

**RHODE ISLAND
STATE BUILDING CODE**

SBC-4 State Mechanical Code

Effective July 1, 2010

Replaces Regulation SBC-4

Dated January 1, 2007



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

**Department of Administration
BUILDING CODE STANDARDS COMMITTEE
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10th Edition

Regulation SBC-4

State Mechanical Code

July 1, 2010

The Building Code Standards Committee, in accordance with the rule making authority of Title 23, Chapter 23-27.3, Section 109.1, paragraphs a through c inclusive, has formally adopted and promulgated as the Rhode Island State Building Code, the provisions of the International Mechanical Code, 2009 edition, as published by the International Code Council, Inc. (I.C.C.), together with amendments thereto hereinafter set forth to the articles and sections of this code:

The provisions of Title 23, Chapter 27.3 of the General Laws of Rhode Island establishing administration and enforcement are hereby incorporated by reference. Regulatory Administration Chapter 1 immediately follows and is supplemental to the General Laws.

Editorial Note: Code users please note:

When purchasing or using the Mechanical 2009 code, please take note of the particular printing edition. Errata to that printing edition is available on-line directly at no charge at www.iccsafe.org/cs/codes/pages/errata.aspx or call the office of the State Building Code Commissioner at 401-222-3033 for further information.

Printed copies of the administrative and enforcement provisions of Title 23, Chapter 27.3 are available at the Office of the State Building Code Commission or on-line at <http://www.rilin.state.ri.us/Statutes/TITLE23/23-27.3/INDEX.HTM>.

The International Mechanical Code, 2009 Edition, is protected by the copyright that has been issued to the ICC. As a result, the State Building Code is not available in complete form to the public in an electronic format. The International Mechanical Code 2009 edition that is referred to within is contained in a printed volume and is also in an electronic format that have been published by the ICC under an exclusive license.

The Office of the State Building Code Commissioner has purchased volumes of these codes and they shall be distributed to Rhode Island cities and towns during the month of June 2010 so that local officials will have access to the code prior to the implementation of these rules on July 1, 2007.

In order to assure public access to this code the Office of the State Building Code Commissioner shall provide a copy of this code to the Rhode Island State Library, which is located on the second floor of the State House. In addition, all codes may be viewed during business hours at the Department of Administration's Library which is located on the fourth floor of the William E. Powers Building, One Capitol Hill, Providence.

The Legislative Regulation Committee approved adoption of this code on March 4, 2010.

By:

John P. Leyden

Executive Secretary

Rhode Island Building Code Standards Committee

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STATE BUILDING CODE REGULATIONS

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.

SBC REGULATION

1. Building Code	SBC-1-2010
2.. One and Two Family Dwelling Code	SBC-2-2010
3. Plumbing Code	SBC-3-2010
4. Mechanical Code	SBC-4-2010
5. Electrical Code	SBC-5-2008
6. Property Maintenance Code	SBC-6-2010
7. Reserved	
8. Energy Conservation Code	SBC-8-2010
9 Enforcement and Implementation Procedures for Projects Under the Jurisdiction of The State of Rhode Island	SBC-9
10. Code Interpretations	SBC-10
11. Certification of Building Officials, Building, Electrical, Plumbing and Mechanical Inspectors	SBC-11-2010
12. New Materials and Methods of Construction	SBC-12
13. State Building Code for Existing Schools	SBC-13
14. Property Maintenance Code	SBC-14
15. Reserved	
16. Reserved	
17. Public Buildings Accessibility Meeting Standards	SBC-17
18. Native Lumber	SBC-18
19. Fuel Gas Code	SBC-19-2010

Format: These code changes follow numbering sequence and topics of the 2009 International Mechanical Code (first printing). All provisions of IMC 2006 are retained unless indicated as deleted or revised. Published errata are available from the ICC website dependent on the printing issue, number and date.

Chapter 1

Delete IMC section 101.1, Title, and substitute the following:

101.1 Title. These regulations shall be known as Rhode Island State Mechanical Code Regulation SBC-4 - 2010, hereafter referred to as "this code".

Add the following new section 101.1.1 Referenced Codes:

101.1.1 Referenced Codes. The other codes referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

1. **Electrical.** The provisions of Rhode Island State Electrical Code SBC-5-2008 shall apply wherever referenced in this code as the ICC Electrical Code, and shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings, and appurtenances thereto.
2. **Gas.** The provisions of the Rhode Island State Fuel Gas Code SBC-19-2010 shall apply wherever referenced in this code as the International Fuel Gas Code, and shall apply to the installation of gas piping from the point of delivery, gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories.
3. **Building.** The provisions of the Rhode Island State Building Code SBC-1-2010 shall apply wherever referenced in this code as the International Building Code.
4. **Plumbing.** The provisions of Rhode Island State Plumbing Code SBC-3-2010 shall apply wherever referenced in this code as the International Plumbing Code, and shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system.
5. **Property Maintenance.** The provisions of the Rhode Island State Property Maintenance Code SBC-6-2010 Provides requirements for continued use and maintenance buildings and property, and of related plumbing, mechanical, electrical and fire protection systems in existing residential nonresidential structures.

