**510-RICR-00-00-1**

# TITLE 510 – BUILDING CODE COMMISSION

**CHAPTER 00 – N/A**

**SUBCHAPTER 00 – N/A**

PART 1 – State Building Code

## 1.1 Authority

The Building Code Standards Committee, in accordance with the rulemaking authority of R.I. Gen. Laws §§ 23-27.3-109.3(a) through (c) inclusive, has formally adopted and promulgated as the Rhode Island State Building Code, the provisions of the International Building Code (IBC), ~~2015~~2018 edition, as published by the International Code Council, Inc. (ICC), together with amendments thereto hereinafter set forth to the articles and sections of this code:

## 1.2 Incorporated Materials

A. The provisions of R.I. Gen. Laws Chapter 23-27.3 establishing administration and enforcement are hereby incorporated by reference. Chapter 1: Administration immediately follows and is supplemental to the General Laws. Editorial Note: Code users please note:

1. When purchasing or using the IBC ~~2015~~2018 code, please take note of the particular printing edition. Errata to that printing edition is available online directly at no charge at www.iccsafe.org/cs/codes/pages/errata.aspx or call the office of the State Building Code Commissioner at 401-889-5550 for further information.

2. Printed copies of the administrative and enforcement provisions of R.I. Gen. Laws Chapter 23-27.3 are available at the Office of the State Building Code Commission or online at http://www.rilin.state.ri.us/Statutes/TITLE23/23-27.3/INDEX.HTM

3. The International Building Code, ~~2015~~2018 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 Building Code ~~2015~~2018 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.

## 1.3 Chapter 1: Administration

Delete IBC sections 101.1 Title, 101.2 Scope and 101.2.1 Appendices and substitute the following:

101.1 Title

This Regulation shall be known as SBC-1-~~2019~~2021, the Rhode Island State Building Code, hereinafter referred to as "this code."

101.2 Scope

The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exceptions:

1. Detached one (1) and two(2) family dwellings and multiple single-family dwellings (town houses) not more than three (3) stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the SBC-2-~~2019~~2021, The Rhode Island One and Two-Family Dwelling Code.

2. Existing buildings undergoing repair, alterations or additions and changes of occupancy shall comply with the provisions of this code or the State Rehabilitation Code SRC-1-2002, Part 20 of this Subchapter (see R.I. Gen. Laws § 23-27.3-106.0).

101.2.1 Appendices

Delete appendices A, B, D, J, and K. Appendices C, E, F, G, H, I apply.

Delete IBC sections 101.4, and 101.4.1 through 101.4.7 Referenced Codes in its entirety and substitute the following:

101.4 Referenced Codes.

The other codes listed in Sections 101.4.1 through 101.4.7 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

101.4.1 Electrical.

The provisions of Rhode Island Electrical Code SBC-5-~~2019~~2021 (Part 5 of this Subchapter) 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.

101.4.2 Gas.

The provisions of the Rhode Island Fuel Gas Code SBC-19-~~2019~~2021 (Part 19 of this Subchapter) 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.

101.4.3 Mechanical.

The provisions of the Rhode Island Mechanical Code SBC-4-~~2019~~2021 (Part 4 of this Subchapter) shall apply wherever referenced in this code as the International Mechanical Code and shall apply to the installation, alterations, repairs and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

101.4.4 Plumbing.

The provisions of Rhode Island Plumbing Code SBC-3-~~2019~~2021 (Part 3 of this Subchapter) 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.

101.4.5 Property Maintenance.

The provisions of the Rhode Island State Property Maintenance Code SBC-6-~~2019~~2021 (Part 6 of this Subchapter) Provides requirements for continued use and maintenance buildings and property, and of related plumbing, mechanical, electrical and fire protection systems in existing residential and non-residential structures.

101.4.6 Fire Prevention Code.

The provisions of or references to the International Fire Code ~~2019~~2021 edition shall be cross referenced to the appropriate section of the Rhode Island Fire Code (450-RICR-00-00-1 through 10). The Chapters referencing construction standards will apply to either the Rhode Island Uniform Fire Code Standards {R.I. Gen. Laws § 23-28.01 *et seq.*} as referenced and amended NFPA 1 and NFPA 101 and those standards will apply when this code references such a section or requirement. These cross-references are not intended to impose any enforcement requirements on State or local fire officials, and any conflicts with the State Fire Safety Codes shall be resolved in favor of the more, restrictive standard, and that standard shall be enforced by the appropriate designated authority having jurisdiction.

101.4.7 Energy.

The provisions of the Rhode Island Energy Code SBC-8-~~2019~~2021 (Part 8 of this Subchapter) shall apply wherever referenced in this code as International Energy Conservation Code and shall apply to 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.

101.4.8 Swimming Pool and Spa Code

The Provisions of the Rhode Island Swimming Pool and Spa Code SBC-14-2021 (Part 14 of this Subchapter) shall apply whenever the International Swimming Pool and Spa Code is referenced in this code and shall apply to matters governing the design and construction of swimming pools and spas.

Delete IBC sections:

103, 104.1 to 104.8, 105.3, 105.3.1, 105.3.2, 105.5, 107.1, 107.3.1, 107.3.2, 107.3.4, 107.3.4.1, 108.2, 111.4, 113.1, 113.2, 113.3, 114.1, 114.2, 114.3, 115.1, 115.2, 115.3, 116.1, 116.2, 116.3, 116.4, 116.5.

