RHODE ISLAND

STATE BUILDING CODE

Electrical Code
Regulation SBC-5
APRIL 1, 1998

Re-enactment of SBC-5
Dated May 1, 1997
Replaces Regulation SBC-5-94
Revised April 5, 1994

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration
BUILDING CODE STANDARDS COMMITTEE
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7th EDITION

STATEMENT OF NEED

Pursuant to the State Building Code Chapter 23, Title 27.3, the Building Code Standards Committee has promulgated Regulation SBC-5, as amended, dated April 1, 1998. In accordance with section 23-27.3-l09.1 paragraphs 1-4 of the Code, the Committee has the authority to adopt appropriate rules and regulations when necessary to maintain the State Building Code current with national model codes and standards.

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Electrical Code
Regulation SBC-5
April 1, 1998

The Building Code Standards Committee, in accordance with the rule making authority in Title 23, Chapter 27.3, Section 109.1, paragraphs 1 through 4 inclusive of the General Laws of Rhode Island, have formally adopted and promulgated the provisions of the National Electrical Code, 1996 Edition, N.F.P.A. No. 70, 1996 as published by the National Fire Protection Association, as the Code for the design and installation of all electrical systems and data, telecommunications, video and sound installations, with amendments thereto hereinafter set forth to the chapters and sections of said Code.

ARTICLE 90 INTRODUCTION:

The following Rhode Island amendments are made to the Sections of Article 90:

Amend Section 90-1 Purpose by adding the following paragraphs. Delete the existing Rhode Island amendments to Sections 90-1.1, 90-4 and 90-5.

90-1.1 Purpose:

The installation of all work shall be accomplished by persons licensed by the State of Rhode Island, Department of Labor, Division of Professional Regulation of Electricians, Title 5, Chapter 6, and Telecommunications, Chapter 5-70 of the General Laws of Rhode Island.

Amend section 90-4 Enforcement, to read as follows:

90.4 Enforcement:

This code is intended to be suitable for mandatory application by governmental bodies exercising legal jurisdiction over electrical installations and for use by insurance inspectors. The Committee and the State Building Commissioner shall have responsibility for making interpretations of the rules and for deciding upon the approval of equipment and materials. The authority having jurisdiction shall have the responsibility for granting special permission contemplated in a number of the rules. The State Building Code Standards Committee acting as the State Board of Appeals, may waive specific requirements in this code or permit alternative methods, where it is assured that equivalent objectives can be achieved by establishing and maintaining effective safety.

Amend Section 90-6, Interpretations, to read as follows:

90-6 Formal Interpretations:

To promote uniformity of interpretations and application of the provisions of this Code, the State Building Code Standards Committee has established interpretation procedures and regulations to be implemented by the State Building Commissioner. Part D of this Appendix is for reference purposes only and the procedures outlined herein may be used by the Commissioner in an advisory manner. See SBC-10, Rules and Regulations for code interpretations.

ARTICLE 110 – REQUIREMENTS FOR ELECTRICAL INSTALLATIONS:

The following Rhode Island amendments are made to the Sections of Article 110:

Amend Section 110-16(c) Working clearance by adding a new paragraph:

110-16(c) Access and Entrance to Working space:

At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment. There shall be one entrance not less than 24 inches (610mm) wide and 6-1/2 feet (1.98m) high.

Add a new Section 110-16(f), Working Clearance to read as follows:

110-16.(f) Door Locks

Doors on all rooms that contain electrical equipment rated over 800 amps shall be equipped with locks. Personnel doors shall swing out and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure.

ARTICLE 200 – USE AND IDENTIFICATION OF GROUNDED CONDUCTORS:

The following Rhode Island amendments are made to the Sections of Article 200:

Amend Section 200-6 (d) Grounded Conductors of Different Systems to read as follows:

200-6 (d) Grounded Conductors of Different systems:

> Where conductors of different systems are installed in the same raceway, box, auxiliary gutter, or other types of enclosures, each grounded conductor shall have an outer covering similar to (a) or (b) above and shall be identified by system. Where the identification is by color, white shall be used on systems not exceeding 150 volts to ground, and gray shall be used for systems exceeding 150 volts to ground. When additional systems are present, each other system grounded conductor, if required, shall have an outer covering of white with identifiable colored stripe (not green) running along the insulation, or other and different means of identification as allowed by (a) or (b).

