

AN ORDINANCE AMENDING ORDINANCE 13-04 BY AMENDING CERTAIN SECTIONS OF THE NATIONAL ELECTRICAL CODE, 2011 EDITION, GOVERNING THE DESIGN, CONSTRUCTION, ALTERATION, ENLARGEMENT, REPAIR, MAINTENANCE, AND USE OF ALL BUILDINGS AND STRUCTURES IN THE VILLAGE OF FOUR SEASONS, MISSOURI.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE VILLAGE OF FOUR SEASONS, MISSOURI AS FOLLOWS:

SECTION 553.4 SHALL BE AMENDED TO READ AS FOLLOWS:

Section 553.4 Location of Service Equipment. The service equipment for a floating building shall be located adjacent to, but not in or on, the building or any floating structure. The main overcurrent protective device that feeds the floating structure shall have ground fault protection not exceeding 100 mA. Ground fault protection for each individual branch or feeder circuit shall be permitted as a suitable alternative. The disconnecting means shall be within six feet (6') of the entrance ramp and at the height of forty-two inches (42") above finished grade or surface.

Section 553.4(A) Type of Disconnecting Means. The disconnecting means shall be breaker type switches and shall be recognized as a disconnecting means.

A NEW ARTICLE 554. SHALL BE ADDED TO THE NATIONAL ELECTRIC CODE, 2011 EDITION, AS ADOPTED IN ORDINANCE 13-04, WHICH SHALL READ AS FOLLOWS:

ARTICLE 554 Residential Docks

I. General

Section 554.1 Scope. This article covers wiring, services, feeders, and grounding for residential and private, noncommercial docking facilities constructed or occupied for the use of the owner or residents of the associated single- or two-family dwelling.

Section 554.2 Definition.

Residential Dock. A private, noncommercial docking facility constructed or occupied for the use of the owner or residents or the associated single-or two-family dwelling is considered a residential dock. A building unit that floats on water, is moored in a permanent location, and has a premises wiring system served through connection by permanent wiring to an electricity supply system not located on the premises. The dock shall be limited to a service of fifty (50) amps or less.

Section 554.3 Application of Other Articles. Wiring for residential dock as defined in this article shall comply with the applicable provisions of other articles of this *Code*, except as modified by this article. Wiring inside storage sheds, wet bars, bar areas, and storage lockers shall use the same wiring method as the rest of the dock.

II. Services and Feeders

Section 554.4 Location of Service or Feeder Service Equipment. The service equipment or the feeder service equipment for a residential dock shall be located adjacent to, but not in or on, the building or any floating structure. The service or feeder service equipment shall be at or within 6 feet of the floating building ramp.

Section 554.4 (A) Existing Service or Feeder Service Conductors. Existing service or feeder service conductors to a dock not meeting the current requirements shall not continue as installed. The conductors shall be inspected prior to being covered for confirmation to determine it meets the installation requirements for conductors as identified in the 2011 National Electrical Code. Any NM, NMC, and NMS used as the service or feeder service conductors shall be replaced in a weather proof junction box where it exits the residence. UF cable shall meet all the current installation requirements for the type of conductors used including the correct burial depth.

Section 554.4(B) Disconnecting means. The disconnecting means for the service or feeder service equipment shall be forty-two (42) inches off finished grade or surface and shall be measured to the bottom of the equipment enclosure.

Section 554.4(C) Disconnecting means clarification. All disconnecting means shall have the ability to isolate neutrals and grounds, bond the grounds, and protect all circuits with a GFCI personal protection breaker (GFCI modules, pull out (AC) disconnects, or regular breakers with only GFCI protected outlets shall not be allowed). All service, feeder, and branch circuits shall be personal protected GFCI breakers (lighting, receptacles, and other circuits).

Section 554.5 Service Conductors. One set of service conductors shall be permitted to serve more than one set of service equipment.

Section 554.6 Feeder Conductors. Each floating building shall be supplied by a single set of feeder conductors from its service or feeder service equipment.

Exception: Where the floating building has multiple occupancy, each occupant shall be permitted to be supplied by a single set of feeder conductors extended from the occupant's service equipment to the occupant's panel board. The feeder conductors shall extend into one disconnecting means for the dock. The disconnect shall be within six (6) feet of the ramp or ramps that extended to the dock.