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 R.I. Gen. Laws Chapter 23-27.3, the provisions of State law shall prevail. Where other provisions of this code refer to provisions of Chapter 1 Administration, or R.I. Gen. Laws Chapter 23-27.3 shall apply as appropriate.

## 1.4 Chapter 2: Definitions

Add the following definitions:

"Commissioner" means the State Building Code Commissioner, the Building Official responsible to enforce this code in accordance with the provisions of R.I. Gen. Laws § 23-27.3-108.2.

"Committee" means the Rhode Island Building Code Standards Committee

"Nightclub" means an assembly occupancy in which people congregate in high densities for social entertainment such as drinking and dancing and characterized by some or all of the following unique characteristics:

1. Low lighting levels
2. Entertainment by a live band or recorded music generating above-normal sounds
3. Later-than average operating hours
4. Tables and seating (if any) arranged or positioned so as to create ill-definable aisles
5. Flexible fuel loading
6. A specific area designated for dancing
7. Service facilities for alcoholic beverages and food
8. Potential for consumption of legal or illegal drug use contributing to delayed reaction time to emergency events
9. High occupant load density
10. Movable furnishings

The Building Official shall have the authority to determine whether a proposed use is deemed a nightclub or a restaurant (see also section 903.2.1.2).

## 1.5 Chapter 3: Use and Occupancy Classification

Delete IBC section 305.2 Day Care and substitute the following:

305.2 Day Care.

The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than eight children older than two and one half (2-1/2) years of age, shall be classified as a Group E occupancy.

305.2.~~3~~2 Eight or fewer children. A facility having eight (8) or fewer children receiving such day care shall be classified as part of the primary occupancy.

305.2.3 Eight or fewer children in a dwelling unit. A facility such as the above within a dwelling unit and having eight (8) or fewer children receiving such day care shall be classified as a Group R-3 occupancy or shall comply with the International Residential Code.

Delete IBC sections 308.2 Group I-1 and substitute the following:

308.~~3~~2 Group I-1.

This occupancy shall include buildings, structures, or parts thereof housing more than sixteen (16) persons, on a twenty-four (24) hours basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

1. Residential board and custodial care facilities
2. Assisted living facilities
3. Halfway houses
4. Group homes
5. Congregate care facilities
6. Social rehabilitation facilities
7. Alcohol and drug centers
8. Convalescent facilities

A facility such as the above with eight (8) or fewer persons shall comply with the International Residential Code in accordance with section 101.2. A facility such as above, housing at least nine (9) and not more than sixteen (16) persons, shall be classified as Group R-4.

308.~~3.5~~.2.4 Eight or fewer persons receiving care. A facility such as the above with eight (8) or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the International Residential Code provided an automatic sprinkler system is installed in accordance with section 903.3.1.3 or with section P2904 of the International Residential Code.

308.~~3~~2.3 Eight to sixteen persons receiving care. A facility such as above, housing not fewer than eight (8) and not more than sixteen (16) persons receiving such care, shall be classified as Group R-4.

Delete IBC section 308.3 Group I-2 and substitute the following:

308. ~~4~~3 Group I-2.

This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a twenty-four (24) hour basis of more than eight (8) persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

1. Child Care Facilities
2. Hospitals
3. Nursing homes (both intermediate-care facilities and skilled nursing facilities)
4. Mental hospitals
5. Detoxification facilities

A facility such as the above with six (6) to eight (8) persons shall be classified as a Use Group R-4.

A facility such as the above with five (5) or fewer persons shall comply with the International Residential Code in accordance with section 101.2.

308.3.2 Eight or fewer persons receiving care. A facility such as the above with eight (8) or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the International Residential Code provided an automatic sprinkler system is installed in accordance with section 903.3.1.3 or with section P2904 of the International Residential Code.

Delete IBC section 308.4.3 Child Care Facility and substitute the following.

308.4.3 Child Care Facility

Facility that provides care on a twenty-four (24) hour basis to more than eight (8) children two and one half (2 ½) years of age or less.

Detoxification Facilities

Facilities that serve patients who are provided treatment for substance abuse on a twenty-four (24) hour basis and who are incapable of self-preservation or who are harmful to themselves or others.

Hospitals and Mental Hospitals

Buildings or portions thereof used on a twenty-four (24) hour basis for the medical, psychiatric, obstetrical or surgical treatment of inpatients who are incapable of self-preservation.

Nursing Homes

Nursing homes are long-term care facilities on a twenty-four (24) hour basis, including both intermediate care facilities and skilled nursing facilities, serving more than five (5) persons and any of the persons are incapable of self-preservation.

Delete IBC section 308.5 I-4 Day Care Facilities and substitute the following:

308.6 Group I-4, Day Care Facilities.

This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than twenty-four (24) hours by individuals other than parents or guardians, relatives by blood marriage or adoption and in a place other than the home of the person cared for. A facility such as the above with eight (8) or fewer persons shall be classified as a Group R-3 or shall comply with International Residential Code in accordance with section 101.2. Places of worship during religious functions are not included.

Delete IBC Section 308.5.2 Child Care Facility and substitute the following:

308.~~6.1~~.5 Child Day Care Facility

A facility that provides supervision and personal care on less than a twenty-four (24) hour basis for more than eight (8) children two and one half (2-1/2) years of age or less shall be classified as Group I-4.

