EST 2024

Committee Statement

Committee Statement: The changes incorporate similar equipotential bonding requirements from section 680.26 for consistency. Additional text provides detail on how the equipotential plane is to be constructed and bonded to the electrical system. For correlation, section 547.44 was revised to match the section 555.14 and 682.33 requirements.

Response Message: FR-8722-NFPA 70-2024

Public Input No. 2076-NFPA 70-2023 [Section No. 547.44(B)]

First Revision No. 8444-NFPA 70-2024 [New Section after 550.1]

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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 11:02:17 EST 2024

Committee Statement

Committee Statement: In accordance with 2.2.1 of the NEC Style Manual, the section for "Listing Requirements" is renamed and relocated from 550.4(C) to Section 550.2.

Response Message: FR-8444-NFPA 70-2024

Public Input No. 2798-NFPA 70-2023 [New Section after 550.1]

First Revision No. 8445-NFPA 70-2024 [Section No. 550.1]

550.1 Scope.

This article covers the 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 ~~NFPA 501-2017, *Standard on Manufactured Housing* , and Part 3280, Manufactured Home~~ 24 CRF Part 3280, *Manufactured H ome Construction and Safety Standards*, of the Federal Department of Housing and Urban Development for additional information on manufactured housing.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 11:07:02 EST 2024

Committee Statement

Committee Statement: NFPA 501 has been withdrawn as of April 13, 2022. For ease in locating the Manufactured Home Construction and Safety Standards, the most complete reference on this is 24 CFR Part 3280; therefore, a reference to this CFR is added as a replacement to NFPA 501.

Response Message: FR-8445-NFPA 70-2024

Public Input No. 1767-NFPA 70-2023 [Section No. 550.1]

First Revision No. 8545-NFPA 70-2024 [Section No. 550.4]

550.4 General Requirements.

(A) In Other Than Mobile Home Parks.

Mobile homes installed in other than mobile home parks shall comply with the provisions of this article.

(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.

~~**(C)** Listed and Labeled.~~

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

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 16:11:55 EST 2024

Committee Statement

Committee Statement: Relocated the 550.4(C) “listing requirements” to section 550.2 as directed in 2.2.1 Parallel Number Requirements of the NEC Style Manual.

Response Message: FR-8545-NFPA 70-2024

Public Input No. 2797-NFPA 70-2023 [Section No. 550.4]

First Revision No. 8450-NFPA 70-2024 [Section No. 550.10(B)]

(B) Power-Supply Cord.

If the 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 power-supply cord is handled in its intended manner.

The 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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 11:27:25 EST 2024

Committee Statement

Committee Statement: The cord itself needs to be connected to the ENCLOSURE for the panelboard. The junction box would not be connected to the panelboard (busbars) it would be connected to the panelboard ENCLOSURE. This revision clarifies the intent.

Response Message: FR-8450-NFPA 70-2024

Public Input No. 239-NFPA 70-2023 [Section No. 550.10(B)]

First Revision No. 8461-NFPA 70-2024 [Section No. 550.10(I)]

(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) ~~A rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, or other raceways identified for the location,~~ Raceways from the disconnecting means in the mobile home to the underside of the mobile home, with provisions for the 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:

(a) Rigid metal Conduit

(b) Intermediate Metal Conduit

(c) Rigid Polyvinyl Chloride Conduit

(d) 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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 12:03:29 EST 2024

Committee Statement

Committee Statement: A list item format helps facilitate understanding and usability for Code users and is consistent with section 3.5.1.2 of the NFPA Style Manual. The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. References to specific parts within articles shall be permitted. The article number shall precede the part number.

Response Message: FR-8461-NFPA 70-2024

Public Input No. 1511-NFPA 70-2023 [Section No. 550.10(I)]

First Revision No. 8463-NFPA 70-2024 [Section No. 550.12(D)]

(D) General Appliances.

(Including furnace, water heater, range, and central or room air conditioner, etc.). 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 550.18(B)(5).

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 12:15:13 EST 2024

Committee Statement

Committee Statement: Applicable Parts of Article 440 are identified to comply with 4.1.4 of the NEC Style Manual.

Response Message: FR-8463-NFPA 70-2024

Public Input No. 1153-NFPA 70-2023 [Section No. 550.12(D)]

First Revision No. 8465-NFPA 70-2024 [Section No. 550.13(B)]

(B) Ground-Fault Circuit Interrupters (GFCI).

Ground-fault circuit-interrupter protection shall be provided as required in 210.8~~(A)~~ . ~~In addition, in the following areas within a mobile or manufactured home, GFCI protection is limited to 125-volt, 15- and 20-ampere receptacles or outlets:~~

- ~~Compartments accessible from outside the unit~~
- ~~Bathrooms, including receptacles in luminaires~~
- ~~Kitchens, where receptacles are installed to serve countertop surfaces~~
- ~~Sinks, where receptacles are installed within 1.8 m (6 ft) from the top inside edge of the sink~~
- ~~Dishwashers~~

~~Informational Note: See 422.5 (A) for information on protection of dishwashers.~~

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8465_550.13_B_.docx		

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Jan 22 12:19:03 EST 2024

Committee Statement

Committee Statement: Mobile and Manufactured Homes include the same electric shock risks as other dwelling units. Requirements in 210.8, which applies generally to “Dwelling Units” should apply to installations covered by Article 550, Part II.

Response Message: FR-8465-NFPA 70-2024

Public Input No. 2519-NFPA 70-2023 [Section No. 550.13(B)]

(B) Ground-Fault Circuit Interrupters (GFCI).

Ground-fault circuit-interrupter protection shall be provided as required in 210.8~~(A)~~. ~~In addition, in the following areas within a mobile or manufactured home, GFCI protection is limited to 125-volt, 15- and 20-ampere receptacles or outlets:~~

1. ~~Compartments accessible from outside the unit~~
2. ~~Bathrooms, including receptacles in luminaires~~
3. ~~Kitchens, where receptacles are installed to serve countertop surfaces~~
4. ~~Sinks, where receptacles are installed within 1.8 m (6 ft) from the top inside edge of the sink~~
5. ~~Dishwashers~~

~~Informational Note: See 422.5(A) for information on protection of dishwashers.~~

First Revision No. 8474-NFPA 70-2024 [Section No. 550.15(F)]

(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. ~~Rigid nonmetallic conduit, electrical nonmetallic tubing, or surface raceway shall be permitted. All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges.~~

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Jan 22 12:40:51 EST 2024

Committee Statement

Committee Statement: The allowance for using Chapter 1-4 wiring methods is covered in 550.15.
Response Message: FR-8474-NFPA 70-2024

Public Input No. 1509-NFPA 70-2023 [Section No. 550.15(F)]

First Revision No. 8509-NFPA 70-2024 [Section No. 550.18 [Excluding any Sub-Sections]]

The following method 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- ~~and~~ , Parts I through IV, shall 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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 14:52:50 EST 2024

Committee Statement

Committee Statement: 4.1.4 References to a Part Within an Article. Except for Article 100, references shall not be made to an entire article. References to parts within articles shall be permitted.

The words "AC only" were added in accordance with the recommendation of Global PI 4287. Clearly identified requirements which are not applicable to DC circuits by incorporating “AC only” terminology as applicable per the Correlating Committee DC Task Group.

Response Message: FR-8509-NFPA 70-2024

Public Input No. 1158-NFPA 70-2023 [Section No. 550.18 [Excluding any Sub-Sections]]

First Revision No. 8518-NFPA 70-2024 [Section No. 550.32(A)]

(A) Mobile Home Service Equipment.

The mobile home service equipment shall not be mounted in or on the mobile home. The service equipment shall be rated not less than that required in accordance with 550.32(C)~~,~~ ~~mounted in a readily accessible outdoor location, and~~ and mounted within sight from the mobile home it serves. The installation of the service equipment shall comply with Article 230, Part I through Part VII. The mobile home service disconnect shall be permitted to be used as the emergency disconnect in accordance with 230.85.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 15:15:43 EST 2024

Committee Statement

Committee Statement: Revised the text to include the “general requirements” for service equipment for consistency. The deleted text would be covered by the requirements Part V of Article 230.

Response Message: FR-8518-NFPA 70-2024

Public Input No. 2043-NFPA 70-2023 [Section No. 550.32(A)]

First Revision No. 8523-NFPA 70-2024 [Section No. 550.32(B)]

(B) Manufactured Home Service Equipment.

The manufactured home service equipment shall be permitted to be installed in or on a manufactured home, provided that 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 ~~of Article 230~~ .

(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 be in accordance with Article 250, Part I through Part V ~~of Article 250~~ .

(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 shall be mounted on or adjacent to the service equipment. The label shall meet the requirements in 110.21(B) and shall state the following:

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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 15:21:50 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. References to specific parts within articles shall be permitted. The article number shall precede the part number.

Response Message: FR-8523-NFPA 70-2024

Public Input No. 1159-NFPA 70-2023 [Section No. 550.32(B)]

Public Input No. 2763-NFPA 70-2023 [Section No. 550.32(B)]

First Revision No. 8514-NFPA 70-2024 [New Section after 550.32(D)]

[Created a new letter "E', renumber according for rest of 550.32]

(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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 15:02:47 EST 2024

Committee Statement

Committee Statement: The new language would address the replacement of an existing mobile or manufactured home and require a surge protective device at the service disconnect. All “dwelling units” shall have the same protections in place for the life safety signaling devices.

Response Message: FR-8514-NFPA 70-2024

Public Input No. 2044-NFPA 70-2023 [Section No. 550.32]

First Revision No. 8532-NFPA 70-2024 [Section No. 550.32(E)]

~~(E~~ **[Renumber from "E" to "F" per earlier revision to add new "E"]**

(F)_ Additional Receptacles on Service Equipment .

Receptacles located outside a mobile or manufactured home shall be provided with ground-fault circuit-interrupter protection as specified by 210.8(A). Where receptacles provide power to a mobile or manufactured home in accordance with 550.10, ground-fault circuit-interrupter protection shall not be required.

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Jan 22 15:42:40 EST 2024

Committee Statement

Committee Statement: The title of the section was revised to add clarity to the requirements in the section.
Response Message: FR-8532-NFPA 70-2024

Public Input No. 1510-NFPA 70-2023 [Section No. 550.32(E)]

First Revision No. 8556-NFPA 70-2024 [Section No. 551.4(C)]

(C) Labels.

Labels required by ~~Article~~ ~~551~~ - this artcile shall be made of etched, metal-stamped, or embossed brass; stainless steel; plastic laminates not less than 0.13 mm (0.005 in.) thick; or anodized or alclad aluminum not less than 0.5 mm (0.020 in.) thick or the equivalent.