Section 554.7 Installation of Services and Feeders.

Section 554.7(A) Flexibility. Flexibility of the wiring system shall be maintained between floating buildings and the supply conductors. All wiring shall be installed so that motion of the water surface and changes in the water level will not result in unsafe conditions.

Section 554.7(B) Wiring Methods. Liquidtight flexible metal conduit or Liquidtight flexible nonmetallic conduit with approved fittings shall be permitted for feeders and where flexible connections are required for services. Extra-hard usage portable power cable listed for both wet locations and sunlight resistance shall be permitted for a feeder to a floating building where flexibility is required. Other raceways suitable for the location shall be permitted to be installed where flexibility is not required.

See Sections 555.1 and 555.13

Electrical Nonmetallic Tubing (ENT) may not be used as a wiring method.

III. Grounding

Section 554.8 General Requirements. Grounding at floating buildings shall comply with Section 553.8(A) through (D).

Section 554.8(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 panelboard.

Section 554.8(B) Installation and Connection of Equipment Grounding Conductor. The equipment-grounding conductor shall be installed with the feeder conductors and connected to a grounding terminal in the service equipment.

Section 554.8(C) Identification of Equipment Grounding Conductor. The equipment-grounding conductor shall be an insulated copper conductor with a continuous outer finish that is either green or green with one or more yellow stripes. For conductors larger than 6 AWG, or where multiconductor cables are used, re-identification of conductors as allowed in 250.119(A) (2) (b) and (A)(2)(c) or 250.119(B)(2) and (B)(3) shall be permitted.

Section 554.8(D) Grounding Electrode Conductor Connection. The grounding terminal in the service equipment shall be grounded by connection through an insulated grounding electrode conductor to a grounding electrode on shore.

Section 554.8(E) Grounding Electrode Conductor. The installation must comply with article 254.64 – this is either in conduit suited for the application or secured tightly to the supporting structure and buried underground to the ground rod.

Section 554.8(H) Service Grounding Conductor at Source. The existing service at service equipment shall have a proper grounding electrode system per section 250.50. If the service is not properly grounded a grounding electrode system shall be installed that meets the requirements of the 2011 National Electrical Code.

Section 554.9 Insulated Neutral. The grounded circuit conductor (neutral) shall be an insulated conductor identified in conformance with 200.6 (shall be identified by a continuous white or gray outer finish or by three continuous white stripes on other than green insulation along its entire length). The neutral conductor shall be connected to the equipment-grounding terminal in the service equipment, and, except for that connection; it shall be insulated from the equipment grounding conductors, equipment enclosures, and all other grounded parts. The neutral circuit terminals in the panelboard and in ranges, clothes dryers, counter-mounted cooking units, and the like shall be insulated from the enclosures.

Section 554.10 Equipment Grounding.

Section 554.10(A) Electrical Systems. All enclosures and exposed metal parts of electrical systems shall be bonded to the grounding bus.

Section 554.10(B) Cord-Connected Appliances. Where required to be grounded, cord-connected appliances shall be grounded by means of an equipment-grounding conductor in the cord and a grounding-type attachment plug.

Section 554.11 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 may become energized shall be bonded to the grounding bus in the panelboard.

IV. Electrical Equipment

Section 554.12 Electrical Equipment Enclosures.

Section 554.12(A) Securing and Supporting. Electrical equipment enclosures installed on above deck level shall be securely and substantially supported by structural members, independent of any conduit connected to them. If enclosures are not attached to mounting surfaces by means of external ears or lugs, the internal screw heads shall be sealed to prevent seepage of water through mounting holes.

Section 554.12(B) Locations. Electrical equipment enclosures shall be located so as not to interfere with mooring lines.

Section 554.12(C) Weep holes. Weatherproof enclosures are allowed to have "weep holes".

Section 554.13 Circuit Breakers, Switches, Panelboards, and Marine Power Outlets. Circuit breakers and switches installed in gasketed enclosures shall be arranged to permit required manual operation without exposing the interior of the enclosure. All such enclosures shall be arranged with a weep hole to discharge condensation.