Exception: A child day care facility that provides care for more than eight (8) but no more than one hundred (100) children two and one half (2-1/2) years or less

of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

308.~~6.3~~.5.1 Classification as Group E. A child day care facility that provides care for more than eight (8) but no more than one hundred (100) children two and one half (2½) years or less of age, where the rooms in which the children are cared for are located on a level of exit discharge serving such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

308.~~6~~5.~~4~~3 Eight or fewer persons receiving care. A facility having eight (8) or fewer persons receiving custodial care shall be classified as part of the primary occupancy.

308.~~6.5~~5.4 Eight or fewer persons receiving care in a dwelling unit. A facility such as the above within a dwelling unit and having eight (8) or fewer persons receiving custodial care shall be classified as a Group R-3 occupancy or shall comply with the International Residential Code.

Delete IBC section 310.~~5~~4 Residential Group R-3 and 310.~~6~~ 5 R-4 and substitute the following:

310.~~5~~4 R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I and where buildings do not contain more than two dwelling units as applicable in section 101.2, or adult and child care facilities that provide accommodations for eight (8) or fewer persons of any age for less than twenty-four (24) hours. Adult and child care facilities that are within a single-family home are permitted to comply with the International Residential Code in accordance with section 101.2.

310.~~6~~5 R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than eight (8) but not more than sixteen (16) occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 except as otherwise provided for in this code or shall comply with the International Residential Code in accordance with section 101.2.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 except as otherwise provided for in this code or shall comply with the International Residential Code in accordance with section 101.2.

Delete IBC section 310.2 Definition of Residential Care/Assisted Living Facilities and substitute the following: 310.1.1 Definition

RESIDENTIAL CARE/ASSISTED LIVING FACILITIES.

A building or part thereof housing a maximum of sixteen (16) persons, on a twenty-four (24) hour basis, who because of age, mental disability or other reasons live in a supervised residential environment which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities. Residential care/assisted living facilities housing more than sixteen (16) persons shall be classified as a Group I-1.

## 1.6 Chapter 4

Add the following sections to IBC section 401 Scope:

401.2 Fire Alarm Systems.

The requirements herein prescribed for the design, operation and installation of fire alarm systems, detection devices, suppression systems, communications systems, etc. shall be construed as supplemental to any applicable provisions of Rhode Island State Fire Safety Code (450-RICR-00-00-1 through 10).

401.3 Fire Prevention Code.

The provisions of the International Fire Code 2019 Edition shall apply when this code directly references a section or requirement. These cross-references are not intended to impose any enforcement requirements on State and local fire officials, and any conflicts with the State Fire Safety Codes shall be resolved in favor of the stricter standard, and that standard shall be enforced by the appropriate designated authority having jurisdiction.

Add the following new sections:

IBC ~~SECTION~~ section ~~427~~429 ~~MANUFACTURED HOMES~~Manufactured Homes

~~427~~429.1 Manufactured Homes.

Manufactured homes are constructed in accordance with the Federal Department of Housing and Urban Development Part 3280 Manufactured Home Construction and Safety Standards. Refer to Appendix E of SBC2-2021~~19~~ the Rhode Island One and Two-Family Dwelling Code (Part 2 of this Subchapter) for specific provisions regarding permitting, foundation systems, additions, site utility connections and foundation and anchorage details.

IBC ~~SECTION~~ section ~~428~~430 ~~MODULAR CONSTRUCTION~~Modular Construction

~~428~~430.1 Modular Construction.

Buildings and structures partially or completely constructed off-site shall be constructed in conformance with this code or SBC-2-~~2015~~2021 the Rhode Island Residential One and Two-Family Code (Part 2 of this Subchapter) as appropriate for the use and occupancy. Manufacturers shall be registered with the Interstate Industrialized Building Commission (IIBC) and submit for approvals and permits in accordance with R.I. Gen. Laws Chapter 23-27.4 and IIBC Compact Regulations.

## 1.7 Chapter 7

Reserved

## 1.8 Chapter 9: Fire Protection System

Add the following section to IBC section 901 General.

901.~~9~~8 Other Codes.

Provisions governing where fire protection systems are required are also contained in the Rhode Island Fire Safety Code. The most restrictive provision of each code shall apply.

Delete IBC section 903.2.1.2 Group A-2 and substitute the following:

903.2.1.2 Group A-2.

An automatic sprinkler system shall be provided for Group A-2 occupancies where one (1) of the following conditions exists:

1. The fire area exceeds five thousand (5,000) square feet (464.5m$^2$)
2. The fire area has an occupant load of three hundred (300) or more.
3. The fire area is located on a floor other than the level of exit discharge.
4. Nightclubs with an occupancy load in a single fire area of more than one hundred fifty (150) occupants (see also § 1.4 of this Part).

Delete IBC section 903.2.3 Group E and substitute the following:

[F] 903.2.3 Group E.

An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than twenty thousand (20,000) square feet (1115 $m^2$) in area.

2. Throughout every portion of educational buildings below the lowest level of exit discharge serving that portion of the building.

Exception: An automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area where every classroom throughout the building has at least one (1) exterior exit door at ground level.

IBC section 903.3.1.1.1 Exempt Locations 1-4. -Add the following paragraph five (5)

5. In passenger elevator shafts, pits and mechanical rooms. If provided, the installation shall meet all requirements of this code, NFPA 13, the Rhode Island Fire Safety Code (450-RICR-00-00-1 through 10) and the Rhode Island Elevator Code (260-RICR-30-10-1).