6. **Fire Prevention Code.** Wherever and whenever provisions of the International Fire Code 2003 editions are referenced, the appropriate Rhode Island Fire Safety Code requirement shall apply
7. **Energy.** The provisions of the Rhode Island State Energy Code SBC-8-2010 shall apply wherever referenced in this code as International Energy Conservation Code, and shall apply to the installation, alteration repair and replacement of energy systems and all matters governing the design and construction of buildings for energy efficiency.

Any and all such references to the various International Code Council family of codes shall be substituted for the appropriate state code as indicated above.

All other Administrative provisions shall remain in effect. To the extent that there is an apparent conflict between the provisions of these administrative sections and RIGL 23-27.3 101.0 et al, the provisions of state law shall prevail. Where other provisions of this code refer to provisions of Chapter 1 Administration, Chapter 1 Administration, or RIGL 23-27.3-101.0 et al shall apply as appropriate.

Delete IMC Sections 102.8 Exception, 102.10, 102.11, 103, 104, 106.4 through 106.5.3, 108 and 109 and refer to the appropriate sections of SBC-1-2010 and RIGL 23-27.3-100 et al.

102.10 Contractor's responsibilities. It shall be the duty of every contractor who enters into contracts for the installation or repair of mechanical systems for which a permit is required to comply with adopted state and local rules and regulations concerning licensing.

Any building owner, authorized agent, person or contractor who installs, modifies or repairs mechanical systems for which a permit is required shall comply with all state laws and regulations regarding licensing.

Chapter 3

306.5.2 Delete and substitute the following

306.5.2 Electrical requirements a receptacle outlet shall be provided at or near the appliance location in accordance with NFPA70

Chapter 5

501.2.1 Delete and substitute the following

501.2.1 Location of exhaust outlets. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:

1. For ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet (9144 mm) from property lines; 10 feet (3048 mm) from operable openings into buildings; 6 feet (1829 mm) from exterior walls and roofs; 30 feet (9144 mm) from combustible walls and operable openings into buildings which are in the direction of the exhaust discharge; 10 feet (3048 mm) above adjoining grade.
2. For other product-conveying outlets: 10 feet (3048mm) from the property lines; 3 feet (914 mm) from exterior walls and roofs; 10 feet (3048 mm) from operable openings into buildings; 10 feet (3048 mm) \ above adjoining grade of public walkways.
3. For all *environmental air* exhaust: 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable openings into buildings for all occupancies other than Group U, and 10 feet (3048 mm) from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious.
4. Exhaust outlets serving structures in flood hazard areas shall be installed at or above the design flood level.
5. For specific systems see the following sections:
 - 5.1. Clothes dryer exhaust, Section 504.4.
 - 5.2. Kitchen hoods and other kitchen exhaust *equipment*, Sections 506.3.12, 506.4 and 506.5.
 - 5.3. Dust stock and refuse conveying systems, Section 511.
 - 5.4. Sub slab soil exhaust systems, Section 512.4
 - 5.5. Smoke control systems, Section 513.10.3
 - 5.6. Refrigerant discharge, Section 1105.7
 - 5.7. Machinery room discharge, Section 1105.6.1.

Delete Section 502.19 in its entirety.

504.6.5 Length Identifications The maximum length of dryer duct may exceed 35' when a permanent placard, measuring a minimum 5" wide, 3" high, and 1/8" thick, and constructed of either wood, metal, or rigid plastic, and bearing raised or embossed lettering stating the following: **“WARNING: THE EFFECTIVE LENGTH OF THIS DRYER DUCT IS xxx FEET. ANY DRYER CONNECTED TO THIS EXHAUST DUCT MUST BE RATED TO USE AN EXHAUST DUCT OF THIS LENGTH, PER THE MANUFACTURERS SPECIFICATIONS; SEVERE RISK OF FIRE MAY RESULT FOR NONCOMPLIANCE WITH THIS NOTICE.”**

The provisions of table 504.6.4.1 shall be used in establishing the effective length of the ductwork installed and noted on the placard. The placard shall be permanently attached to the wall or floor within 6" of the terminus of the duct.

Chapter 6

603.2 Duct sizing Delete and substitute the following

603.2 Duct sizing ducts installed within a single dwelling unit shall be sized in accordance with ACCA Manual D or other approved methods. Ducts installed within all other buildings shall be sized in accordance acceptable methods.

Delete and Substitute:

606.2.1 Return air systems smoke detectors listed for use in air Distribution systems shall be located as follows.

- (1) Downstream of the air filters and ahead of any branch connections in air supply systems having a capacity greater than 944L/Sec (2000ft³/min)
- (2) At each story prior to the connection to a common return and prior to any recirculation or fresh air inlet connection in air return systems having a capacity greater than 7080L/sec (15,000 ft³/min) and serving more than one story.

606.4 Controls Operation. Upon activation, the smoke detector shall shut down the air distribution system and signal a trouble alarm. Air distribution systems that are part of a smoke control system shall switch to the smoke control mode upon activation of a detector.