ARTICLE 210 – BRANCH CIRCUITS:

The following Rhode Island amendments are added to the Sections of Article 210:

Amend Section 210-8 (a) Ground Fault Circuit Interrupter Protection for Personnel by adding the following exception and fine print note:

210-8. Ground-Fault Circuit-Interrupter Protection for Personnel.

(FPN): See Section 215-9 for ground-fault circuit-interrupter protection for personnel on feeders.

(a) Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified below shall have ground-fault circuit-interrupter protection for personnel.

(1) Bathrooms

Exception: A single receptacle located within a dedicated space for a laundry appliance or a duplex receptacle for two appliances which in normal use are not easily moved from one place to another.

(FPN): See definition of receptacle in Article 100.

Amend Section 210-8(a) (3) Outdoors: by designating the existing exception as Exception No. 1 and add a second exception as follows:

(3) Outdoors.

Exception No. 1: Receptacles that are not readily accessible and are supplied from a dedicated branch circuit for electric snow-melting or deicing equipment as covered in Article 426 shall be permitted to be installed without ground-fault circuit-interrupter protection for personnel.

Exception No. 2: Ground-fault circuit-interrupter protection for personnel shall not be required for a 125 volt. 15 or 20-ampere outdoor receptacle where the sole purpose of the receptacle is for a wheelchair lift and the receptacle is a NEMA L5-15R or 20R receptacle and is in addition to the receptacles required by Section 210-52(e) and is in accordance with the provisions of Section 410-57.

Retain Rhode Island section 210-52 (h), Hallways, to read as follows:

210-52(h) Hallways:

For hallways of 4 feet (1.22 m) or more in length at least one receptacle outlet shall be required.

As used in this subsection the hall length shall be considered the length along the centerline of the hall without passing through a doorway.

ARTICLE 220 – BRANCH-CIRCUIT, FEEDER, AND SERVICE CALCULATIONS:

The following Rhode Island amendments are made to the sections of Article 220:

Add a new section 220-37 Optional Calculation-New Laundromats to read as follows:

220-37 Optional Calculation: New Laundromats:

Calculations of a service load or feeder, where the service or feeder serves the total load for laundromat machines, shall be allowed to be reduced by 20% in lieu of the requirements of Part B of this article.

The overload protection of the service-entrance conductors shall be in accordance with Sections 230-90 and 240-3.

Feeder conductors shall not be required to be of greater ampacity than the service-entrance conductors.

Service-entrance or feeder conductors whose demand load is determined by this optional calculation shall be permitted to have the neutral load determined by Section 220-22.

ARTICLE 230 – SERVICES

The following Rhode Island amendment is made to the sections of Article 230:

Amend section 230-32 by adding a last sentence to read as follows:

230-32. Protection Against Damage:

Service laterals that are not encased in concrete and that are buried 18 inches (457mm) or more below grade shall have their location identified by a warning ribbon placed in the trench at least 12 inches (305 mm) above the underground installation.

ARTICLE 240 – OVERCURRENT PROTECTION

The following Rhode Island amendments are made to the sections of Article 240:

Amend section 240-21(j) Transformer Secondary Conductors of Separately Derived Systems for Industrial Installations to read as follows:

240-21(j) Transformer Secondary Conductors of Separately Derived Systems

Conductors shall be permitted to be connected to a transformer secondary of a separately derived system, without overcurrent protection at the connection, where all the following conditions are met:

(1) The length of the secondary conductors does not exceed 25 ft (7.62m).

(2) The ampacity of the secondary conductors is not less than the secondary current rating of the transformer, and the sum of the ratings of the overcurrent devices does not exceed the ampacity of the secondary conductors. The sum of the ratings of the overcurrent devices does not exceed 125% of the ampacity of the transformer.

(3) All overcurrent devices are grouped.

(4) The secondary conductors are suitably protected from physical damage.