Delete IBC section 906 in its entirety and substitute the following:

IBC section 906 Portable Fire Extinguishers

906.1 General.

Portable Fire Extinguishers shall be provided in accordance with the Rhode Island Uniform Fire Code.

Delete IBC section 907 in its entirety and substitute the following:

IBC section 907 ~~FIRE ALARM AND DETECTION SYSTEMS~~Fire Alarm and Detection Systems

907.1 General.

FIRE ALARM AND DETECTION SYSTEMS shall be provided in accordance with the Rhode Island Uniform Fire Code.

Delete section 915 and substitute the following

Section 915 Carbon Monoxide Detection

915.1 FIRE ALARM AND DETECTION SYSTEMS shall be provided in accordance with the Rhode Island Uniform Fire Code.

## 1.9- Chapter 10: Means of Egress

Delete IBC section 1010.1.4.4 and substitute the following:

1010.1.4.4 Locking Arrangements in Educational Occupancies

In group E and Group B educational occupancies egress doors in classrooms, offices and other occupied rooms shall be permitted to be provided with locking arrangements designed to keep intruders from entering the room where such arrangements are in full compliance with the Rhode Island Fire Code.

## 1.109 Chapter 11: Accessibility

Add the following definition to IBC section 1102.1.

CHILDREN:

Students in classes ranging from pre-kindergarten to sixth ($6^{th}$) grade. All other students are considered adults for the purposes of this Chapter.

Add the following section 1112 Children's' Features

Section 1112.0 Children's Features

1112.1 Children's Water Closets:

Where provided, at least one (1) shall comply with the following:

1. Clear floor space: Clear floor space for water closets shall comply with ICC/ANSI A117.1-2003-604.3.1. Clear floor space shall be permitted to be arranged to allow either a left-handed or right-handed approach.

2. Location: The centerline of the water closet shall be located eleven inches (11") (11" = 279 mm) from the nearest side wall for pre-kindergarten; eleven to fifteen inches (11" to 15") (11" to 15" = 279 mm to 381 mm) for kindergarten to the third ($3^{rd}$) grade and fifteen to eighteen inches (15" to 18") (15" to 18" = 381 mm to 457 mm) for fourth ($4^{th}$) grade to sixth ($6^{th}$) grade. The water closet shall also be located forty-two inches (42") (42" = 1067mm) from the centerline of the water closet to the opposite wall or closest edge of next fixture.

3. Height: Water closets shall be set at a height measured from the floor to the top of the seat as follows:

| | |
|---|---|
| Pre-kindergarten: | 11-1/2” to 12-1/2” (292mm to 318mm) |
| Kindergarten to third grade: | 12” to 15” (305mm to 381mm) |
| Fourth grade to sixth grade: | 15” to 17” (381mm to 343mm) |

4. Flush Controls: Controls for flush valves on water closets used by children shall be mounted on the wide side of water closet within twenty to thirty inches (20” to 30”) (20” to 30” = 508 mm to 762 mm) above the floor.

5. Toilet paper dispensers: Toilet paper dispensers used by children shall be centered above finished floor, as follows:

| | |
|---|---|
| Pre-kindergarten: | 14” (356mm) |
| Kindergarten to third grade: | 14” to 17” (356mm to 432mm) |
| Fourth grade to sixth grade: | 17” to 19” (432mm to 483 mm) |

1112.2 Children’s Grab Bars

1112.2.1

The water closet shall have two grab bars, forty-two inches (42”) (42” = 1067 mm) long, one mounted on the wall in back of the water closet and one on the side wall closest to the water closet and located no more than six inches (6”) (6” = 152 mm) from the interior corner where a tank prevents location of the rear grab bar, a bar may be installed three inches (3”) (3” = 76 mm) above the tank. Where a flushometer prevents the location of a forty-two inch (42”) (42” = 1067 mm) rear grab bar, one grab bar, thirty-six inches (36”) (36” = 914 mm) shall be installed to the side of the flushometer, located three inches (3”) (3” = 76 mm) from the closest edge of the flushometer.

1112.2.2 Height:

A grab bar shall be mounted from the floor to the top of the grab bar as follows:

| | |
|---|---|
| Pre-kindergarten: | 18” to 20” (457mm to 508mm) |
| Kindergarten to third grade: | 20” to 25” (508mm to 635mm) |
| Fourth grade to sixth grade: | 25” to 27” (635mm to 686mm) |

1112.2.3 Thickness:

The outside diameter of grab bars shall be as follows:

| | |
|---|---|
| Pre-kindergarten: | 1” (25mm) |
| Kindergarten to sixth grade: | 1-1/4” to 1-1/2” (32mm to 38mm) |

1112.3 Children’s Sink

Where provided at least one (1) sink including vanities shall comply with the following:

1112.3.1 Clear floor space:

A clear floor space complying with ICC/ANSI A117.1-2003-606.2 be provided in front of a sink to allow a forward approach. The clear floor space shall be on an accessible route and shall extend no more than a maximum of nineteen inches (19”)(19” = 483 mm) underneath the sink.

1112.3.2 Height:

Sinks shall be mounted with the rim no higher than thirty inches (30”) (30” = 762 mm) above the finish floor. A clearance of at least twenty-five inches (25”) (25” = 635 mm) above the finish floor to the bottom of the apron shall be provided. Knee and toe clearance shall be at least thirty inches (30”) (30” = 762 mm) wide and nineteen inches (19”) (19” = 483 mm) deep.