Informational Note: See ANSI Z535.4-2011, *Product Safety Signs and Labels*, for guidance on other label criteria used in the recreational vehicle industry.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 16:28:24 EST 2024

Committee Statement

Committee Statement: Section 4.1.4 of the NEC® style manual prohibits referencing an entire article with the exception of Article 100 or where required for context. In this case, simply altering the text to "this article" complies with the style manual requirement without changing the meaning of the current rule.

Response Message: FR-8556-NFPA 70-2024

Public Input No. 1160-NFPA 70-2023 [Section No. 551.4(C)]

First Revision No. 8552-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 Parts I, II, and IV of this article 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. ~~To determine the converter rating, the following percentages shall be applied to the total connected load, including average battery-charging rate, of all 12-volt equipment:~~

~~The first 20 amperes of load at 100 percent plus~~

~~The second 20 amperes of load at 50 percent plus~~

~~All load 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 as a connected load when determining the required converter rating. 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 Jan 22 16:20:12 EST 2024

Committee Statement

Committee Statement: The removed text refers to technology that is now obsolete. Linear converters previously had a separate charging circuit which is why they were required to have the Average Battery Charging Rate included in converter sizing.

Response Message: FR-8552-NFPA 70-2024

Public Input No. 3137-NFPA 70-2023 [Section No. 551.20(B)]

First Revision No. 8565-NFPA 70-2024 [Section No. 551.40(D)]

(D) ~~– Loss of Ground Device.~~

~~Each recreational vehicle~~

Grounding Monitor Interrupter.

Recreational vehicles with a 30- or 50-ampere feeder assembly shall have a listed 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.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8565_551.40_D_.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 17:00:08 EST 2024

Committee Statement

Committee Statement: The term “loss of ground device” has been updated to “grounding monitor interrupter” to align with the new UL Standard for Grounding Monitor Interrupters, UL 2299, has been submitted for publication, and includes requirements that evaluate the ability of the equipment to provide the proper detection and interruption of circuits with compromised grounding. There is no standard for an “Electrical Management System”, which is the equipment intended to replace the Ground Monitor Interrupter as identified in the Public Input. Product standards that only evaluate equipment for shock and fire hazards are not sufficient for evaluating equipment where the functionality is relied upon to perform a safety function. 551.40(C) already explains the requirements for 15- and 20-amperes.

Response Message: FR-8565-NFPA 70-2024

Public Input No. 3982-NFPA 70-2023 [Section No. 551.40(D)]

Public Input No. 3229-NFPA 70-2023 [Section No. 551.40(D)]

(D) ~~Loss of Ground Device~~Grounding Monitor Interrupter.
Recreational vehicles with a 30- or 50-ampere feeder assembly~~Each recreational vehicle~~ shall have a listed 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.

First Revision No. 8573-NFPA 70-2024 [Section No. 551.46(A) [Excluding any Sub-Sections]]

The feeder assembly ~~or assemblies~~ shall be factory supplied or factory installed and be of one of the types specified herein.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 17:24:21 EST 2024

Committee Statement

Committee Statement: RVs are only allowed to have one feeder assembly as referenced in 551.44 Power Supply Assembly.

Response Message: FR-8573-NFPA 70-2024

Public Input No. 3134-NFPA 70-2023 [Section No. 551.46(A) [Excluding any Sub-Sections]]

First Revision No. 8578-NFPA 70-2024 [Section No. 551.46(B)]

(B) Cord.

The cord exposed usable length shall be measured from the point of entrance to the recreational vehicle or the face of the flanged surface inlet (motor-base attachment plug) to the face of the attachment plug at the supply end.

The cord exposed usable length, measured to the point of entry on the vehicle exterior, shall be a minimum of 7.5 m (25 ft) where the point of entrance is at the side of the vehicle or shall be a minimum 9.0 m (30 ft) where the point of entrance is at the rear of the vehicle.

Where the cord entrance into the vehicle is more than 900 mm (3 ft) above the ground, the minimum cord lengths above shall be increased by the vertical distance of the cord entrance heights above 900 mm (3 ft).

Informational Note: See 551.46(E) for location of point of entrance of a ~~power-supply~~ feeder assembly on the recreational vehicle exterior.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 17:32:21 EST 2024

Committee Statement

Committee Statement: Definition for power-supply assembly was changed in the 2023 edition to feeder assembly.

Response Message: FR-8578-NFPA 70-2024

First Revision No. 8576-NFPA 70-2024 [Section No. 551.46(C)(4)]

(4) Units with 50-Ampere ~~Power-Supply~~ Feeder Assembly.

Recreational vehicles having a ~~power-supply~~ feeder assembly rated 50 amperes as permitted by 551.42(D) shall have a 3-pole, 4-wire grounding-type attachment plug rated 50 amperes, 125/250 volts, conforming to the configuration shown in Figure 551.46(C)(1).

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14.50, for complete details of this configuration.

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Jan 22 17:28:41 EST 2024

Committee Statement

Committee Statement: Definition for power-supply assembly was changed in the 2023 edition to feeder assembly.
Response Message: FR-8576-NFPA 70-2024

Public Input No. 3135-NFPA 70-2023 [Section No. 551.46(C)(4)]

First Revision No. 8580-NFPA 70-2024 [Section No. 551.46(E)]

(E) Location.

The point of entrance of a ~~power-supply~~ feeder assembly shall be located within 4.5 m (15 ft) of the rear, on the left (road) side or at the rear, left of the longitudinal center of the vehicle, within 450 mm (18 in.) of the outside wall.

Exception No. 1: A recreational vehicle equipped with only a listed flexible drain system or a side-vent drain system shall be permitted to have the electrical point of entrance located on either side, provided the drain(s) for the plumbing system is (are) located on the same side.

Exception No. 2: A recreational vehicle shall be permitted to have the electrical point of entrance located more than 4.5 m (15 ft) from the rear. Where this occurs, the distance beyond the 4.5-m (15-ft) dimension shall be added to the cord's minimum length as specified in 551.46(B).

Exception No. 3: Recreational vehicles designed for transporting livestock shall be permitted to have the electrical point of entrance located on either side or the front.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 17:35:31 EST 2024

Committee Statement

Committee Statement: Definition for power-supply assembly was changed in the 2023 edition to feeder assembly.

Response Message: FR-8580-NFPA 70-2024

Public Input No. 3136-NFPA 70-2023 [Section No. 551.46(E)]

First Revision No. 8583-NFPA 70-2024 [Section No. 551.47(A)]

(A) Wiring Systems.

~~Cables and raceways installed in accordance with Articles~~ 320 ~~,~~ 322 ~~,~~ 330 ~~through~~ 340 ~~,~~ 342 ~~through~~ 362 ~~,~~ 386 ~~, and~~ 388 ~~shall be permitted in accordance with their applicable article, except~~ Except as otherwise specified in this article~~. An equipment grounding means shall be provided~~ , the wiring methods in 551.47(A)(1) through 551.47(A)(8) shall be permitted to be installed within a recreational vehicle. The wiring method shall inlcude an equipment grounding conductor in accordance with 250.118 .

(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

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 17:39:30 EST 2024

Committee Statement

Committee Statement: Language was rewritten for clarity and usability and to address the two NEC Style Manual issues. 3.5.2 Lists and Tables states that, “If possible, lists or tables to present requirements shall be used, rather than long text descriptions.” 4.1.4 References to an Entire Article states that, “References shall not be made to an entire article, except for the Article 100 or where referenced to provide the necessary context.”

Response Message: FR-8583-NFPA 70-2024

Public Input No. 1161-NFPA 70-2023 [Section No. 551.47(A)]

Public Input No. 1775-NFPA 70-2023 [Section No. 551.47(A)]

First Revision No. 8587-NFPA 70-2024 [Section No. 551.47(P)(1)]

(1) Cord-and-Plug-Connected.

Cord-and-plug connections shall comply with 551.47(P)(1)(a) through (P)(1)(d).

(a) That portion of a branch circuit that is installed in an expandable unit shall be permitted to be connected to the portion of the branch circuit in the main body of the vehicle by means of an attachment plug and cord listed for hard usage. The cord and its connections shall comply with Article 400, Part I and Part II, as applicable, ~~of Article 400~~ and ~~shall~~ be considered as a permitted use under 400.10. Where the attachment plug and cord are located within the vehicle's interior, use of plastic thermoset or elastomer parallel cord Type SPT-3, SP-3, or SPE shall be permitted.

(b) Where the receptacle provided for connection of the cord to the main circuit is located on the outside of the vehicle, it shall be protected with a ground-fault circuit interrupter for personnel and be listed for wet locations. A cord located on the outside of a vehicle shall be identified for outdoor use.

(c) Unless removable or stored within the vehicle interior, the cord assembly shall have permanent provisions for protection against corrosion and mechanical damage while the vehicle is in transit.

(d) The attachment plug and cord shall be installed so as not to permit exposed live attachment plug pins.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 17:58:31 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. References to specific parts within articles shall be permitted. The article number shall precede the part number.

Response Message: FR-8587-NFPA 70-2024

Public Input No. 2764-NFPA 70-2023 [Section No. 551.47(P)(1)]

First Revision No. 8657-NFPA 70-2024 [Section No. 551.71]

~~551.71~~ [Deleting "B" - "C "and renumber with a revised "A", please renumber accordingly]

551.71 AC Only Type Receptacles Provided.

(A)

~~20-Ampere~~
Recreational Vehicle Sites .

Every recreational vehicle site with electrical supply shall be equipped with recreational vehicle site supply

~~equipment with at least one 20-ampere, 125-volt weather-resistant receptacle. This receptacle~~ equipment containing receptacles conforming to the configurations identified in Figure 551.46(C)(1). These receptacles shall meet the weather-resistant requirements in accordance with 406.9(B)(1) and (B)(2). These receptacles , when used in recreational vehicle site electrical equipment, shall not be required to be tamper-resistant in accordance with 406.12 .

~~(B)~~ ~~30-Ampere.~~

~~A minimum of 70 percent of all recreational vehicle sites with electrical supply shall each be equipped with a~~
Receptacles shall be listed to meet the following:

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

(2) A 30-ampere, 125-volt

~~weather~~
-
~~resistant receptacle conforming to Figure 551.46(C)(1) . This supply shall be permitted to include additional receptacle configurations conforming to 551.81 . The remainder of all recreational vehicle sites with electrical supply shall be equipped with one or more of the receptacle configurations conforming to 551.81 .~~

~~(C)~~ ~~50-Ampere.~~

~~A minimum of 20 percent of existing and 40 percent of all new recreational vehicle sites with electrical supply, shall each be equipped with a~~
receptacle at a minimum of 70 percent of the sites

(3) A 50-ampere, 125/250-volt

~~weather~~
-
~~resistant receptacle conforming to the configuration as identified in Figure 551.46(C)(1) .~~
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

~~conforming to Figure 551.46(C)(1) . These electrical supplies shall be permitted to include additional receptacles that have configurations~~

.