Revise section 607.5.5 as follows:

607.5.5 Shaft Enclosures: Shaft enclosures in use group I and in high-rise structures that are permitted to be penetrated by ducts and air transfer openings shall be protected with approved fire and smoke dampers, installed in accordance with their listing. All other use group shaft enclosure penetrations shall be protected with approved fire dampers installed in accordance with their listing.

Retain sections 1,1.2, 1.3, 1.4 and delete exceptions 2, 3, 4 and 5.

Chapter 10

Add Exception #8 to IMC section 1001. 1 as follows:

8. Permits for steam and water boiler installation and repairs of boilers over 200, 000 BTUs for commercial uses and 400,000 BTUs for private residences or apartments shall be issued by the Department of Labor, Division of Occupational Safety, Boiler Unit.

1003.1 General delete and substitute

1003.1 General All pressure vessels shall bear the label of an approved agency and shall be installed in accordance with the manufacturer's installation instruction.

Chapter 11

Add the following new section 1101.1:

1101.1 " Prohibited Connections" The uses of potable water as an open loop, single pass heat exchange fluid for the refrigeration cycle of HVAC equipment is prohibited.

Delete IMC Section 1105.3 and substitute the following:

1105.3 Refrigerant detector: Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from leak will concentrate. The alarm shall be actuated at value not greater than the corresponding TLV-TWA values shown for the refrigerant classification. Detectors and alarms shall be placed in approved locations.

Delete IMC Section 1105.3 and substitute the following:

1105.8 Emergency pressure control system. Refrigeration systems containing more than 6.6 pound (93kg) of flammable, toxic or highly toxic refrigerant or ammonia shall be equipped with an emergency pressure control system in accordance with sections 1105.8.1.1 and 1105.8.2

1105.8.1 Automatic crossover valves. Each high-and-intermediate-pressure zone in a refrigeration system shall be provided with a single automatic valve providing a crossover connection to a lower pressure zone. Automatic crossover valves shall comply with sections 1105.8.1.1 through 1105.8.1.3.

1105.8.1.1 Overpressure light setpoint. Automatic crossover valves shall be arranged to automatically relieve excess system pressure to a lower pressure zone if the pressure in a high-or intermediate-pressure zone rises to within 15psi (108.4 kPa) of the setpoint for emergency pressure-relief devices.

1105.8.1.2 Manual operation. When required by the fire code official, automatic crossover valves shall be capable of manual operation.

1105.8.1.3 System design pressure. Refrigeration system zones are connected to a higher pressure zone by an automatic crossover valve shall be designed to safely contain the maximum pressure that can be achieved by interconnection of the two zones.

1105.8.2 Automatic emergency stop. An automatic emergency stop feature shall be provided in accordance with section 1105.8.2.1 and 1105.8.2.2

1105.8.2.1 Operation of an automatic crossover valve. Operation of an automatic crossover valve shall cause all compressors on the effected system to immediately stop. Dedicated pressure-sensing devices located immediately adjacent to crossover valves shall be permitted as a means for determining operation of a valve. To ensure that the automatic crossover valve system provides a redundant means of stopping compressors in an over pressure condition, high-pressure cutout sensors associated with compressors shall not be used as a basis for determining operation of a crossover valve.

1105.8.2.2 Overpressure in low-pressure zone. The lowest pressure zone in a refrigeration system shall be provided with a dedicated means of determining a rise in system pressure to within 15 psi (103.4 kPa) of the setpoint for emergency pressure-relief devices. Activation of the overpressure sensing device shall cause all compressors on the effected system to immediately stop.

Chapter 12

Table 1202.4 Delete without substitution

Lead Pipe FS WW-P-325B

Delete IMC section 1208.1.1 and substitute the following:

1208.1.1 Ground source heat pump loop systems. Before connection (header) trenches are backfilled, the assembled loop system shall be pressure tested with water at 100 psi (689 kPa) for 30 minutes with no observed leaks. Flow pressure loss testing shall be performed and the actual flow rates and pressure drops shall be compared to the calculated design values. If actual flow rate or pressure differs from calculated design values, the designer of record shall identify the problem and order corrections as required.

Chapter 13

Add the following new section 1301.2.1:

1301.2.1 Maximum inside fuel oil storage. Where connected to a fuel-Oil piping system, the maximum amount of fuel oil allowed inside any building shall be 1,320 gallons and the maximum amount of oil connected to any one- (1) appliance shall be 660 gallons. Where the amount of fuel oil stored inside a building exceeds 1,320 gallons the storage area shall be in compliance with the R.I. Fire Prevention Code and the State Building Code.

Add the following new section 1305.8:

1305.8 Fuel Oil Supply and Vent Piping: Fill and vent lines for above ground fuel storage tanks shall be permitted to be a minimum of 1 ¼ “in diameter for a single storage tank up to 500 gallon capacity.

Chapter 15

Referenced Standards

Delete without substitution

ASHRAE-2005 ASHRAE Fundamentals handbook-2005 603.2

APPENDIX B

Appendix B:

Delete APPENDIX B" in its entirety.