ARTICLE 250 – GROUNDING

The following Rhode Island amendments are made to the sections of Article 250:

Amend section 250-91 (a), Grounding Electrode Conductor: to read as follows:
Retain exceptions 1, 2 and 3.

250-91(a) Grounding Electrode Conductor
The material for grounding electrode conductor shall be copper only. The material selected shall be resistant to any corrosive condition existing at the installation or shall be suitably protected against corrosion. The conductor shall be solid or stranded, insulated, covered or bare and shall be installed in one continuous length without a splice or joint.

Amend section 250-94 Size of Alternating-Current Grounding Electrode Conductor: by adding a last sentence to read as follows:

250-94. Size of Alternating-Current Grounding Electrode Conductor.
The size of the grounding electrode conductor of a grounded or ungrounded ac system shall not be less than given in Table 250-94.

Exception:

a. Where connected to made electrodes as in Section 250-83(c) or (d), that portion of the grounding electrode conductor that is the sole connection to the grounding electrode shall not be required to be larger than No. 6 copper wire or No. 4 aluminum wire.

b. Where connected to a concrete-encased electrode as in Section 250-81(c), that portion of the grounding electrode conductor that is the sole connection to the grounding electrode shall not be required to be larger than No. 4 copper wire.

c. Where connected to a ground ring as in Section 250-81(d), that portion of the grounding electrode conductor that is the sole connection to the grounding electrode shall not be required to be larger than the conductor used for the ground ring.

The size of the grounding electrode conductor of a grounded or ungrounded AC system shall not be less than given in Table 250-94. In no case shall it be required to be larger than the largest size listed in Table 250-94.

ARTICLE 300 – WIRING METHODS

Delete NEC section 300-4 Protection Against Physical Damage in its entirety:

Amend NEC section 300-4(d) Cables and Raceways Parallel to Framing Members to read as follows:

300-4(d) Cables and Raceways Parallel to Framing Members:

In both exposed and concealed locations, where a cable or raceway type wiring method is installed parallel to framing members, such as joists, rafters, or studs, the cable or raceway shall be installed and supported so that the nearest outside surface of the cable or raceway is not less than ¾ inches (31.8 mm) from the nearest edge of the framing member where nails or screws are likely to penetrate. Where this distance cannot be maintained, the cable or raceway shall be protected from penetration by nails or screws by a steel plate, sleeve, or equivalent at least 1/16 inch (1.59 mm) thick.

Delete NEC section 300-7(c) in its entirety:

Amend section 300-5(j) Ground Movement by adding a new last sentence to the paragraph and the FPN:

300-5(j) Ground Movement:

Where direct buried conductors, raceways, or cables are subject to movement by settlement or frost, direct buried conductors, raceways or cables shall be arranged to prevent damage to the enclosed conductors or to equipment connected to the raceways. This section only applies to raceways that are on buildings or large permanent structures.

(FPN): This section recognizes "S" loops in underground direct burial to raceway transitions, expansion joints in pipe risers to fixed equipment, and generally the provision of flexible connections to equipment subject to settlement or frost heaves.

It is the intent of this article to require expansion fittings in all conduit risers including rigid metal conduit, intermediate metal conduit and rigid nonmetallic conduit.

Delete section 300-15(b) exception 4 and renumber exception 5, 6, 7, 8, and 9 to 4, 5, 6, 7 and 8:

ARTICLE 310 – CONDUCTORS FOR GENERAL WIRING

The following Rhode Island amendments are made to the sections of Article 310:

Amend: "Notes to Ampacity Tables of 0 to 2000 Volts" Table 310-19 by adding a sixth exception to note 8:

NOTES TO AMPACITY TABLES OF 0 TO 2000 VOLTS:

8 Adjustment Factors:

Exception No. 6:

Derating factors shall not apply where 30 or fewer current carrying conductors occupy no more than 20 percent of the interior cross sectional area of Underfloor Raceways, Article 354; Cellular Metal Floor Raceways, Article 356; and Cellular Concrete Floor Raceways, Article 358.