Additional receptacles in accordance with 551.81

~~. The weather-resistant requirement for 50-ampere, 125/250-volt receptacles shall become effective January 1, 2026. Informational Note: The percentage of 50 ampere sites required by~~

~~551.71 could be inadequate for seasonal recreational vehicle sites serving a higher percentage of recreational vehicles with 50-ampere electrical systems. In that type of recreational vehicle park, the percentage of 50-ampere sites could approach 100 percent.~~
are permitted to be added.

(D) Tent Sites.

Dedicated tent sites with a 15- or 20-ampere electrical supply shall be permitted to be excluded when determining the percentage of recreational vehicle sites with 30- or 50-ampere receptacles.

(E) Additional Receptacles.

Additional receptacles shall be permitted for the connection of electrical equipment outside the recreational vehicle within the recreational vehicle park.

(F) GFCI Protection.

(1) Receptacles Installed in Other Than Recreational Vehicle Site Equipment.

Ground-fault circuit-interrupter protection shall be provided as required in 210.8(B).

(2) Receptacles Installed in Recreational Vehicle Site Equipment.

Ground-fault circuit-interrupter protection shall only be required for 125-volt, single-phase, 15- and 20-ampere receptacles.

Informational Note No. 1: Appliances used within the recreational vehicle can create leakage current levels at the supply receptacle(s) that could exceed the limits of a Class A GFCI device.

Informational Note No. 2: The definition of *Feeder Assembly* clarifies that the power supply cord to a recreational vehicle is considered a feeder.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8657_551.71.docx		

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Tue Jan 23 09:49:23 EST 2024

Committee Statement

Committee Statement: receptaclesArticle 551.71(A) was rewritten for clarity and usability. A list item format helps facilitate understanding and usability for Code users and is consistent with Section 3.5.1.2 of the NFPA Style Manual.

PI 1766 – Submitter placed recommended changes in the incorrect receptacle subarticle. Furthermore, the 70% requirement is meant to prevent of minimize the use of non listed receptacle adapters.

PI 1550 – NEC Style Manual prohibits use of SHOULD and mandates the use of SHALL. The 20% and 40% requirements are meant to prevent of minimize the use of non listed receptacle adapters

The words "AC only" were added in accordance with the recommendation of Global PI 4287.

Response Message: FR-8657-NFPA 70-2024

Public Input No. 1766-NFPA 70-2023 [Section No. 551.71(B)]

Public Input No. 1550-NFPA 70-2023 [Section No. 551.71(C)]

551.71 Type Receptacles Provided.

(A) ~~20-Ampere~~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)~~with at least one 20-ampere, 125-volt weather-resistant receptacle~~. These receptacles shall meet the weather-resistant requirements in accordance with 406.9(B)(1) and (B)(2). These receptacles~~This receptacle~~, when used in recreational vehicle site electrical equipment, shall not be required to be tamper-resistant in accordance with 406.12.

Receptacles shall be listed to meet the following:

(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 are permitted to be added.

~~**(B) 30-Ampere.**~~
~~A minimum of 70 percent of all recreational vehicle sites with electrical supply shall each be equipped with a 30-ampere, 125-volt weather-resistant receptacle conforming to Figure 551.46(C)(1). This supply shall be permitted to include additional receptacle configurations conforming to 551.81. The remainder of all recreational vehicle sites with electrical supply shall be equipped with one or more of the receptacle configurations conforming to 551.81.~~

~~**(C) 50-Ampere.**~~
~~A minimum of 20 percent of existing and 40 percent of all new recreational vehicle sites with electrical supply, shall each be equipped with a 50-ampere, 125/250-volt weather-resistant receptacle conforming to the configuration as identified in Figure 551.46(C)(1). Every recreational vehicle site equipped with a 50-ampere receptacle shall also be equipped with a 30-ampere, 125-volt receptacle conforming to Figure 551.46(C)(1). These electrical supplies shall be permitted to include additional receptacles that have configurations in accordance with 551.81. The weather-resistant requirement for 50-ampere, 125/250-volt receptacles shall become effective January 1, 2026.~~

~~Informational Note: The percentage of 50-ampere sites required by 551.71 could be inadequate for seasonal recreational vehicle sites serving a higher percentage of recreational vehicles with~~

~~50-ampere electrical systems. In that type of recreational vehicle park, the percentage of 50-ampere sites could approach 100 percent.~~

(~~D~~B) Tent Sites.
Dedicated tent sites with a 15- or 20-ampere electrical supply shall be permitted to be excluded when determining the percentage of recreational vehicle sites with 30- or 50-ampere receptacles.

(~~E~~C) Additional Receptacles.
Additional receptacles shall be permitted for the connection of electrical equipment outside the recreational vehicle within the recreational vehicle park.

(~~F~~D) GFCI Protection.

(1) Receptacles Installed in Other Than Recreational Vehicle Site Equipment.
Ground-fault circuit-interrupter protection shall be provided as required in 210.8(B).

(2) Receptacles Installed in Recreational Vehicle Site Equipment.
Ground-fault circuit-interrupter protection shall only be required for 125-volt, single-phase, 15- and 20-ampere receptacles.

Informational Note No. 1: Appliances used within the recreational vehicle can create leakage current levels at the supply receptacle(s) that could exceed the limits of a Class A GFCI device.

Informational Note No. 2: The definition of *Feeder Assembly* clarifies that the power supply cord to a recreational vehicle is considered a feeder.

First Revision No. 8589-NFPA 70-2024 [Section No. 551.72(D)]

(D) Neutral Conductors.

~~Neutral conductors shall be~~ Feeder and branch circuit neutral conductors installed for recreational vehicle park distribution shall be sized in accordance with 551.72(D)(1) and 551.72(D)(2).

(1) Feeders and supplying permanently conncted loads, ancillary structures or buildings shall be permitted to be reduced in size ~~below the minimum required size of the ungrounded conductors for 240-volt, line-to-line, permanently connected loads only. The neutral conductors~~ accordance with 220.61.

(2) Feedersand branch-circuits supplying recreational site distribution shall not be reduced in size ~~below~~ smaller than the size of the ungrounded conductors ~~for the site distribution~~ .

Informational Note: Due to the long circuit lengths typical in most recreational vehicle parks, feeder conductor sizes found in the ampacity tables ~~of Article~~ 310 elsewhere in this code could be inadequate to maintain the voltage regulation suggested in 215.2(A), Informational Note No. 2. Total circuit voltage drop is a sum of the voltage drops of each serial circuit segment, where the load for each segment is calculated using the load that segment sees and the demand factors shown in Table 551.73(A).

Informatonal Note: Conductors for feeders, as defined in Artcile 100, sized to prevent a voltage drop exceeding 3 percent at the farthest outlet of power, heatng, and lighting loads, or combinations of such loads, and 5 percent, will provide reasonable effciency of operation.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8589_551.72_D_.docx		

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Jan 22 18:39:02 EST 2024

Committee Statement

Committee Statement: The requirement has been restructured into a list for increased usability and clarity. Additionally, the informational note has been revised in accordance with Section 4.1.4 of the NEC® Style Manual, which prohibits referencing an entire article.

Response Message: FR-8589-NFPA 70-2024

Public Input No. 1162-NFPA 70-2023 [Section No. 551.72(D)]

Public Input No. 2047-NFPA 70-2023 [Section No. 551.72(D)]

(D) Neutral Conductors. [Move IN under (2)]

~~Neutral conductors shall be permitted to be reduced in size below the minimum required size of the ungrounded conductors for 240-volt, line-to-line, permanently connected loads only. The neutral conductors shall not be reduced in size below the size of the ungrounded conductors for the site distribution.~~Feeder and branch circuit neutral conductors installed for recreational vehicle park distribution shall be sized in accordance with 551.72(D)(1) and 551.72(D)(2).

~~Informational Note: Due to the long circuit lengths typical in most recreational vehicle parks, feeder conductor sizes found in the ampacity tables of Article 310could be inadequate to maintain the voltage regulation suggested in 215.2(A), Informational Note No. 2. Total circuit voltage drop is a sum of the voltage drops of each serial circuit segment, where the load for each segment is calculated using the load that segment sees and the demand factors shown in Table 551.73(A).~~

(1)

Feeders and supplying permanently connected loads, ancillary structures or buildings shall be permitted to be reduced in size accordance with 220.61.

(2)

Feeders and branch-circuits supplying recreational site distribution shall not be reduced in size smaller than the size of the ungrounded conductors.

Informational Note No 1: Due to the long circuit lengths typical in most recreational vehicle parks, feeder conductor sizes found in the ampacity tables ~~of Article 310could~~elsewhere in this code could be inadequate to maintain the voltage regulation suggested in 215.2(A), Informational Note No. 2. Total circuit voltage drop is a sum of the voltage drops of each serial circuit segment, where the load for each segment is calculated using the load that segment sees and the demand factors shown in Table 551.73(A).

Informational Note No. 2: Conductors for feeders, as defined in Article 100, sized to prevent a voltage drop exceeding 3 percent at the farthest outlet of power, heating, and lighting loads, or combinations of such loads, and 5 percent, will provide reasonable efficiency of operation.

First Revision No. 8590-NFPA 70-2024 [Section No. 551.72(E)]

~~**(E)** Connected Devices.~~

~~The use of listed surge protective devices shall be permitted.~~

~~Informational Note: Use of multiple autotransformers on the load side of RV pedestals, supplied by a single feeder, can result in increased current on the RV park or campground distribution system.~~

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:04:30 EST 2024

Committee Statement

Committee Statement: Permission to use an SPD is not needed, and the Informational Note is referencing unrelated device and the NEC cannot control what gets plugged into a receptacle..

Response Message: FR-8590-NFPA 70-2024

Public Input No. 639-NFPA 70-2023 [Section No. 551.72(E)]

First Revision No. 8591-NFPA 70-2024 [Section No. 551.73(B)]

(B) Demand Factors.

The demand factor for a given number of sites shall apply to all sites ~~indicated~~ .

Informational Note No.1: For example, 20 sites calculated at 45 percent of 3600 volt-amperes results in a permissible demand of 1620 volt-amperes per site or a total of 32,400 volt-amperes for 20 sites.

Informational Note No. 2 : These demand factors may be inadequate in areas of extreme hot or cold temperature with loaded circuits for heating or air conditioning.