Section 554.14 Wiring Methods and Installation. All installations above the waterline and below 8 feet of the floating building will be considered a wet location. All installations above 8 feet and not exposed to weather will be considered a damp location.

The complete electrical system shall be located above the finished surface of the dock (this requirement is to improve the ability of the owner to regularly inspect and maintain the system).

Section 554.14(A) Wiring Methods.

Section 554.14(A)(1) General. Wiring methods of Chapter 3 shall be permitted where identified for use in wet locations

Section 554.14(B)(1) Outside Branch Circuits and Feeders. Outside branch circuits and feeders shall comply with Article 225.

Section 554.14(B)(2) Portable Power Cables.

- a. Where portable power cables are permitted by 553.13 (A) (2), the installation shall comply with the following:
 - i. Cables shall be properly supported.
 - ii. Cables shall not be located on the underside of the dock or pier.
 - iii. Cables shall be securely fastened by non-metallic clips to structural members other than the deck planking.
 - iv. Cables shall not be installed where subject to physical damage.
 - v. Where cables pass through structural members, they shall be protected against chafing by a permanently installed oversized sleeve of nonmetallic material.
 - (a) Where portable power cables are used as 555.13(A)(2)(2), there shall be an approved junction box of corrosion-resistant construction with permanently installed terminal blocks on each pier and dock section to which the feeder and feeder extensions are to be connected. Metal junction boxes and their covers, and metal screws and parts that re exposed externally to the boxes, shall be of corrosion-resistant materials or

protected by material resistant to corrosion.

Section 554.14(B)(3) Protection. Rigid metal or nonmetallic conduit suitable for the location shall be installed to protect wiring above decks of piers, docks and landing stages and below the enclosure that it serves. The conduit shall be connected to the enclosure by full standard threads. The use of special fittings of nonmetallic material to provide a threaded connection into enclosures on rigid nonmetallic conduit, employing joint design as recommended by the conduit manufacturer, for attachment of the fitting to the conduit shall be acceptable, provided the equipment and method of attachment are approved and the assembly meets the requirements of installation in damp or wet locations as applicable.

Section 554.15 Disconnecting Means for Shore Power Connection(s). Disconnecting means shall be provided to isolate each boat from its supply connection(s).

Section 554.15(A) Type. The disconnecting means shall be permitted to consist of a circuit breaker, switch, or both, and shall be properly identified as to which receptacle it controls.

Section 554.15(B) Location. The disconnecting means shall be readily accessible, located not more than 30 inches from the receptacle it controls, and shall be located in the supply circuit ahead of the receptacle. Circuit breakers or switches located in marine power outlets complying with this section shall be permitted as the disconnecting means.

Section 554.16 Receptacles. Receptacles shall be mounted not less than 36 inches above the deck surface.

Section 554.16(A) Shore Power Receptacles. All shore power receptacles shall be GFCI protected (Ground-Fault Circuit-Interrupter).

Section 554.16(A)(1) Enclosures. Receptacles intended to supply shore power to boats shall be housed in marine power outlets listed as marina power outlets or listed for set locations, or shall be installed in listed enclosures protected from the weather or in listed weatherproof enclosures. 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.

Section 554.16(A)(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.

Section 554.16(A)(3) Branch Circuits. Each single receptacle that supplies shore power to boats shall be supplied from a marine power outlet or panelboard by an individual branch circuit of the voltage class and rating corresponding to the rating of the receptacle.

Section 554.16(A)(4) Ratings. Shore power to boats shall be provided by single receptacles rated not less than 30 amperes.

For Locking- and grounding-type receptacles for auxiliary power to boats, see NFPA 303-2000, Fire Protection Standard for Marinas and Boatyards.

- a. Receptacles rated not less than 30 amperes or more than 50 amperes shall be of the locking and grounding type.

For various configurations and ratings of locking and grounding-type receptacles and caps, see ANSI/NEWA 18WD 6-1989, National Electrical Manufacturers Association's Standard for Dimensions of Attachment Plugs and Receptacles.

- b. Receptacles rated for 60 amperes or 100 amperes shall be of the pin and sleeve type.

For various configurations and ratings of pin and sleeve receptacles, see ANSI/UL 1686,

UL Standard for Safety Pin and Sleeve Configurations.

Section 554.16(B) Other Than Shore Power.