1112.3.3 Piping:

Sink traps and drains shall be located as close to rear walls as possible. Hot water and drainpipes exposed under sinks shall be recessed,

insulated, or guarded. There shall be no sharp or abrasive surfaces under sinks.

1112.3.4 Faucets:

Faucets shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. Lever-operated push-type, touch-type, or electronically controlled mechanisms are acceptable designs. If self-closing valves are used, the faucet shall remain open for at least ten (10) seconds.

1112.4 Children's Urinals

1112.4.1 Urinals:

Where one (1) or more urinal is provided, at least one (1) urinal shall be accessible.

1112.4.2 Height:

The accessible urinal shall be stall-type or wall-hung with an elongated rim at a maximum of fifteen inches (15") (15" = 381 mm) above the finish floor.

1112.4.3 Flush Controls:

Flush controls shall be a hand operated or automatic and shall be mounted no more than thirty inches (30") (30" = 762 mm) above the flush floor.

1112.5 Children's Mirror.

The top of any shelf and or bottom of any mirror which is provided above a sink shall be set with the bottom edge of the reflecting surface no higher than thirty-one inches (31") (31" = 787 mm) above the finish floor.

Children's Dispensers:

Towel dispensers, drying devices, or other types of devices and dispensers shall have at least one of each device mounted within the zone of reach, and at least one (1) of each device shall be located within reach of a person using the accessible sink.

1112.7 Children's Controls and Receptacles.

If controls, receptacles, or other equipment are provided, then at least one (1) of each shall be mounted no higher than thirty-six inches (36") (36" =

914 mm) above the floor to the centerline of the operable portion of the control.

## 1.110Chapter 13: Energy Efficiency

Delete in its entirety and substitute the following:

1301.1 Scope.

This Chapter governs the design and construction of buildings for energy efficiency.

1301. Criteria.

Buildings shall be designed in accordance with the Rhode Island Energy Code SBC 8-20211~~9~~ (Part 8 of this Subchapter).

## 1.121Chapter 14: Exterior Walls

Add the following new sub-section to IBC section 1405~~3~~4.1 General:

1405~~3~~4.1.1 Re-siding Exterior Walls.

Materials and methods of application used for re-siding or replacing an existing wall covering shall comply with the requirements of this section. New Exterior side wall covering shall not be installed without first removing existing wall coverings when any of the following conditions occur:

1. When the existing wall or wall covering is water-soaked or has deteriorated to the point that the existing wall or wall covering is not acceptable as a base for additional covering.

2. When the existing wall has three (3) or more applications of any wall covering.

    Exception: The total number of wall coverings shall not be limited when any of the existing wall coverings consists of asbestos cement board or asbestos cement shingles or any protective encapsulating or protective siding/layer immediately over the asbestos material.

3. Asbestos cement board or asbestos cement shingles and any protective encapsulating layer thereupon shall not be required to be removed unless the existing wall is unacceptable for use as a base for additional layers of wall covering.

4. Any disturbance, repair or removal of existing asbestos cement board or asbestos cement shingles shall be in accordance with all State and Federal Regulations.

Delete IBC section 1406.3 exceptions 3 and 4 and substitute as follows:

1406.3 Balconies and similar projections.

Balconies and similar projections of combustible construction, other than fire-retardant-treated wood, shall afford the fire-resistance rating required by Table 601 for floor construction or shall be of Type IV construction as described in section 602.4, and the aggregate length shall not exceed fifty percent (50%) of the building perimeter on each floor.

Exceptions:

1. On buildings of Types I and II construction, three (3) stories or less in height, fire-retardant-treated wood shall be permitted for balconies, porches, decks, and exterior stairways not used as required exits.

2. Untreated wood is permitted for pickets and rails, or similar guardrail devices that are limited to forty-two inches (42”) (42” = 1067 mm) in height.

3. Construction Types 3A and 5A are not required to meet the provisions of this section.

4. If the balcony is subject to deterioration as specified in section 2304.11.5, the provisions of 2304.11.2 shall prevail in lieu of this section’s fire resistance requirements for Types 3, 4 and 5 constructions.

## 1.132Chapter 15: Roof Assemblies and Rooftop Structures

Delete IBC section 1507.2.~~7~~6 attachment and substitute the following:

1507.2.~~7~~6 Attachment.

Asphalt strip shingles shall have a minimum of six (6) fasteners per shingle strip.

Exceptions:

1. Where the roof slope exceeds twenty (20) units vertical in twelve (12) units horizontal (20:12), special fastening details may be required by the manufacturer.

2. Fastening systems tested by the manufacturer to one hundred ten (110) MPH shall be permitted to be installed in any wind zone.

## 1.143 Chapter 16: Structural

Delete IBC section 1608.1 General and substitute the following:

1608.1 General.

Design snow loads shall be determined in accordance with section 7 of ASCE 7 using the ground snow load values determined by Table 1608.1, but the minimum flat roof snow load shall be not less than that determined by Table 1608.1. The design roof load shall not be less than that determined by section 1607.

Delete IBC section 1608.2 Ground Snow Load.

Add the following ~~new section~~ to IBC section 1608 Snow Loads.