Table 551.73(A) Demand Factors for Site Feeders and Service-Entrance Conductors for Park Sites

Number of Recreational Vehicle Sites	Demand Factor (%)
1	100
2	90
3	80
4	75
5	65
6	60
7–9	55
10–12	50
13–15	48
16–18	47
19–21	45
22–24	43
25–35	42
36 plus	41

Loads for other amenities such as, but not limited to, service buildings, recreational buildings, and swimming pools shall be calculated separately and then be added to the value calculated for the recreational vehicle sites where they are all supplied by a common service.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8591_551.73_B_.docx		

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Jan 22 19:17:37 EST 2024

Committee Statement

Committee Statement: This language is explanatory and therefore needs to be in an Informational Note.

Response Message: FR-8591-NFPA 70-2024

Public Input No. 638-NFPA 70-2023 [Section No. 551.73(B)]

(B) Demand Factors. [Move text as IN no. 1]

The demand factor for a given number of sites shall apply to all sites ~~indicated~~. ~~For example, 20 sites calculated at 45 percent of 3600 volt-amperes results in a permissible demand of 1620 volt-amperes per site or a total of 32,400 volt-amperes for 20 sites.~~

Informational Note No. 1: For example, 20 sites calculated at 45 percent of 3600 volt-amperes results in a permissible demand of 1620 volt-amperes per site or a total of 32,400 volt-amperes for 20 sites.

Informational Note No. 2: These demand factors may be inadequate in areas of extreme hot or cold temperature with loaded circuits for heating or air conditioning.

Table 551.73(A) Demand Factors for Site Feeders and Service-Entrance Conductors for Park Sites

Number of Recreational Vehicle Sites	Demand Factor (%)
1	100
2	90
3	80
4	75
5	65
6	60
7–9	55
10–12	50
13–15	48
16–18	47
19–21	45
22–24	43
25–35	42
36 plus	41

Loads for other amenities such as, but not limited to, service buildings, recreational buildings, and swimming pools shall be calculated separately and then be added to the value calculated for the recreational vehicle sites where they are all supplied by a common service.

First Revision No. 8592-NFPA 70-2024 [Section No. 551.74]

551.74 Overcurrent Protection.

Overcurrent protection shall be provided ~~in accordance with Article~~ ~~240~~ as required elsewhere in this Code .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:22:44 EST 2024

Committee Statement

Committee Statement: Section 4.1.4 of the NEC® Style Manual prohibits referencing an entire article except Article 100 or where required for context. The text is revised to state "as required elsewhere in this Code" here in lieu of the reference to Article 240.

Response Message: FR-8592-NFPA 70-2024

Public Input No. 1163-NFPA 70-2023 [Section No. 551.74]

First Revision No. 8593-NFPA 70-2024 [Section No. 551.79]

551.79 Clearance for Overhead Conductors.

Open conductors of not over 1000 volts ac , 1500 volts dc, nominal, shall have a vertical clearance of not less than 5.5 m (18 ft) and a horizontal clearance of not less than 900 mm (3 ft) in all areas subject to recreational vehicle movement. In all other areas, clearances shall conform to 235.360 and 235.361.

~~Informational Note: See 235.360 and 235.361 , for clearances of conductors over 600 volts, nominal.~~

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:26:03 EST 2024

Committee Statement

Committee Statement: Requirements are revised to include the same voltage demarcation used in many places throughout the Code. The informational note is removed as the sections of the Code are already stated in the requirement above.

Response Message: FR-8593-NFPA 70-2024

Public Input No. 2430-NFPA 70-2023 [Section No. 551.79]

First Revision No. 8594-NFPA 70-2024 [Section No. 551.80(B)]

(B) Protection Against Physical Damage.

Direct-buried conductors and cables entering or leaving a trench shall be protected by rigid metal conduit, intermediate metal conduit, electrical metallic tubing with supplementary corrosion protection, rigid polyvinyl chloride conduit (PVC), nonmetallic underground conduit with conductors (NUCC), high density polyethylene conduit (HDPE), reinforced thermosetting resin conduit (RTRC), liquidtight flexible nonmetallic conduit, liquidtight flexible metal conduit, or other approved raceways or enclosures. Where subject to physical damage, the conductors or cables shall be protected by rigid metal conduit, intermediate metal conduit, Schedule 80 PVC conduit, or RTRC listed for exposure to physical damage. All such protection shall extend at least 450 mm (18 in.) into the trench from finished grade.

Informational Note: See 300.5 and Article 340, Part II, for conductors or Type UF cable used underground or in direct burial in earth.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:35:06 EST 2024

Committee Statement

Committee Statement: Section 4.1.4 of the NEC® Style Manual prohibits referencing an entire article other than Article 100 or where required for context. The user is directed to Article 340, Part II, as that would covers the uses permitted and uses not permitted, in this application, along with the bending radius and the ampacity.

Response Message: FR-8594-NFPA 70-2024

Public Input No. 1164-NFPA 70-2023 [Section No. 551.80(B)]

First Revision No. 8595-NFPA 70-2024 [Section No. 552.1]

552.1 Scope.

~~The provisions of this article cover~~ 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: Mon Jan 22 19:40:43 EST 2024

Committee Statement

Committee Statement: The phrase "the provisions of" is removed here in accordance with 4.1.3 of the NEC® Style Manual. Section 4.1.4 of the NEC® Style manual prohibits references to an entire article except Article 100 and where required for context. The references here to Articles 550 and 551 are left as is "for context" and no changes are recommended to that portion of the text. 2023 NEC Style Manual section 2.1.4.4. The approval of article scope statements shall be the responsibility of the National Electrical Code Correlating Committee.

Response Message: FR-8595-NFPA 70-2024

Public Input No. 1165-NFPA 70-2023 [Section No. 552.1]

First Revision No. 8596-NFPA 70-2024 [Section No. 552.4]

552.4 General Requirements.

A park trailer is intended for seasonal use. It is not intended as a permanent dwelling unit or for commercial uses such as banks, clinics, offices, or similar. Units designed for such purposes are classified as relocatable structures and are covered in ~~Part II of~~ Article 545, Part II .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:45:34 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. References to specific parts within articles shall be permitted. The article number shall precede the part number.

Response Message: FR-8596-NFPA 70-2024

Public Input No. 2765-NFPA 70-2023 [Section No. 552.4]

First Revision No. 8601-NFPA 70-2024 [Section No. 552.5]

552.5 Labels.

Labels required by ~~Article 552~~ this article shall be made of etched, metal-stamped, or embossed brass or stainless steel; plastic laminates not less than 0.13 mm (0.005 in.) thick; or anodized or alclad aluminum not less than 0.5 mm (0.020 in.) thick or the equivalent.

Informational Note: See ANSI Z535.4-2011, *Product Safety Signs and Labels*, for guidance on other label criteria used in the park trailer industry.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 20:02:50 EST 2024

Committee Statement

Committee Statement: Section 4.1.4 of the NEC® Style Manual prohibits reference to an entire article with the exception of Article 100 or where required for context.

Response Message: FR-8601-NFPA 70-2024

Public Input No. 1166-NFPA 70-2023 [Section No. 552.5]

First Revision No. 8597-NFPA 70-2024 [Section No. 552.43(B)]

(B) Power-Supply Cord.

If the park trailer 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's enclosure , with the free end terminating in a molded-on attachment plug cap.

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

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

The cord shall be a listed type with 3-wire, 120-volt or 4-wire, 120/240-volt 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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:48:25 EST 2024

Committee Statement

Committee Statement: The cord itself needs to be connected to the ENCLOSURE for the panelboard. The junction box would not be connected to the panelboard (busbars) it would be connected to the panelboard ENCLOSURE. This revision clarifies the intent.

Response Message: FR-8597-NFPA 70-2024

Public Input No. 240-NFPA 70-2023 [Section No. 552.43(B)]

First Revision No. 8598-NFPA 70-2024 [Section No. 552.43(C)]

(C) 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 one of the following:

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

(2) A rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, or other raceways identified for the location from the disconnecting means in the park trailer to the underside of the park trailer

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:53:40 EST 2024

Committee Statement

Committee Statement: Section 4.1.4 of the NEC® Style Manual prohibits reference to an entire article with the exception of Article 100 or where required for context.

Response Message: FR-8598-NFPA 70-2024

Public Input No. 1167-NFPA 70-2023 [Section No. 552.43(C)]

First Revision No. 8599-NFPA 70-2024 [Section No. 552.46(B)(3)]

(3) General Appliances.

(including furnace, water heater, space heater, range, and central or room air conditioner, etc.) An individual branch circuit shall be permitted to supply any load for which it is rated. There shall be one or more circuits of adequate rating in accordance with 552.46(B)(3)(a) through (B)(3)(d).

Informational Note No. 1: See 210.11(C)(2) for laundry branch circuit.

Informational Note No. 2: See Article 440, Parts I through VI, for central air conditioning.

(a) The total rating of fixed appliances shall not exceed 50 percent of the circuit rating if lighting outlets, general-use receptacles, or both are also supplied.

(b) For fixed appliances with a motor(s) larger than ⅛ horsepower, the total calculated load shall be based on 125 percent of the largest motor plus the sum of the other loads. Where a branch circuit supplies continuous load(s) or any combination of continuous and noncontinuous loads, the branch-circuit conductor size shall be in accordance with 210.19(A).

(c) The rating of a single cord-and-plug-connected appliance supplied by other than an individual branch circuit shall not exceed 80 percent of the circuit rating.

(d) The rating of a range branch circuit shall be based on the range demand as specified for ranges in 552.47(B)(5).

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:56:34 EST 2024

Committee Statement

Committee Statement: Section 4.1.4 of the NEC® Style Manual prohibits reference to an entire article with the exception of Article 100 or where required for context.

Response Message: FR-8599-NFPA 70-2024

Public Input No. 1168-NFPA 70-2023 [Section No. 552.46(B)(3)]

First Revision No. 8600-NFPA 70-2024 [Section No. 552.48(O)(1)]

(1) Cord-and-Plug Connected.

Cord-and-plug connections shall comply with 552.48(O)(1)(a) through (O)(1)(d).

(a) The portion of a branch circuit that is installed in an expandable unit shall be permitted to be connected to the portion of the branch circuit in the main body of the vehicle by means of an attachment plug and cord listed for hard usage. The cord and its connections shall comply with Article 400, Parts I and II ~~of Article~~ 400 and ~~shall~~ be considered as a permitted use under 400.10. Where the attachment plug and cord are located within the park trailer's interior, use of plastic thermoset or elastomer parallel cord Type SPT-3, SP-3, or SPE shall be permitted.

(b) Where the receptacle provided for connection of the cord to the main circuit is located on the outside of the park trailer, it shall be protected with a ground-fault circuit interrupter for personnel and be listed for wet locations. A cord located on the outside of a park trailer shall be identified for outdoor use.

(c) Unless removable or stored within the park trailer interior, the cord assembly shall have permanent provisions for protection against corrosion and mechanical damage while the park trailer is in transit.