Section 554.16(B)(1) Ground-Fault Circuit-Interrupter (GFCI) Protection for Personnel. Fifteen- and 20-ampere, single-phase, 125-volt receptacles installed outdoors, in boathouses, in buildings used for storage, maintenance, or repair where portable electrical hand tools or portable lighting equipment are to be used shall be provided with GFCI protection for personnel. Receptacles in other locations shall be protected in accordance with 210.8(B).

Section 554.16(B)(2) Marking. Receptacles other than those supplying shore powers to boats shall be permitted to be housed in marine power outlets with the receptacles that provide shore power to boats, provided they are marked to clearly indicate that they are not to be used to supply power to boats.

Section 554.17 Temporary Wiring. Temporary wiring shall not be used to supply boats or docks.

ARTICLE 555 OF THE NATIONAL ELECTRIC CODE, 2011 EDITION, AS ADOPTED IN ORDINANCE 13-04, SHALL BE AMENDED TO READ AS FOLLOWS

DELETION: (page 70-477) Article 555 Marinas and Boatyards. Delete in its entirety and INSERT:

ARTICLE 555 Marinas and Boatyards

Section 555.1 Scope. This article covers the installation of wiring and equipment in the areas comprising fixed or floating piers, wharves, docks, and other areas in marinas, boatyards, boat basins, boathouses, yacht clubs, boat condominiums, docking facilities associated with residential condominiums, any multiple docking facility, or similar occupancies, residential dock with a service of 51 amps or larger 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. This article does not cover private, noncommercial docking facilities constructed or occupied for the use of the owner or residents of the associated single- or two-family dwelling if the service is 50 amps or less.

The docks covered under this section shall submit an electrical schematic and cut sheets on type or types of material to be used for the project.

Wiring inside storage sheds, wet bars, bar areas, and storage lockers shall use the same wiring method as the rest of the dock.

See NFPA 303-2000, *Fire Protection Standard for Marinas and Boatyards*, for additional information.

Section 555.1(A) Application of Other Articles. Wiring for docks covered by this article shall comply with the applicable provisions of other articles of this *Code*, except as modified by this article.

Section 555.2 Definitions.

Electrical Datum Plane. The electrical datum plane is defined as follows:

- (A) In land areas subject to tidal fluctuation, the electrical datum plane is a horizontal plane

606 mm (2 ft) above the highest tide level for the area occurring under normal circumstances, that is, highest high tide.

- (B) In land areas not subject to tidal fluctuation, the electrical datum plane is a horizontal plane 606 mm (2-ft) above the highest water level for the area occurring under normal circumstances.
- (C) The electrical datum plane for floating piers 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), is a horizontal plane 762 mm (30 in.) above the water level at the floating pier or landing stage and a minimum of 305 mm (12 in.) above the level of the deck.

Marine Power Outlet. An enclosed assembly that can include receptacles, circuit breakers, fused switches, fuses, watt-hour meter(s), and monitoring means approved for marine use.

Section 555.3 Ground-Fault Protection. The main overcurrent protective device serving the dock shall be protected with ground fault protection not exceeding 100 mA, these are the conductors from the shoreline disconnect to the subpanel on the dock. The circuits leaving the sub-panels on the dock shall be GFCI personal protected with a breaker (all branch circuit on a dock shall be GFCI protected not just the receptacle outlets).

Section 555.4 Distribution System. Yard and pier distribution systems shall not exceed 600 volts phase to phase.

Section 555.5 Transformers. Transformers and enclosures shall be specifically approved for the intended location. The bottom of enclosures for transformers shall not be located below the electrical datum plane.

Section 555.7 Location of Service Equipment. The service equipment for floating docks or marinas shall be located adjacent to, but not on or in, the floating structure. The service equipment shall be at or within 6 feet of the marina and boatyard ramp.

Section 555.7 (A) Existing Service or Feeder Service Conductors. Existing service or feeder service conductors to a dock not meeting the current requirements shall not continue as installed. The conductors shall be inspected prior to being covered for confirmation to determine it meets the installation requirements for conductors as identified in the 2011 National Electrical Code. Any NM, NMC, and NMS used as the service of feeder service conductors shall be replaced in a weather proof junction box where it exits the residence. UF cable shall meet all the current installation requirements for the type of conductors used including the correct burial depth.