1608.2 Structural Loads.

When a new building is to be constructed or an existing building extended to a greater height than an existing adjoining building, a determination of structural integrity of the roof of the adjoining building shall be made regarding the snow loads in accordance with section 1608.0 SNOW LOADS. The person intending to cause the construction or building height extension shall deliver written notice of intent to the owner of the potentially affected building. The notice shall request license to enter the potentially affected building to inspect and determine the existing building's capacity to sustain additional imposed snow drift load. The person causing such construction shall be liable and shall at their own expense preserve, protect and, if necessary, reconstruct those portions of the adjacent building affected by this construction. If the owner of the adjacent building refuses to allow inspection, protection or reconstruction as may be required, the person causing such new construction or building height extension shall notify, in writing, both the Building Official and the owner of the adjacent property. Such notification shall identify that the responsibility of providing inspection, protection or reconstruction to the adjacent building has become the exclusive responsibility of the owner of the adjacent property.

1609.3 Basic Wind Speed.

The basic wind speed, in mph, shall be determined by Table 1608.1.

Delete all IBC Figures 1609 and substitute Rhode Island Wind Speed Map Figure 1609 and Figure 1609 (A), and Rhode Island frost protection Figure 1609 (B)

RI TABLE 1608.1

| Municipality | Ground Snow Load, Pg (psf) | Minimum Flat Roof Snow Load, Pf (psf) | Wind Speed, $V^{ult}$ (mph) | | | Seismic Coefficients (g) | | Frost Depth |
|---|---|---|---|---|---|---|---|---|
| | | | Risk Category I<br><br>From IBC fig 1609(C) | Risk Category II<br><br>From IBC fig 1609(A) | Risk Category III-IV<br><br>From IBC fig 1609(B) | Ss | S1 | |
| Barrington | 30 | 30 | 125 | 135 | 146 | 0.175 | 0.061 | 3'-4" |
| Bristol | 30 | 30 | 126 | 137 | 148 | 0.174 | 0.060 | 3'-4" |
| Burrillville | 40 | 30 | 118 | 129 | 139 | 0.175 | 0.063 | 4'-6" |
| Central Falls | 35 | 30 | 122 | 132 | 143 | 0.178 | 0.062 | 4'-0" |
| Charlestown | 30 | 30 | 128 | 138 | 149 | 0.158 | 0.057 | 3'-4" |
| Coventry | 35 | 30 | 124 | 134 | 145 | 0.171 | 0.061 | 4'-0" |
| Cranston (west of 295) | 35 | 30 | 123 | 133 | 144 | 0.174 | 0.061 | 4'-0" |
| Cranston (east of 295) | 30 | 30 | 123 | 134 | 144 | 0.175 | 0.061 | 3'-4" |
| Cumberland | 40 | 30 | 120 | 131 | 142 | 0.178 | 0.063 | 4'-6" |

| East Greenwich | 30 | 30 | 125 | 136 | 146 | 0.172 | 0.060 | 3' 4" |
|---|---|---|---|---|---|---|---|---|
| East Providence | 30 | 30 | 123 | 134 | 144 | 0.177 | 0.061 | 3' 4" |
| Exeter | 35 | 30 | 126 | 136 | 147 | 0.168 | 0.059 | 4' 0" |
| Foster | 40 | 30 | 119 | 130 | 140 | 0.172 | 0.062 | 4' 6" |
| Glocester | 40 | 30 | 119 | 130 | 140 | 0.172 | 0.063 | 4' 6" |
| Hopkinton | 35 | 30 | 125 | 136 | 146 | 0.162 | 0.058 | 4' 0" |
| Jamestown | 30 | 30 | 128 | 139 | 149 | 0.164 | 0.058 | 3' 4" |
| Johnston | 35 | 30 | 122 | 133 | 143 | 0.174 | 0.061 | 4' 0" |
| Lincoln | 40 | 30 | 121 | 131 | 142 | 0.177 | 0.062 | 4' 6" |
| Little Compton | 30 | 30 | 129 | 140 | 151 | 0.164 | 0.057 | 3' 4" |
| Middletown | 30 | 30 | 128 | 139 | 150 | 0.168 | 0.058 | 3' 4" |
| Narragansett | 30 | 30 | 128 | 139 | 149 | 0.164 | 0.058 | 3' 4" |
| New Shoreham | 25 | 25 | 131 | 140 | 151 | 0.142 | 0.053 | 2' 6" |
| Newport | 30 | 30 | 129 | 140 | 150 | 0.164 | 0.058 | 3' 4" |
| North Kingstown | 30 | 30 | 126 | 137 | 147 | 0.167 | 0.059 | 3' 4" |
| North Providence | 35 | 30 | 122 | 132 | 143 | 0.176 | 0.062 | 4' 0" |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| North Smithfield | 40 | 30 | 119 | 130 | 140 | 0.176 | 0.063 | 4' 6" |
| Pawtucket | 35 | 30 | 122 | 133 | 143 | 0.178 | 0.062 | 4' 0" |
| Portsmouth | 30 | 30 | 127 | 138 | 149 | 0.170 | 0.059 | 3' 4" |
| Providence | 30 | 30 | 123 | 133 | 144 | 0.176 | 0.062 | 3' 4" |
| Richmond | 35 | 30 | 126 | 136 | 147 | 0.164 | 0.059 | 4' 0" |
| Scituate | 35 | 30 | 122 | 132 | 143 | 0.173 | 0.061 | 4' 0" |
| Smithfield | 40 | 30 | 120 | 130 | 141 | 0.175 | 0.062 | 4' 6" |
| South Kingstown | 30 | 30 | 128 | 138 | 149 | 0.161 | 0.058 | 3' 4" |
| Tiverton | 30 | 30 | 127 | 138 | 149 | 0.169 | 0.058 | 3' 4" |
| Warren | 30 | 30 | 125 | 136 | 147 | 0.176 | 0.060 | 3' 4" |
| Warwick | 30 | 30 | 125 | 135 | 146 | 0.174 | 0.060 | 3' 4" |
| West Greenwich | 35 | 30 | 124 | 134 | 145 | 0.169 | 0.060 | 4' 0" |
| West Warwick | 35 | 30 | 124 | 134 | 145 | 0.172 | 0.060 | 4' 0" |
| Westerly | 30 | 30 | 126 | 137 | 147 | 0.158 | 0.057 | 3' 4" |
| Woonsocket | 40 | 30 | 119 | 130 | 140 | 0.177 | 0.063 | 4' 6" |
| Blue color by model code Wind borne Debris Region greater than 130 MPH V-ult within a mile of “mean high coastal water | | | | | | << Green Color Wind borne Debris Region In areas where the ultimate | | |