(d) The attachment plug and cord shall be installed so as not to permit exposed live attachment plug pins.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 19:59:18 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. References to specific parts within articles shall be permitted. The article number shall precede the part number.

Response Message: FR-8600-NFPA 70-2024

Public Input No. 2766-NFPA 70-2023 [Section No. 552.48(O)(1)]

First Revision No. 8266-NFPA 70-2024 [Section No. 555.1]

555.1 Scope.

This article covers the installation of wiring and equipment in the areas comprising fixed or floating piers, wharves, docks, floating buildings, and other areas in marinas, boatyards, boat basins, boathouses, yacht clubs, boat condominiums, docking facilities associated with one-family dwellings, two-family dwellings, multifamily dwellings, and residential condominiums; any multiple docking facility or similar occupancies; and facilities that are used, or intended for use, for the purpose of repair, berthing, launching, storage, or fueling of small craft and the moorage of floating buildings.

Informational Note No. 1: See NFPA 303-2016, *Fire Protection Standard for Marinas and Boatyards,* for additional information.

Informational Note No. 2: Where boats, floating buildings, docks, and similar structures are connected to an electrical source or a supply of electricity, hazardous voltages and currents may create serious safety concerns.

~~Informational Note No. 3: Text that is followed by a reference in brackets has been extracted from NFPA 303-2016, *Fire Protection Standard for Marinas and Boatyards* , and NFPA 307-2016, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves* . Only editorial changes were made to the extracted text to make it consistent with this *Code* .~~

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 09:49:54 EST 2024

Committee Statement

Committee Statement: The language regarding extracts is no longer necessary due to the relocation of the definitions in the 2023 NEC. The information regarding extracts is covered under the Scope of Article 100.

Response Message: FR-8266-NFPA 70-2024

First Revision No. 8786-NFPA 70-2024 [Sections 555.3, 555.4]

[Move section 555.3 and associated subsections to 555.16 and move 555.4 to 555.17]

Sections 555.3, 555.4

555.3 Electrical Datum Plane Distances.

(A) Floating Piers.

The electrical datum plane for floating piers and boat landing stages that is (1) installed to permit rise and fall response to water level and without lateral movement, and (2) that are so equipped that piers and landing stages can rise to the datum plane established for 555.3(B) or (C), shall be a horizontal plane 762 mm (30 in.) above the water level at the floating pier or boat landing stage and a minimum of 305 mm (12 in.) above the level of the deck.

(B) Areas Subject to Tidal Fluctuations.

In land areas subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane that is 606 mm (2 ft) above the highest tide level for the area occurring under normal circumstances, based on the highest high tide.

(C) Areas Not Subject to Tidal Fluctuations.

In land areas not subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane that is 606 mm (2 ft) above the highest water level for the area occurring under normal circumstances.

555.4 Location of Service Equipment.

The service equipment for a floating building, dock, or marina shall be located on land no closer than 1.5 m (5 ft) horizontally from and adjacent to the structure served, but not on or in the structure itself or any other floating structure. Service equipment shall be elevated a minimum of 300 mm (12 in.) above the electrical datum plane.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 15:53:09 EST 2024

Committee Statement

Committee Statement: 555.3 and 555.4 were moved down to become a new 555.16 and 555.17 to comply with the parallel numbering format required in the NEC Style Manual Section 2.2 for Numbering Conventions.

Response Message: FR-8786-NFPA 70-2024

First Revision No. 8370-NFPA 70-2024 [Section No. 555.5]

555.5 Maximum Voltage - AC Only .

Pier power distribution systems shall not exceed ~~250 volts~~ 600 volts phase to phase. ~~Pier power distribution systems, where qualified personnel service the equipment under engineering supervision, shall be permitted to exceed 250 volts but these systems shall not exceed 600 volts.~~

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 16:17:27 EST 2024

Committee Statement

Committee Statement: Deleted the language “not to exceed 250 volts phase to phase” and replaced the text with the higher voltage threshold which is consistent with distribution systems at docking facilities and piers. The change to allow the higher voltage system or threshold is also due to a new section that will require engineering design and documentation for all distribution systems regardless of voltage up to 600 volts phase to phase. Clearly identified requirements which are not applicable to DC circuits by incorporating “AC Only” as applicable per PI 4287 submitted by the Correlating Committee DC Task Group.It is noted that requirements for DC installations are also necessary. Additional information is needed to determine the parameters for these DC installations. A task group will be appointed to prepare a public comment on this topic for the second draft meeting.

Public Input No. 3927-NFPA 70-2023 [Section No. 555.5]

First Revision No. 8270-NFPA 70-2024 [Section No. 555.6]

555.6 Load Calculations for Service and Feeder Conductors.

General lighting and other loads shall be calculated in accordance with ~~Part III of~~ Article 220, Part III, and, in addition, the demand factors set forth in 220.120 shall be permitted for each service and/or feeder circuit supplying receptacles that provide shore power for boats.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 09:53:00 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. The article number shall precede the part number.

Response Message: FR-8270-NFPA 70-2024

Public Input No. 2767-NFPA 70-2023 [Section No. 555.6]

First Revision No. 8382-NFPA 70-2024 [New Section after 555.8]

555 .9 Engineered Design.

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

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 16:53:29 EST 2024

Committee Statement

Committee Statement: Engineering and design documentation will minimize potential hazards.

Response Message: FR-8382-NFPA 70-2024

First Revision No. 8315-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 ~~and that are not connected to a~~ shall be connected to one of the following:

(1) The branch circuit or feeder equipment grounding conductor, ~~shall be connected to the~~

(2) The grounding bus in ~~the~~ an enclosed- panelboard using ~~solid~~ copper conductors; insulated, covered, or bare; not smaller than 8 AWG. Connections to bonded parts shall be made in accordance with 250.8.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8315_555.13.docx		

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Sun Jan 21 13:08:02 EST 2024

Committee Statement

Committee Statement: PI 3258: The revisions to the text improve clarity and usability in accordance with 2.1.8.3 of the NEC Style Manual.

PI 2235: Including “of the wire type” is already addressed under wiring methods in section 555.34(A)(1).

PI 2077: Included the term “enclosed panelboard” to be consistent with the new definition added to Article 100 during the 2023 NEC cycle.

PI 1476: The bonding connection can be terminated in any enclosed panelboard that supplies the docking facility. Stating that it must be located in the nearest enclosed panelboard does not add clarity.

PI 3924: Allowing stranded conductors would allow more flexibility on a moving structure, especially regarding the routing of bonding conductors.

Response Message: FR-8315-NFPA 70-2024

Public Input No. 3924-NFPA 70-2023 [Section No. 555.13]

Public Input No. 1476-NFPA 70-2023 [Section No. 555.13]

Public Input No. 3258-NFPA 70-2023 [Section No. 555.13]

Public Input No. 2235-NFPA 70-2023 [Section No. 555.13]

Public Input No. 2077-NFPA 70-2023 [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 ~~and that are not connected to a branch circuit or feeder equipment grounding conductor,~~ shall be connected to ~~the grounding bus in the panelboard using solid copper conductors; insulated, covered, or bare; not smaller than 8 AWG. Connections to bonded parts shall be made in accordance with 250.8.~~one of the following:

(1) The branch circuit or feeder equipment grounding conductor

(2) The grounding bus in the panelboard using solid copper conductors; insulated, covered, or bare; not smaller than 8 AWG. Connections to bonded parts shall be made in accordance with 250.8.

First Revision No. 8321-NFPA 70-2024 [Section No. 555.14]

555.14 Equipotential Planes and Bonding of Equipotential Planes.

~~An equipotential plane shall be installed where required in this section to mitigate step and touch voltages at electrical equipment. The parts specified in this section shall be bonded together and to the electrical grounding system. The bonding conductor shall be solid copper conductors; insulated, covered, or bare; not smaller than 8 AWG.~~

~~**(A)** Areas Requiring~~ Equipotential ~~Planes.Equipotential~~ planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water where the following conditions exist:

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

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

~~The equipotential plane shall include all metallic enclosures and controls that are likely to become energized and are accessible to personnel.~~
(A) Equipotential Plane Construction.

The equipotential plane shall encompass the area around the outdoor service equipment and shall 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 551.14(A)(1) or (A)(2) and be attached to metallic enclosures that are likely to become energized with a solid copper, insulated, covered, or bare, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel. Unencapsulated structural reinforcing steel bonded together by steel tie wires or the equivalent.

(2) Copper Grid. Copper grid where the following requirements are met:

(a) 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

(b) 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.)

(c) Only listed splicing devices or exothermic welding are 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.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8321_555.14.docx		

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Sun Jan 21 13:26:20 EST 2024

Committee Statement

Committee Statement:	The changes incorporate similar equipotential bonding requirements from Section 680.26 for consistency. Additional text provides detail on how the equipotential plane is to be constructed and bonded to the electrical system. For correlation, Section 682.33 and 547.44(B) were revised to match the section 555.14 requirements.
Response Message:	FR-8321-NFPA 70-2024

Public Input No. 3257-NFPA 70-2023 [Section No. 555.14]

555.14 Equipotential Planes and Bonding of Equipotential Planes.

~~An equipotential plane shall be installed where required in this section to mitigate step and touch voltages at electrical equipment. The parts specified in this section shall be bonded together and to the electrical grounding system. The bonding conductor shall be solid copper conductors; insulated, covered, or bare; not smaller than 8 AWG.~~Equipotential planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water where the following conditions exist:

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

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

(A) ~~Areas Requiring~~ Equipotential Plane~~s~~ Construction. [Move text up to list to main section]

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

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

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

~~The equipotential plane shall include all metallic enclosures and controls that are likely to become energized and are accessible to personnel.~~ The equipotential plane shall encompass the area around the outdoor service equipment and shall 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 551.14(A)(1) or (A)(2) and be attached to metallic enclosures that are likely to become energized with a solid copper, insulated, covered, or bare, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel.

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

(2) Copper Grid.

Copper grid where the following requirements are met:

(a) 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

(b) 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.)

(c) Only listed splicing devices or exothermic welding are 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.

First Revision No. 8410-NFPA 70-2024 [Section No. 555.15]

555.15 ~~Replacement~~ 15 Servicing and Replacing of Equipment.

~~When modifications~~ Servicing or ~~replacements~~ replacing of electrical enclosures, devices, or wiring methods ~~are necessary on a docking facility, they~~ shall be ~~required to comply with the requirements of this~~ *Code* , ~~and the installation shall require an inspection of the circuit. Existing equipment~~ done in accordance with 555.15(A) or (B).

(A) Servicing.