Section 555.7(B) Disconnecting means. The disconnecting means for the service or feeder service equipment shall be forty-two (42) inches off finished grade or surface and shall be measured to the bottom of the equipment enclosure.

Section 555.9 Electrical Connections. All electrical connections shall be located at least 36 inches above the deck of a floating pier, pier or dock.

Section 555.10 Electrical Equipment Enclosures.

Section 555.10(A) Securing and Supporting. Electrical equipment enclosures installed on piers above deck level shall be securely and substantially supported by structural members, independent of any conduit connected to them. If enclosures are not attached to mounting surfaces by means of

external ears or lugs, the internal screw heads shall be sealed to prevent seepage of water through mounting holes.

Section 555.10(B) Location. Electrical equipment enclosures on piers shall be located so as not to interfere with mooring lines.

Section 555.10(C). Weatherproof enclosures are allowed to have “weep holes”.

Section 555.11 Circuit Breakers, Switches, Panelboards, and Marine Power Outlets. Circuit breakers and switches installed in gasketed enclosures shall be arranged to permit required manual operation without exposing the interior of the enclosure. All such enclosures shall be arranged with a weep hole to discharge condensation.

Section 555.12 Load Calculations for Service and Feeder Conductors. General lighting and other loads shall be calculated in accordance with Article 220, and, in addition, the demand factors set forth in Table 555.12 shall be permitted for each service and/or feeder circuit supplying receptacles that provide shore power for boats. These calculations shall be permitted to be modified as indicated in notes (1) and (2) to Table 555.12.

Table 555.12 Demand Factors

Number of Receptacles	Sum of the Rating of the Receptacles (percent)
1-4	100
5-8	90
9-14	80
15-30	70
31-40	60
41-50	50
51-70	40
71-plus	30

Notes:

1. Where shore power accommodations provide two receptacles specifically for an individual boat slip and these receptacles have different voltages (for example, one 30 ampere, 125 volt and one 50 ampere, 125/250 volt), only the receptacle with the larger kilowatt demand shall be required to be calculated.
2. If the facility being installed includes individual kilowatt-hour submeters for each slip and is being calculated using the criteria listed in Table 555.12, the total demand ampere may be multiplied by 0.9 to achieve the final demand ampere.
3. These demand factors may be inadequate in areas of extreme hot or cold temperatures with loaded circuits for heating, air-conditioning, or refrigerating equipment

Section 555.13 Wiring Methods and Installation. All installations measured from above the

waterline and below 8 feet will be considered a wet location. All installations above 8 feet and not exposed to weather will be considered damp locations.

Section 555.13(A) Wiring Methods.

Section 555.13(A)(1) General. Wiring methods of Chapter 3 shall be permitted where identified for use in wet locations.

Section 555.13(A)(2) Portable Power Cables. Extra-hard usage portable power cables rated not less than 167°F (75°C), 600 volts; listed for both wet locations and sunlight resistance; and having an outer jacket rated to be resistant to temperature extremes, oil, gasoline, ozone, abrasion, acids, and chemicals shall be permitted as follows:

- a. As permanent wiring on the underside of piers (floating or fixed)
- b. Where flexibility is necessary as on piers composed of floating sections

Section 555.13(A)(3) Temporary Wiring. Temporary wiring, except as permitted by Article 590, shall not be used to supply power to boats.

Section 555.13(B) Installation.

Section 555.13(B)(1) Outside Branch Circuits and Feeders. Outside branch circuits and feeders shall comply with Article 225 except that clearances for overhead wiring in portions of the yard other than those described in 555.13(B)(1) shall not be less than 5.49 m (18 ft) above grade.

Section 555.13(B)(2) Portable Power Cables.