ARTICLE 336 – NONMETALLIC – SHEATHED CABLE

The following Rhode Island amendments are made to the sections of Article 336:

Amend Section 336-18, Supports, by adding a second paragraph: Delete Rhode Island section 336-15:

336-18 Supports:

336-18 Supports. Nonmetallic-sheathed cable shall be secured by staples, cable ties, straps, or similar fittings so designed and installed as not to damage the cable. Cable shall be secured in place at intervals not exceeding 4 ½ ft (1.37m) and within 12 in. (305 mm) from every cabinet, box, or fitting. Two conductor cables shall not be stapled on edge. Cables run through holes in wood or metal joists, rafters, or studs shall be considered to be supported and secured.

Where staples are used for cable sized smaller than three No. 8 AWG conductors, they shall be of the insulated type.

Exception:

Listed non-insulated staple installed by the use of a hand operated staple gun shall be permitted.

(FPN): See Section 370-17(c) for support where nonmetallic boxes are used.

Delete section 336-25. In its entirety:

ARTICLE 370 – OUTLET, DEVICE, PULL AND JUNCTION BOXES, CONDUIT BODIES AND FITTINGS:

The following Rhode Island amendment is made to the section of Article 370:

Amend section 370-27(c), Boxes at Fan Outlets, by adding a second paragraph:

(c) Boxes at Fan Outlets. Outlet boxes shall not be used as the sole support for ceiling (paddle) fans.

In addition, in dwelling units, ceiling outlet boxes in habitable rooms, stairways, foyers, and bathroom areas where such fans are not excluded by Section 410-4(d), that are not used to support fans, shall be considered as likely to support a fan. These boxes shall be listed as being suitable for the sole support of a fan not exceeding 35 pounds (15.88kg) in weight, with or without accessories, when all of the following conditions are met:

(1) Interior use.	The box is located in the interior of a dwelling unit.
(2) Distance from Walls.	The box is located more than 3 feet (914mm) from any wall.
(3) Height	The box is not less than 7-1/2 feet (2.29m) above the floor.
(4) Circuits.	The box is supplied by a general-purpose branch circuit.

Exception: Boxes listed for the application shall be permitted as the sole means of support.

ARTICLE 384 – SWITCHBOARDS AND PANELBOARDS:

The following Rhode Island amendment is made to the section of Article 384:

Amend section 384-16 Overcurrent Protection by adding a new section 384-16(g) Field Installed Breakers:

384-16(g) Field Installed Breakers:

Field installed circuit breakers shall only be installed in panelboards that are listed to accept that specific breaker.

Exception:

Except as modified by the authority having jurisdiction for panelboards that are out of manufacture.

ARTICLE 410-LIGHTING FIXTURES, LAMPHOLDERS, LAMPS, AND RECEPTACLES:

The following Rhode Island amendments are added to the sections of Article 410:

Amend section 410-4(d) to read as follows:

410-4(d) Above Bathtubs:

No parts of cord-connected fixtures, hanging fixtures, lighting track, pendants, or ceiling paddle fans shall be located within a zone measured 3 ft. (914mm) horizontally and 8ft (2.44m) vertically from the top of the bathtub rim. This zone is all encompassing and includes the zone directly over the tub.

Amend section and 410-16(c), suspended Ceilings, to read as follows and add a new exception:

410-16(c) Means of Support:

Framing members of suspended ceiling systems used to support fixtures shall be securely fastened to each other and shall be securely attached to the building structure at appropriate intervals. Lay-in type lighting fixtures and surface mounted fluorescent lighting fixtures shall be supported from the roof structure or ceiling above and shall not depend on the suspended ceiling grid system for support.

Exception:

Excluding fluorescent down lights.

ARTICLE 450 – TRANSFORMERS AND TRANSFORMER VAULTS:

The following Rhode Island amendment is added to the sections of Article 450:

Renumber Rhode Island 29 Section 450, Clearances for Flammable Oil Equipment Installed Outdoors, to read as follows:

450-27 FLAMMABLE OIL EQUIPMENT INSTALLED OUTDOORS:

(1) Electrical equipment containing liquid that will burn in air, in quantities more than 10 gallons, and installed outdoors including pad mounted transformers shall not, except as permitted below, be located within 10 feet of:

(a) Any combustible surfaces or material on a building; or
(b) Any door or window; or
(c) Any ventilation inlet or outlet

Exception No. 1 Such new equipment installed, owned and maintained by the public utility shall be exempt from these provisions, except when installed on private property.