Equipment that has been damaged shall be ~~identified~~ recognized , documented, and ~~repaired~~ serviced by a qualified person to the ~~minimum requirements~~ edition of the ~~edition of this~~ *Code* to which it was originally installed.

(B) Replacing.

When replacement of equipment is necessary, it shall be documented and replaced by a qualified person to the requirements of this *Code* , and 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_CMP7_FR-8410_555.15.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 08:55:20 EST 2024

Committee Statement

Committee Statement: Equipment that is replaced must be installed per the current edition of the code. However, the requirement for the remainder of the branch circuit or feeder to be inspected and serviced under their originally installed code, if necessary, is to reduce the likelihood that other parts of an existing installation could contribute to electrical hazards.

Response Message: FR-8410-NFPA 70-2024

Public Input No. 548-NFPA 70-2023 [Section No. 555.15]

Public Input No. 1774-NFPA 70-2023 [Section No. 555.15]

Public Input No. 362-NFPA 70-2023 [Section No. 555.15]

Public Input No. 1913-NFPA 70-2023 [Section No. 555.15]

555.15 ~~Replacement~~ Servicing and Replacing of Equipment. [Move last line to (A)]

~~When modifications~~Servicing or ~~replacements~~ replacing of electrical enclosures, devices, or wiring methods ~~are necessary on a docking facility, they~~ shall be ~~required to comply with the requirements of this *Code*, and the installation shall require an inspection of the circuit~~done in accordance with 555.15(A) or 555.15(B). ~~Existing equipment that has been damaged shall be identified, documented, and repaired by a qualified person to the minimum requirements of the edition of this *Code* to which it was originally installed.~~

~~Informational Note: NFPA 303-2021, *Fire Protection Standard for Marinas and Boatyards*, is a resource for guiding the electrical inspection of a marina.~~ **[Move IN under (B)]**

(A) Servicing.

~~Existing equipment~~Equipment that has been damaged shall be ~~identified~~recognized, documented, and ~~repaired~~ serviced by a qualified person to the ~~minimum requirements of the~~ edition of ~~this~~ the *Code* to which it was originally installed.

(B) Replacing.

When replacement of equipment is necessary, it shall be documented and replaced by a qualified person to the requirements of this *Code*, and 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.

First Revision No. 8333-NFPA 70-2024 [Section No. 555.30]

555.30 Electrical Equipment and Connections.

(A) General.

(1) Location. All electrical components within electrical equipment (excluding wiring methods) and connections not intended for operation while submerged shall be located at least 305 mm (12 in.) above the deck of a fixed or floating structure, but not below the electrical datum plane.

(2) Wiring Connectors. Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required for floating structures where located above the waterline but below the electrical datum plane.

(B) Replacements.

(1) Location. Replacement electrical connections shall be located at least 305 mm (12 in.) above the deck of a floating or fixed structure.

(2) Wiring Connectors. Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required where located above the waterline but below the electrical datum plane.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8333_555.30.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 14:05:32 EST 2024

Committee Statement

Committee Statement: Revised the language to clarify that components and terminations “electrical components within” electrical equipment are required to be at least 12” above the deck – not the entire electrical equipment enclosure. In addition, changed (A) and (B) into a list item format to facilitate understanding and usability in accordance with NFPA Style Manual section 3.5.1.2.

Response Message: FR-8333-NFPA 70-2024

Public Input No. 4190-NFPA 70-2023 [Section No. 555.30(B)]

Public Input No. 4188-NFPA 70-2023 [Section No. 555.30(A)]

Public Input No. 1586-NFPA 70-2023 [Section No. 555.30]

555.30 Electrical Equipment and Connections.

(A) General. [Move text to (1) and (2)]

~~All electrical components within electrical equipment (excluding wiring methods) and connections not intended for operation while submerged shall be located at least 305 mm (12 in.) above the deck of a fixed or floating structure, but not below the electrical datum plane.~~
~~Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required for floating structures where located above the waterline but below the electrical datum plane.~~

(1) Location.

All electrical components within electrical equipment (excluding wiring methods) and connections not intended for operation while submerged shall be located at least 305 mm (12 in.) above the deck of a fixed or floating structure, but not below the electrical datum plane.

(2) Wiring Connectors.

Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required for floating structures where located above the waterline but below the electrical datum plane.

(B) Replacements. [Move text to (1) and (2)]

~~Replacement electrical connections shall be located at least 305 mm (12 in.) above the deck of a floating or fixed structure. Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required where located above the waterline but below the electrical datum plane.~~

(1) Location.

Replacement electrical connections shall be located at least 305 mm (12 in.) above the deck of a floating or fixed structure.

(2) Wiring Connectors.

Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required where located above the waterline but below the electrical datum plane.

First Revision No. 8787-NFPA 70-2024 [Section No. 555.33]

555.~~33~~ 33 AC Only Receptacles.

Receptacles shall be mounted not less than 305 mm (12 in.) above the deck surface of the pier and not below the electrical datum plane on a fixed pier.

(A) Shore Power Receptacles.

(1) Enclosures.

Receptacles intended to supply shore power to boats shall be enclosed in listed marina power outlets, enclosures listed for wet locations, or shall be installed in listed enclosures protected from the weather. The integrity of the assembly shall not be affected when the receptacles are in use with any type of booted or nonbooted attachment plug/cap inserted.

(2) Strain Relief.

Means shall be provided where necessary to reduce the strain on the plug and receptacle caused by the weight and catenary angle of the shore power cord.

(3) Branch Circuits.

Each single receptacle that supplies shore power to boats shall be supplied from a marina power outlet or panelboard by an individual branch circuit of the voltage class and rating corresponding to the rating of the receptacle.

Informational Note: Supplying receptacles at voltages other than the voltages marked on the receptacle may cause overheating or malfunctioning of connected equipment, for example, supplying single-phase, 120/240-volt, 3-wire loads from a 208Y/120-volt, 3-wire source.

(4) Ratings.

Shore power for boats shall be provided by single receptacles rated not less than 30 amperes.

Informational Note: See NFPA 303-2016, *Fire Protection Standard for Marinas and Boatyards*, for locking- and grounding-type receptacles for auxiliary power to boats.

(a) Receptacles rated 30 amperes and 50 amperes shall be of the locking and grounding type.

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, for various configurations and ratings of locking- and grounding-type receptacles and caps.

(b) Receptacles rated 60 amperes or higher shall be of the pin and sleeve type.

Informational Note: See ANSI/UL 1686, *UL Standard for Safety Pin and Sleeve Configurations*, for various configurations and ratings of pin and sleeve receptacles.

(B) Other Than Shore Power.

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, provided the receptacles are marked to clearly indicate that the receptacles are not to be used to supply power to boats.

(C) Replacement Receptacles.

The requirements in 555.33 shall apply to the replacement of marina receptacles.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 15:57:16 EST 2024

Committee Statement

Committee Statement: Clearly identified requirements which are not applicable to DC circuits by incorporating “AC Only” as applicable per the Correlating Committee DC Task Group.

Response Message: FR-8787-NFPA 70-2024

First Revision No. 8334-NFPA 70-2024 [Section No. 555.34(B)(2)]

(2) Outdoor Branch Circuits and Feeders.

Multiple feeders and branch circuits shall be permitted and clearances for overhead branch-circuit and feeder wiring in locations of the boatyard other than those described in 555.34(B)(1) shall be located not less than 5.49 m (18 ft) above grade. Only ~~Part I of~~ Article 225, Part I shall apply to marina installations.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 14:14:51 EST 2024

Committee Statement

Committee Statement: The text is revised to comply with the NEC Style Manual Section 4.1.4, regarding the use of Parts. The article number shall precede the part number.

Response Message: FR-8334-NFPA 70-2024

Public Input No. 2768-NFPA 70-2023 [Section No. 555.34(B)(2)]

First Revision No. 9038-NFPA 70-2024 [Section No. 555.35]

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

~~For other than floating buildings, ground~~ Ground -fault protection ~~for~~ serving docking facilities and piers shall be provided in accordance with 555.35(A) through (D).

(A) ~~Feeder~~ Feeders and Branch Circuits .

~~Listed GFPE,~~ Feeders and branch circuits shall be provided with listed GFPE rated not more than ~~100 milliamperes, shall be provided for feeders installed on docking facilities. Coordination with downstream GFPE shall be permitted at the feeder overcurrent protective device.~~

~~Exception: Transformer secondary~~

100 milliamperes.

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.

~~(B) Branch-Circuits~~

Exception No. 2: Feeders for fire pumps shall be permitted to utilize ground fault monitoring without disconnecting power to the fire pump. The ground fault monitor alarm shall notify upon ground faults exceeding 100mA. The alarm shall be audible and visual. 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 milliamperes, shall be provided for receptacles installed in accordance with 555.33(A).

(2) Outlets for Other than Shore Power.

Outlets supplied by branch circuits not exceeding 150 volts to ground and 60 amperes, single phase, and 150 volts or less to ground, 100 amperes or less, three phase, shall be provided with GFCI protection for personnel.

Exception to (B): 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 a boat hoist 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 utilize 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 utilize shore power.

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

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-9038_555.35.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Wed Jan 24 20:55:29 EST 2024

Committee Statement

Committee Statement: For enforceability, this requirement would apply to piers that may not be covered by Article 682 which only applies to the installations of electrical wiring in and adjacent to natural and artificially made bodies of water. The statement regarding coordination is deleted as it will be addressed in the proposed new section 555.35(E), added in a separate, detail revision.

The following provide additional information on the revisions to the informational notes to 555.35(A):

PI 1587: The revision created by TIA 1660 recognizes the difficulty of providing GFPE protection on sources that provide power to docking facilities. Removing the language does not reduce the safety of the electrical system.

PI 3913: In the event of a ground-fault event at a marina dock, the GFPE equipment could potentially be de-energized, thereby not protecting the remainder of the feeders supply dock distribution. The exception ensures that the GFPE system remains functional during and after ground fault events.

PI 3915: The new language includes other separately derived systems, as opposed to only recognizing transformers, such as battery inverters, generators, etc., where GFPE is not required when conditions are met.

PI 3920: “For other than floating buildings” was removed for clarity. The wording was not needed as floating building are covered in Part III of the article.

PI 3937: As written, 555.35(A) requires the fire pump feeder to have ground-fault protection of equipment. For life safety concerns, it would not be desirable to remove power in a GFPE event; however, monitoring would be acceptable to confirm that leakage current from the fire pump not contributing to an electrical shock drowning (ESD) event.

555.35(A)(3) in the 2020 Edition of the NEC required 100 mA GFPE protection on both feeder and branch-circuits. This requirement was unintentionally removed from the 2023 NEC. Restructuring and modifying the sub-section headings in 555.35(A) and 555.35(B) restores the requirement as it applies to branch circuits, and addresses receptacles and outlets as a separate sub-section. This modification restores the requirements and structures them in a clear and usable manner.