- a. Where portable power cables are permitted by 555.13(A)(2), the installation shall comply with the following:
 - i. Cables shall be properly supported.
 - ii. Cables shall be located on the underside of the pier.
 - iii. Cables shall be securely fastened by nonmetallic clips to structural members other than the deck planking.
 - iv. Cables shall not be installed where subject to physical damage.
 - v. Where cables pass through structural members, they shall be protected against chafing by a permanently installed oversized sleeve of nonmetallic material.
- b. Where portable power cables are used as permitted in 555.13(A)(2)(b), there shall be an approved junction box of corrosion-resistant construction with permanently installed terminal blocks on each pier section to which the feeder and feeder extensions are to be connected. A listed marine power outlet employing terminal blocks/bars shall be permitted in lieu of a junction box. Metal junction boxes and their covers, and metal screws and parts that are exposed externally to the boxes, shall be of corrosion-resistant materials or protected by material resistant to corrosion.

Section 555.13(B)(3) Protection. Rigid metal conduit, reinforced thermosetting resin conduit (RTRC) listed for aboveground use, or rigid polyvinyl chloride (PVC) conduit suitable for the location shall be installed to protect wiring above decks of piers and landing stages and below the enclosure that it serves. The conduit shall be connected to the enclosure by full standard threads or fittings listed for the use in damp or wet locations, as applicable. The use of special fittings of nonmetallic material to provide a threaded connection into enclosures on rigid nonmetallic conduit, employing joint design as recommended by the conduit manufacturer, for attachment of the fitting to the conduit shall be acceptable, provided the equipment and method of attachment are

approved and the assembly meets the requirements of installation in damp or wet locations as applicable.

Section 555.15 Grounding. Wiring and equipment within the scope of this article shall be grounded as specified in Article 250 and as required by 555.15(A) through 555.15(E).

Section 555.15(A) Equipment to Be Grounded. The following items shall be connected to an equipment grounding conductor run with the circuit conductors in the same raceway, cable, or trench:

Section 555.15(A)(1) Metal boxes, metal cabinets, and all other metal enclosures

Section 555.15(A)(2) Metal frames of utilization equipment

Section 555.15(A)(3) Grounding terminals of grounding-type receptacles

Section 555.15(B) Type of Equipment Grounding Conductor. The equipment grounding conductor shall be an insulated copper conductor with a continuous outer finish that is either green or green with one or more yellow stripes. The equipment grounding conductor of Type MI cable shall be permitted to be identified at terminations. For conductors larger than 6 AWG, or where multiconductor cables are used, re-identification of conductors as allowed in 250.119(A) (2) (b) and (A)(2)(c) or 250.119(B)(2) and (B)(3) shall be permitted.

Section 555.15(C) Size of Equipment Grounding Conductor. The insulated copper equipment grounding conductor shall be sized in accordance with 250.122 but not smaller than 12 AWG.

Section 555.15(D) Branch-Circuit Equipment Grounding Conductor. The insulated equipment-grounding conductor for branch circuits shall terminate at a grounding terminal in a remote panelboard or the grounding terminal in the main service equipment.

Section 555.15(E) Feeder Equipment Grounding Conductors. Where a feeder supplies a remote panelboard, an insulated equipment-grounding conductor shall extend from a grounding terminal in the service equipment to a grounding terminal in the remote panel board.

Section 555.15(F) Grounding Electrode Conductor. The installation must comply with article 254.64 – this is either in conduit suited for the application or secured tightly to the supporting structure and buried underground to the ground rod.

Section 555.15(H) Service Grounding Conductor at Source. The existing service at service equipment shall have a proper grounding electrode system per section 250.50. If the service is not properly grounded grounding electrode system shall be installed that meets the requirements of the 2011 National Electrical Code.

Section 555.17 Disconnecting Means for Shore Power Connection(s). Disconnecting means shall be provided to isolate each boat from its supply connection(s).

Section 555.17(A) Type. The disconnecting means shall be permitted to consist of a circuit breaker, switch, or both, and shall be properly identified as to which receptacle it controls.

Section 555.17(B) Location. The disconnecting means shall be readily accessible, located not more than 762 mm (30 in.) from the receptacle it controls, and shall be located in the supply circuit ahead of the receptacle. Circuit breakers or switches located in marine power outlets complying with this section shall be permitted as the disconnecting means.

Section 555.19 Receptacles. **All receptacles shall be GFCI protected.** Receptacles shall be mounted not less than 36 inches above the deck surface.

Section 555.19(A) Shore Power Receptacles. All shore power receptacles shall be GFCI protected (Ground-Fault Circuit-Interrupter).