| | | | |
|---|---|---|---|
| ~~line" >>~~ | | | ~~design wind speed is 140 mph (63.6 m/s) or greater~~ |

TABLE 1608.1

| Municipality | Ground Snow Load, Pg (psf | Minimum Flat Roof Snow Load, Pf (psf) | Basic Wind Speed, V (mph) | | | | Seismic Coefficients | | Frost Depth |
|---|---|---|---|---|---|---|---|---|---|
| | | | Risk Category I | Risk Category II | Risk Category III | Risk Category IV | Ss | S1 | |
| | | | From fig 1609.3 (4) | From fig 1609.3 (1) | From fig 1609.3 (2) | From Fig 1609.3 (3) | | | |
| Barrington | 30 | 30- | 117 | 127 | 135 | 139 | 0.199 | 0.055 | 3'-4"- |
| Bristol- | 30 | 30- | 118 | 128 | 137 | 140 | 0.198 | 0.054 | 3'-4" |
| Burrillville- | 40 | 30- | 111 | 121 | 130 | 135 | 0.192 | 0.056 | 4'-6"- |
| Central Falls- | 30 | 30- | 114 | 124 | 133 | 137 | 0.201 | 0.056 | 4'-0"- |
| Charlestown- | 30 | 30- | 121 | 131 | 140 | 143 | 0.182 | 0.051 | 3'-4"- |
| Coventry- | 35 | 30- | 116 | 126 | 135 | 138 | 0.193 | 0.056 | 4'-0"- |
| Cranston- | 30 | 30- | 116 | 126 | 134 | 138 | 0.197 | 0.055 | 4'-0"- |
| Cumberland- | 40 | 30- | 116 | 123 | 131 | 136 | 0.204 | 0.057 | 4'-6"- |
| East Greenwich | 30 | 30- | 118 | 128 | 136 | 140 | 0.193 | 0.054 | 3'-4"- |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| East Providence- | 30 | 30- | 115 | 126 | 134 | 138 | 0.200 | 0.055 | 3'-4"- |
| Exeter- | 35 | 30- | 118 | 128 | 137 | 140 | 0.191 | 0.053 | 4'-0"- |
| Foster- | 40 | 30- | 112 | 123 | 131 | 135 | 0.188 | 0.055 | 4'-6"- |
| Glocester- | 40 | 30- | 112 | 122 | 135 | 135 | 0.190 | 0.055 | 4'-6"- |
| Hopkinton- | 35 | 30- | 119 | 128 | 137 | 141 | 0.186 | 0.052 | 4'-0"- |
| Jamestown- | 30 | 30- | 108 | 121 | 131 | 139 | 0.190 | 0.052 | 3'-4"- |
| Johnston- | 35 | 30- | 114 | 125 | 133 | 137 | 0.196 | 0.055 | 4'-0"- |
| Lincoln- | 40 | 30- | 113 | 124 | 132 | 136 | 0.200 | 0.056 | 4'-6"- |
| Little Compton- | 30 | 30- | 121 | 131 | 140 | 144 | 0.189 | 0.052 | 3'-4"- |
| Middletown- | 30 | 30- | 121 | 131 | 139 | 143 | 0.191 | 0.053 | 3'-4"- |
| Narragansett- | 30 | 30- | 121 | 131 | 140 | 143 | 0.187 | 0.052 | 3'-4"- |
| New Shoreham- | 25 | 25- | 124 | 134 | 143 | 149 | 0.165 | 0.048 | 2'-6"- |
| Newport- | 30 | 30- | 121 | 131 | 140 | 144 | 0.189 | 0.052 | 3'-4"- |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| North Kingstown | 30 | 30- | 119 | 129 | 138 | 141 | 0.192 | 0.053 | 3'-4"- |
| North Providence- | 35 | 30- | 114 | 124 | 133 | 137 | 0.198 | 0.056 | 4'-0"- |
| North Smithfield- | 40 | 30- | 112 | 122 | 131 | 135 | 0.198 | 0.056 | 4'-6"- |
| Pawtucket- | 35 | 30- | 114 | 125 | 133 | 137 | 0.201 | 0.056 | 4'-0"- |
| Portsmouth- | 30 | 30- | 120 | 129 | 138 | 142 | 0.195 | 0.053 | 3'-4"- |
| Providence- | 30 | 30- | 115 | 125 | 134 | 138 | 0.199 | 0.055 | 3'-4"- |
| Richmond- | 35 | 30- | 119 | 129 | 137 | 141 | 0.187 | 0.053 | 4'-0"- |
| Scituate- | 35 | 30- | 114 | 132 | 133 | 137 | 0.192 | 0.055 | 4'-0"- |
| Smithfield- | 40 | 30- | 113 | 123 | 131 | 136 | 0.196 | 0.056 | 4'-6"- |
| South Kingstown | 30 | 30- | 121 | 130 | 139 | 143 | 0.186 | 0.052 | 3'-4"- |
| Tiverton- | 30 | 30- | 119 | 129 | 138 | 142 | 0.196 | 0.056 | 3'-4"- |
| Warren- | 30 | 30- | 114 | 127 | 136 | 140 | 0.199 | 0.055 | 3'-4"- |
| Warwick- | 30 | 30- | 117 | 127 | 136 | 139 | 0.197 | 0.054 | 3'-4"- |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| West Greenwich | 35- | 30- | 117 | 127 | 135 | 139 | 0.190 | 0.054 | 4'-0"- |
| West Warwick- | 30- | 30- | 116 | 126 | 135 | 139 | 0.194 | 0.054 | 4'-0"- |
| Westerly- | 30- | 30- | 120 | 137 | 138 | 142 | 0.190 | 0.054 | 3'-4"- |
| Woonsocket- | 40- | 30- | 112 | 122 | 130 | 135 | 0.193 | 0.054 | 4'-6"- |
| Blue color by model code Wind-borne Debris Region greater than 130 MPH V-ult within a mile of “mean high coastal water line” >> | | | | | | << Green Color Wind-borne Debris Region In areas where the ultimate design wind speed is 140 mph (63.6 m/s) or greater | | | |