Response Message: FR-9038-NFPA 70-2024

Public Input No. 3913-NFPA 70-2023 [Section No. 555.35(A)]

Public Input No. 3915-NFPA 70-2023 [Section No. 555.35(A)]

Public Input No. 3937-NFPA 70-2023 [Section No. 555.35(A)]

Public Input No. 1587-NFPA 70-2023 [Section No. 555.35]

Public Input No. 4007-NFPA 70-2023 [Part III.]

Public Input No. 3920-NFPA 70-2023 [Section No. 555.35 [Excluding any Sub-Sections]]

Public Input No. 4008-NFPA 70-2023 [New Section after 555.50]

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

~~For other than floating buildings, ground~~Ground-fault protection ~~for~~serving docking facilities and piers shall be provided in accordance with 555.35(A) through (D).

(A) ~~Feeder~~Feeders and Branch Circuits.

~~Listed~~Feeders and branch circuits shall be provided with listed GFPE~~,~~ rated not more than 100 milliamperes~~, shall be provided for feeders installed on docking facilities. Coordination with downstream GFPE shall be permitted at the feeder overcurrent protective device.~~

Exception No. 1: ~~Transformer secondary~~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 utilize ground fault monitoring without disconnecting power to the fire pump. The ground fault monitor alarm shall notify upon ground faults exceeding 100mA. The alarm shall be audible and visual. The alarm shall be located where it can be monitored by qualified personnel.

(B) ~~Branch Circuits~~ Receptacles and Outlets.

(1) Receptacles Providing Shore Power.

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

(2) Outlets for Other than Shore Power.

Outlets supplied by branch circuits not exceeding 150 volts to ground and 60 amperes, single phase, and 150 volts or less to ground, 100 amperes or less, three phase, shall be provided with GFCI protection for personnel.

Exception to (B): 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.

Commented [SB1]: Add space

(C) Boat Hoists.

GFCI protection for personnel shall be provided for outlets not exceeding 240 volts that supply a boat hoist 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 utilize 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 utilize shore power.

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

First Revision No. 8349-NFPA 70-2024 [Section No. 555.36(C)]

(C) Emergency Electrical Disconnect.

An emergency electrical disconnect shall comply with the following:

(1) Marking. Each marina power outlet or enclosure that provides shore power to boats shall be provided with a listed emergency shutoff device or electrical disconnect that is clearly marked "Emergency Shutoff" in accordance with 110.22(A).

(2) Location. The emergency shutoff device or electrical disconnect shall be within sight of the marina power outlet or other enclosure that provides shore power to boats, readily accessible, externally operable, manually resettable, and listed for use in wet locations.

(3) Type. The emergency shutoff device or electrical disconnect shall de-energize the power supply to all circuits supplied by the marina power outlet(s) or enclosure(s) that provide shore power to boats. A circuit breaker handle shall not be used for this purpose.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8349_555.36_C_.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 15:22:08 EST 2024

Committee Statement

Committee Statement: A list item format helps facilitate understanding and usability for Code users and is consistent with section 3.5.1.2 of the NEC Style Manual.

Response Message: FR-8349-NFPA 70-2024

Public Input No. 4192-NFPA 70-2023 [Section No. 555.36(C)]

(C) Emergency Electrical Disconnect. [Move text to (1)—(3)]

~~Each marina power outlet or enclosure that provides shore power to boats shall be provided with a listed emergency shutoff device or electrical disconnect that is clearly marked "Emergency Shutoff" in accordance with 110.22(A). The emergency shutoff device or electrical disconnect shall be within sight of the marina power outlet or other enclosure that provides shore power to boats, readily accessible, externally operable, manually resettable, and listed for use in wet locations. The emergency shutoff device or electrical disconnect shall de-energize the power supply to all circuits supplied by the marina power outlet(s) or enclosure(s) that provide shore power to boats. A circuit breaker handle shall not be used for this purpose.~~An emergency electrical disconnect shall comply with the following:

(1) Marking. Each marina power outlet or enclosure that provides shore power to boats shall be provided with a listed emergency shutoff device or electrical disconnect that is clearly marked "Emergency Shutoff" in accordance with 110.22(A).

(2) Location. The emergency shutoff device or electrical disconnect shall be within sight of the marina power outlet or other enclosure that provides shore power to boats, readily accessible, externally operable, manually resettable, and listed for use in wet locations.

(3) Type. The emergency shutoff device or electrical disconnect shall de-energize the power supply to all circuits supplied by the marina power outlet(s) or enclosure(s) that provide shore power to boats. A circuit breaker handle shall not be used for this purpose.

First Revision No. 8353-NFPA 70-2024 [Section No. 555.37(C)]

(C) Feeder Equipment Grounding Conductor.

Where a feeder supplies a remote enclosed panelboard or other distribution equipment, an insulated equipment grounding conductor shall extend from a grounding terminal in the service to a grounding terminal and busbar in the remote enclosed panelboard or other distribution equipment.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 15:32:11 EST 2024

Committee Statement

Committee Statement: Included the term “enclosed panelboard” to be consistent with the new definition added to Article 100 during the 2023 NEC cycle.

Response Message: FR-8353-NFPA 70-2024

Public Input No. 2078-NFPA 70-2023 [Section No. 555.37(C)]

First Revision No. 8358-NFPA 70-2024 [Section No. 555.38(A)]

(A) General.

~~All luminaires and retrofit kits shall be listed and identified for use in their intended environment.~~ Luminaires and their supply connections shall be secured to structural elements of the marina to limit damage from watercraft and prevent entanglement of and interaction with sea life.

Informational Note: See 410.6 for requirements related to listing and retrofit requirements for luminaires.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Sun Jan 21 15:45:12 EST 2024

Committee Statement

Committee Statement: The text is revised to add an informational note that refers to the requirements in 410.6, in accordance with 4.1.1 and 4.1.3 of the NEC Style Manual. Identifying the locations of the requirements in Chapters 1 through 4 adds significant clarity and usability in the special occupancy articles.

Response Message: FR-8358-NFPA 70-2024

Public Input No. 2509-NFPA 70-2023 [Section No. 555.38(A)]

First Revision No. 8419-NFPA 70-2024 [Section No. 555.54(A)]

(A) Grounding of Electrical and Nonelectrical Parts.

Grounding of both electrical and nonelectrical parts in a floating building shall be through connection to a grounding bus in the building enclosed panelboard.

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Mon Jan 22 09:25:26 EST 2024

Committee Statement

Committee Statement: Included the term “enclosed panelboard” to be consistent with the new definition added to Article 100 during the 2023 NEC cycle.
Response Message: FR-8419-NFPA 70-2024

Public Input No. 2079-NFPA 70-2023 [Section No. 555.54(A)]

First Revision No. 8745-NFPA 70-2024 [Section No. 604.6]

[Move 604. ~~6~~ 6 Lsting Requirements to 604.2 Listing Requirements]

604 . 2 Listing Requirements.

Manufactured wiring systems and associated components shall be listed.

Informational Note: See ANSI/UL 183, *Standard for Manufacturing Wiring Systems*, the safety standard for manufactured wiring systems.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 14:16:29 EST 2024

Committee Statement

Committee Statement: Move 604.6 to new 604.2 to comply with parallel numbering format required in the NEC Style Manual Section 2.2 for Numbering Conventions.

Response Message: FR-8745-NFPA 70-2024

First Revision No. 8749-NFPA 70-2024 [Section No. 604.100]

604.100 Construction.

(A) ~~Cable, Conduit, and Tubing Types~~ Wiring Methods .

(1) Cables.

Cable shall be listed Type AC cable or listed Type MC cable containing nominal 600-volt, 8 AWG to 12 AWG insulated copper-clad aluminum or copper conductors.

Other cables ~~as listed~~ specified in 722.135, 800.113, and 830.179 shall be permitted in manufactured wiring systems for wiring of equipment within the scope of their respective articles.

(2) Conduits and Tubing.

~~Conduit shall be listed flexible~~

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

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

(1) Flexible metal conduit (FMC), ~~listed liquidtight~~

(2) Liquidtight flexible metal conduit (LFMC), ~~liquidtight~~

(3) Liquidtight flexible nonmetallic conduit (LFNC), ~~or electrical~~

(4) Electrical metallic tubing (EMT) ~~containing~~

(b) The wiring method shall contain nominal 600-volt, 8 AWG to 12 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): ~~A luminaire tap,~~ 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.

(3) Flexible Cord.

Flexible cord suitable for hard usage, with minimum 12 AWG conductors, shall be permitted as part of a listed factory-made assembly not exceeding 1.8 m (6 ft) in length when making a transition between components of a manufactured wiring system and utilization equipment not permanently secured to the building structure. The cord shall be visible for the entire length, shall not be subject to physical damage, and shall be provided with identified strain relief.

Exception: ~~Listed~~ Flexible cords with conductors smaller than 12 AWG shall be permitted for listed electric-discharge luminaires that comply with 410.62(C) ~~shall be permitted with conductors smaller than 12 AWG~~ .

(4) Busways.

Busways shall be listed continuous plug-in type containing factory-mounted, bare or insulated conductors, which shall be copper or aluminum bars, rods, or tubes. The busway shall be provided with an equipment ~~ground~~ grounding conductor . The busway shall be rated nominal 600 volts, 20, 30, or 40 amperes. Busways shall be installed in accordance with 368.12, 368.17(D), and 368.30.

(5) Raceway.

Prewired, modular, surface-mounted raceways shall be listed ~~for the use~~ , rated nominal 600 volts, 20 amperes, and installed in accordance with 386.12, 386.30, 386.60, and 386.100.

(B) Marking.

Each section shall be marked to identify the type of cable, flexible cord, conduit or ~~conduit~~ raceway .

(C) Receptacles and Connectors.

Receptacles and connectors shall be of the locking type, uniquely polarized ~~and identified for the purpose~~ , and ~~shall be~~ part of a listed assembly for the appropriate system. All connector openings shall be designed to prevent inadvertent contact with live parts or capped to effectively close the connector openings.

(D) Other Component Parts.

Other component parts shall be listed for the appropriate system.

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8749_604.100.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 14:21:51 EST 2024

Committee Statement

Committee Statement: The CMP made appropriate changes from each of the PI's to enhance usability by revising 604.100 to comply with the NEC Style Manual, Section 2.1.8.3, regarding numbering. Terminology was updated throughout the section to align with current industry standards.

Response Message: FR-8749-NFPA 70-2024

Public Input No. 1513-NFPA 70-2023 [Section No. 604.100(A)(2)]

Public Input No. 547-NFPA 70-2023 [Section No. 604.100]

Public Input No. 668-NFPA 70-2023 [Section No. 604.100(A)(3)]

604.100 Construction.

(A) ~~Cable, Conduit, and Tubing Types~~Wiring Methods.