Section 555.19(A)(1) Enclosures. Receptacles intended to supply shore power to boats shall be housed in marine power outlets listed as marina power outlets or listed for set locations, or shall be installed in listed enclosures protected from the weather or in listed weatherproof enclosures. 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.

Section 555.19(A)(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.

Section 555.19(A)(3) Branch Circuits. Each single receptacle that supplies shore power to boats shall be supplied from a marine power outlet or panelboard by an individual branch circuit of the voltage class and rating corresponding to the rating of the receptacle.

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.

Section 555.19(A)(4) Ratings. Shore power for boats shall be provided by single receptacles rated not less than 30 amperes.

For locking- and grounding-type receptacles for auxiliary power to boats, see NFPA 303-2000, *Fire Protection Standard for Marinas and Boatyards*.

- a. Receptacles rated not less than 30 amperes or more than 50 amperes shall be of the locking and grounding type.

For various configurations and ratings of locking and grounding-type receptacles and caps, see ANSI/NEMA 18WD 6-1989, National Electrical Manufacturers Association's *Standard for Dimensions of Attachment Plugs and Receptacles*.

- b. Receptacles rated for 60 amperes or 100 amperes shall be of the pin and sleeve type.

For various configurations and ratings of pin and sleeve receptacles, see ANSI/UL 1686, *UL Standard for Safety Pin and Sleeve Configurations*.

Section 555.19(B) Other Than Shore Power.

Section 555.19(B)(1) Ground-Fault Circuit-Interrupter (GFCI) Protection for Personnel. Fifteen- and 20-ampere, single-phase, 125-volt receptacles installed outdoors, in boathouses, in buildings or structures used for storage, maintenance, or repair where portable electrical hand tools, electrical diagnostic equipment, or portable lighting equipment are to be used shall be provided with GFCI protection for personnel. Receptacles in other locations shall be protected in accordance with 210.8(B).

Section 555.19(B)(2) Marking. Receptacles other than those supplying shore powers to boats shall be permitted to be housed in marine power outlets with the receptacles that provide shore power to boats, provided they are marked to clearly indicate that they are not to be used to supply power to boats.

Section 555.21 Motor Fuel Dispensing Stations — Hazardous (Classified) Locations. Electrical wiring and equipment located at or serving motor fuel dispensing stations shall comply with Article 514 in addition to the requirements of this article. All electrical wiring for power and lighting shall be installed on the side of the wharf, pier, or dock opposite from the liquid piping system.

For additional information, see NFPA 303-2000, *Fire Protection Standard for Marinas and Boatyards*, and NFPA 30A-2003, *Motor Fuel Dispensing Facilities and Repair Garages*.

Section 555.22 Repair Facilities — Hazardous (Classified) Locations. Electrical wiring and equipment located at facilities for the repair of marine craft containing flammable or combustible liquids or gases shall comply with Article 511 in addition to the requirements of this article.

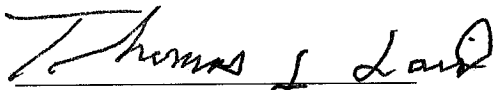
Section 555.23 Marine Hoists, Railways, Cranes, and Monorails. Motors and controls for marine hoists, railways, cranes, and monorails shall not be located below the electrical datum plane. Where it is necessary to provide electric power to a mobile crane or hoist in the yard and a trailing cable is utilized, it shall be a listed portable power cable rated for the conditions of use and be provided with an outer jacket of distinctive color for safety.

ALL OTHER PORTIONS OF THE NATIONAL ELECTRICAL CODE, 2011 EDITION, AS ADOPTED IN ORDINANCE 13-04, REMAIN IN FULL FORCE AND EFFECT. THIS AMENDMENT TO 13-04 SHALL BE INCORPORATED AND BECOME A PART OF ORDINANCE 13-04.

This Ordinance shall become immediately effective upon passage and approval, and the consent thereto by a majority of the Board of Trustees of the Village.

Read first time 22 Jan. Read second time 22 Jan
and passed this 22 day of Jan, 2013.

ATTEST:


Thomas Laird, Village Clerk

Gordon Ellison, Presiding Officer
Chairman, Board of Trustees

APPROVED AS TO FORM BY:

Jon A. Kaltenbronn, Village Attorney