Exception No. 2 By special permission smaller spaces may be permitted where it is judged that the particular arrangement of the installation will provide adequate safety and there is a fire wall separation.

ARTICLE 525 CARNIVALS, CIRCUSES, FAIRS, AND SIMILAR EVENTS:

The following Rhode Island amendment is made to the section of Article 525:

Amend section 525-18 to read as follows:

525-18 Ground-Fault Circuit-Interrupters Protection:

All 125 volt, single-phase, 15 and 20 ampere receptacle outlets shall have ground-fault circuit-interrupter protection for personnel. For the purposes of this section, cord sets incorporating listed ground-fault circuit-interrupter protection for personnel shall be permitted.

ARTICLE 680 SWIMMING POOLS, FOUNTAINS, AND SIMILAR INSTALLATIONS:

The following Rhode Island amendments are made to the sections of Article 680:

680-22(a). Bonding:

Add the following as a fifth exception to Section 680-22(a).

Exception No. 5:

Where reinforcing steel is effectively insulated by an encapsulating non-conductive compound at the time of manufacture, it shall be permitted to be unbounded provided No. 8 or larger bare solid copper conductors are run in the pour around the perimeter of the pool below the normal water line, and through the pour at other locations such that no point in the pour, measured through the pour, is more than 15 feet (4.58m) from a bonding conductor.

Amend section 680-22(b) common Bonding Grid by adding new item 4:

(4) A solid No. 8 or larger copper conductor installed as per 680-22(a)

ARTICLE 695 – FIRE PUMPS:

The following Rhode Island amendment is made to the section of Article 695:

Section 695-8 Exception No. 1 Amend the exception to read as follows:

695-8 Power Wiring:

Exception No. 1 Fire pump supply conductors on the load side of the disconnecting means as permitted by Section 695-3(c). Exception No. 1, shall be permitted to be routed through buildings using listed type MI cable with a minimum of 2-hour fire resistance. The installation shall comply with the restrictions provided for in the listing of such systems.

ARTICLE 700 – EMERGENCY SYSTEMS:

The following Rhode Island amendments are made to the section of Article 700:

700-9.(c) Fire Protection:

Emergency systems other than storage battery systems shall meet the following additional requirements in hospitals, buildings exceeding three stories above grade, buildings exceeding 75 ft (23m) in height or in any building exceeding assembly occupancies greater than 1000 persons.

(1) Feeder-circuit wiring shall be installed either in spaces fully protected by approved automatic fire suppression systems (sprinklers, carbon dioxide systems, etc.) or shall be

(a) installed as per article 230-6 and terminate in a 2 hour rated room or
(b) shall be a listed electrical circuit protective system with a 2-hour fire rating

(2) Equipment for feeder circuits (including transfer switches, transformers, panelboards, etc.) shall be either located in spaces fully protected by approved automatic fire suppression systems (sprinklers, carbon dioxide systems, etc.) or in spaces with a 2-hour fire resistance rating.

700-12(e) Unit Equipment:

Unit equipment shall be permanently fixed in place (i.e. not portable) and shall have all wiring to each unit installed in accordance with the requirements of any of the wiring methods in Chapter 3. The branch circuit feeding the unit equipment shall be the same branch circuit as that serving the normal lighting in the area and connected ahead of any local switches. The branch circuit feeding unit equipment shall be clearly identified at the distribution panel. Emergency illumination fixtures that obtain power from a unit equipment and are not part of the unit equipment shall be wired to the unit equipment as required by Section 700-9 and by one of the wiring methods of Chapter 3.

FPN: The provision for cord and plug connection has been removed from this section.

STATE BUILDING CODE REGULATION – 1998

The following list includes all regulations promulgated by the State Building Code Standards Committee. All regulations are available for a fee at the State Building Commission.