(1) Cables.
Cable shall be listed Type AC cable or listed Type MC cable containing nominal 600-volt, 8 AWG to 12 AWG insulated copper-clad aluminum or copper conductors.

Other cables ~~as listed~~specified in 722.135, 800.113, and 830.179 shall be permitted in manufactured wiring systems for wiring of equipment within the scope of their respective articles.

(2) Conduits and Tubing. [Move text to (b)]
Conduits and tubing shall comply with the requirements of 604.100(A)(2)(a) and 604.100 (A)(2)(b). ~~shall be listed flexible metal conduit (FMC), listed liquidtight flexible metal conduit (LFMC), liquidtight flexible nonmetallic conduit (LFNC), or electrical metallic tubing (EMT) containing nominal 600-volt, 8 AWG to 12 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.~~

(a) 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)

(b) The wiring method shall contain nominal 600-volt, 8 AWG to 12 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): ~~A~~ Tap conductors for a luminaire ~~tap,~~ 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.

(3) Flexible Cord.

Flexible cord suitable for hard usage, with minimum 12 AWG conductors, shall be permitted as part of a listed factory-made assembly not exceeding 1.8 m (6 ft) in length when making a transition between components of a manufactured wiring system and utilization equipment not permanently secured to the building structure. The cord shall be visible for the entire length, shall not be subject to physical damage, and shall be provided with identified strain relief.

Exception: ~~Listed~~ Flexible cords with conductors smaller than 12 AWG shall be permitted for listed electric-discharge luminaires that comply with 410.62(C) ~~shall be permitted with conductors smaller than 12 AWG~~.

(4) Busways.
Busways shall be listed continuous plug-in type containing factory-mounted, bare or insulated conductors, which shall be copper or aluminum bars, rods, or tubes. The busway shall be provided with an equipment ~~ground~~grounding conductor. The busway shall be rated nominal 600 volts, 20, 30, or 40 amperes. Busways shall be installed in accordance with 368.12, 368.17(D), and 368.30.

(5) Raceway.
Prewired, modular, surface-mounted raceways shall be listed ~~for the use~~, rated nominal 600 volts, 20 amperes, and installed in accordance with 386.12, 386.30, 386.60, and 386.100.

(B) Marking.
Each section shall be marked to identify the type of cable, flexible cord, ~~or~~ conduit or raceway.

(C) Receptacles and Connectors.
Receptacles and connectors shall be of the locking type, uniquely polarized ~~and identified for the purpose~~, and ~~shall be~~ part of a listed assembly for the appropriate system. All connector openings shall be designed to prevent inadvertent contact with live parts or capped to effectively close the connector openings.

(D) Other Component Parts.
Other component parts shall be listed for the appropriate system.

First Revision No. 8776-NFPA 70-2024 [Section No. 675.6]

675.6 Marking on Main Control Panel.

The main control panel shall be provided with a nameplate giving the following information:

(1) The manufacturer's name, the rated voltage, the phase, and the frequency

(2) The current rating of the machine

(3) The rating of the main disconnecting means and size of ~~overcurrent protection~~ the branch-circuit overcurrent protective device required

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 15:32:11 EST 2024

Committee Statement

Committee Statement: The term "overcurrent protection" was revised to "branch circuit overcurrent protective device" to be consistent with the defined term.

Response Message: FR-8776-NFPA 70-2024

First Revision No. 8768-NFPA 70-2024 [Section No. 675.7(A)]

(A) Continuous-Current Rating.

The equivalent continuous-current rating for the selection of branch-circuit conductors and branch-circuit overcurrent ~~protection~~ protective device 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.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 15:25:24 EST 2024

Committee Statement

Committee Statement: The term “overcurrent protection” was revised to “branch circuit overcurrent protective device” to be consistent with the defined term.

Response Message: FR-8768-NFPA 70-2024

First Revision No. 8753-NFPA 70-2024 [Section No. 675.16]

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 ~~Part II of~~ Article 725 , Part II .

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 14:56:19 EST 2024

Committee Statement

Committee Statement: Revisions were made to comply with NEC Style Manual Section 4.1.4, which specifically addresses the usage of "Parts."

Response Message: FR-8753-NFPA 70-2024

Public Input No. 2925-NFPA 70-2023 [Section No. 675.16]

First Revision No. 8754-NFPA 70-2024 [Section No. 675.17]

675.17 Connectors.

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

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

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 14:59:24 EST 2024

Committee Statement

Committee Statement: Revisions were made to comply with NEC Style Manual Section 4.1.4, which specifically addresses the usage of "Parts."

Response Message: FR-8754-NFPA 70-2024

Public Input No. 2926-NFPA 70-2023 [Section No. 675.17]

First Revision No. 8789-NFPA 70-2024 [Sections 682.3, 682.4, 682.5]

[Move section 682.3 to 682.4, move section 682.4 to 682.5 and move section 682.5 to 682.6]

Sections 682.3, 682.4, 682.5

682.3 Other Articles.

If the water is subject to boat traffic, the wiring shall comply with 555.34(B).

682.4 Industrial Application.

This article shall not apply in industrial applications where there is alarm indication of equipment faults and the following conditions are in place:

(1) Conditions of maintenance and supervision ensure that only qualified persons service and operate the installed systems.

(2) Continued circuit operation is necessary for safe operation of equipment or processes.

682.5 Electrical Datum Plane Distances.

The electrical datum plane shall consist of one of the following:

(1) In land areas subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane 600 mm (2 ft) above the highest tide level for the area occurring under normal circumstances, that is, highest high tide.

(2) In land areas not subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane 600 mm (2 ft) above the highest water level for the area occurring under normal circumstances.

(3) In land areas subject to flooding, the electrical datum plane based on (1) or (2) above shall be a horizontal plane 600 mm (2 ft) above the point identified as the prevailing high water mark or an equivalent benchmark based on seasonal or storm-driven flooding from the authority having jurisdiction.

The electrical datum plane for floating structures and landing stages that are (a) installed to permit rise and fall response to water level, without lateral movement, and (b) that are so equipped that they can rise to the datum plane established for (1) or (2) above, shall be a horizontal plane 750 mm (30 in.) above the water level at the floating structure or landing stage and a minimum of 300 mm (12 in.) above the level of the deck.

Submitter Information Verification

Committee: NEC-P07
Submittal Date: Tue Jan 23 16:03:48 EST 2024

Committee Statement

Committee Statement: 682.3 through 682.5 were moved down one section to become 682.4 through 682.6 to comply with parallel numbering format required in the NEC Style Manual Section 2.2 for Numbering Conventions.

Response Message: FR-8789-NFPA 70-2024

First Revision No. 8420-NFPA 70-2024 [Section No. 682.33]

682.33 Equipotential Planes and Bonding of Equipotential Planes.

~~An equipotential plane shall be installed where required in this section to mitigate step and touch voltages at electrical equipment.~~

~~**(A)** Areas Requiring~~

Equipotential

~~Planes.Equipotential~~

planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water

~~, that have a metallic enclosure and controls accessible to personnel, and that are likely to become energized.~~

where the following conditions exist:

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

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

(A) Equipotential Plane Construction

The equipotential plane shall encompass the area around the outdoor service equipment and ~~shall~~ 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 (A)(2) and be attached to metallic enclosures, that are likely to become energized, with a solid copper, insulated, covered, or bare conductor, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel. Unencapsulated structural reinforcing steel bonded together by steel tie wires or the equivalent.

(2) Copper Grid. Copper grid where the following requirements are met:

(a) 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

(b) 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.)

(c) Only listed splicing devices or exothermic welding are used

(B) Areas Not Requiring Equipotential Planes.

Equipotential planes shall not be required for the controlled equipment supplied by the service equipment or disconnecting means.

(C) Bonding.

(1) Bonded Parts.

The parts specified in 682.33(C)(1) through (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 of 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 a metallic enclosure and controls accessible to personnel, and that are likely to become energized shall be bonded to the equipotential plane.

(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 the equipotential plane. Bonding to this surface shall be wire mesh or other conductive elements on, embedded in, or placed under the walk surface within 75 mm (3 in.).

Supplemental Information

File Name	Description	Approved
NEC_CMP7_FR-8420_682.33.docx		

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Mon Jan 22 09:32:54 EST 2024

Committee Statement

Committee Statement: The changes incorporate similar equipotential bonding requirements from section 680.26 for consistency. Additional text provides detail on how the equipotential plane is to be constructed and bonded to the electrical system. For correlation, section 682.33 was revised to match the section 555.14 requirements

Response Message: FR-8420-NFPA 70-2024

682.33 Equipotential Planes and Bonding of Equipotential Planes.

~~An equipotential~~Equipotential plane~~s~~ shall be installed ~~where required in this section to mitigate step and touch voltages at electrical equipment.~~adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water where the following conditions exist:

(1) Where the system voltage exceeds 250 volts to ground
(2) Where the equipment is located within 3 m (10 ft) of the body of water

(A) ~~Areas Requiring~~ Equipotential Plane~~s~~ Construction.

~~Equipotential planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water, that have a metallic enclosure and controls accessible to personnel, and that are likely to become energized.~~ The equipotential plane shall encompass the area around the outdoor service equipment and ~~shall~~ 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 682.33(A)(2) and be attached to metallic enclosures, that are likely to become energized, with a solid copper, insulated, covered, or bare conductor, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel.

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

(2) Copper Grid.

Copper grid where the following requirements are met:

(a) 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

(b) 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.)

(c) Only listed splicing devices or exothermic welding are used

(B) Areas Not Requiring Equipotential Planes.

Equipotential planes shall not be required for the controlled equipment supplied by the service equipment or disconnecting means.

(C) Bonding.

(1) Bonded Parts.

The parts specified in 682.33(C)(1) through (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 of 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 a metallic enclosure and controls accessible to personnel, and that are likely to become energized shall be bonded to the equipotential plane.

(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 the equipotential plane. Bonding to this surface shall be wire mesh or other conductive elements on, embedded in, or placed under the walk surface within 75 mm (3 in.).

First Revision No. 8719-NFPA 70-2024 [Part III.]

Part III. Distribution and Equipotential Plane.

Submitter Information Verification

Committee: NEC-P07

Submittal Date: Tue Jan 23 13:12:54 EST 2024

Committee Statement

Committee Statement: Added “Equipotential Plane” to the title of part III to clarify that the installation of the equipotential plane is not part of the distribution and keeps the location of the requirement consistent with previous editions of the NEC.

Response Message: FR-8719-NFPA 70-2024

Public Input No. 640-NFPA 70-2023 [Section No. 547.44]