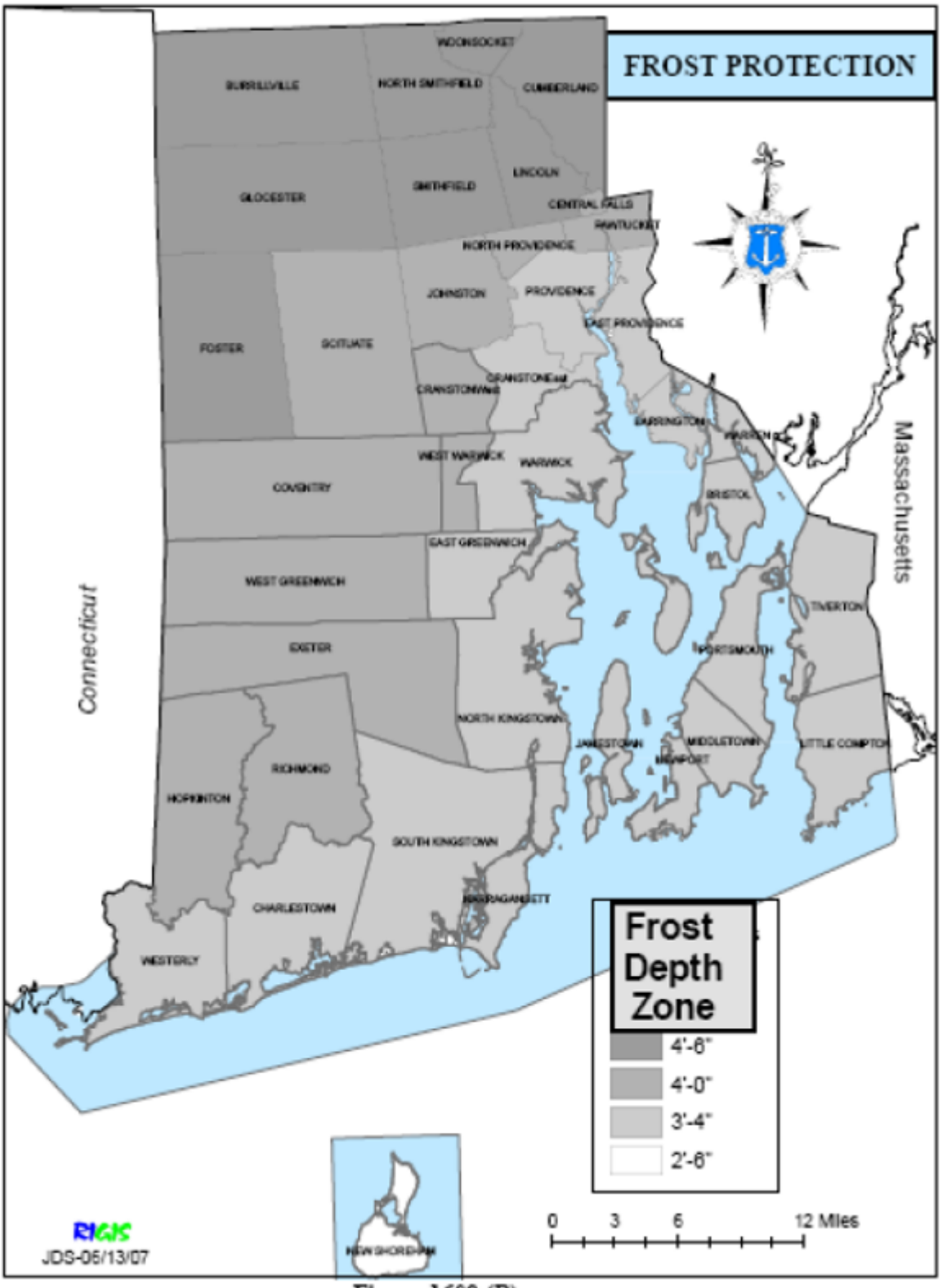
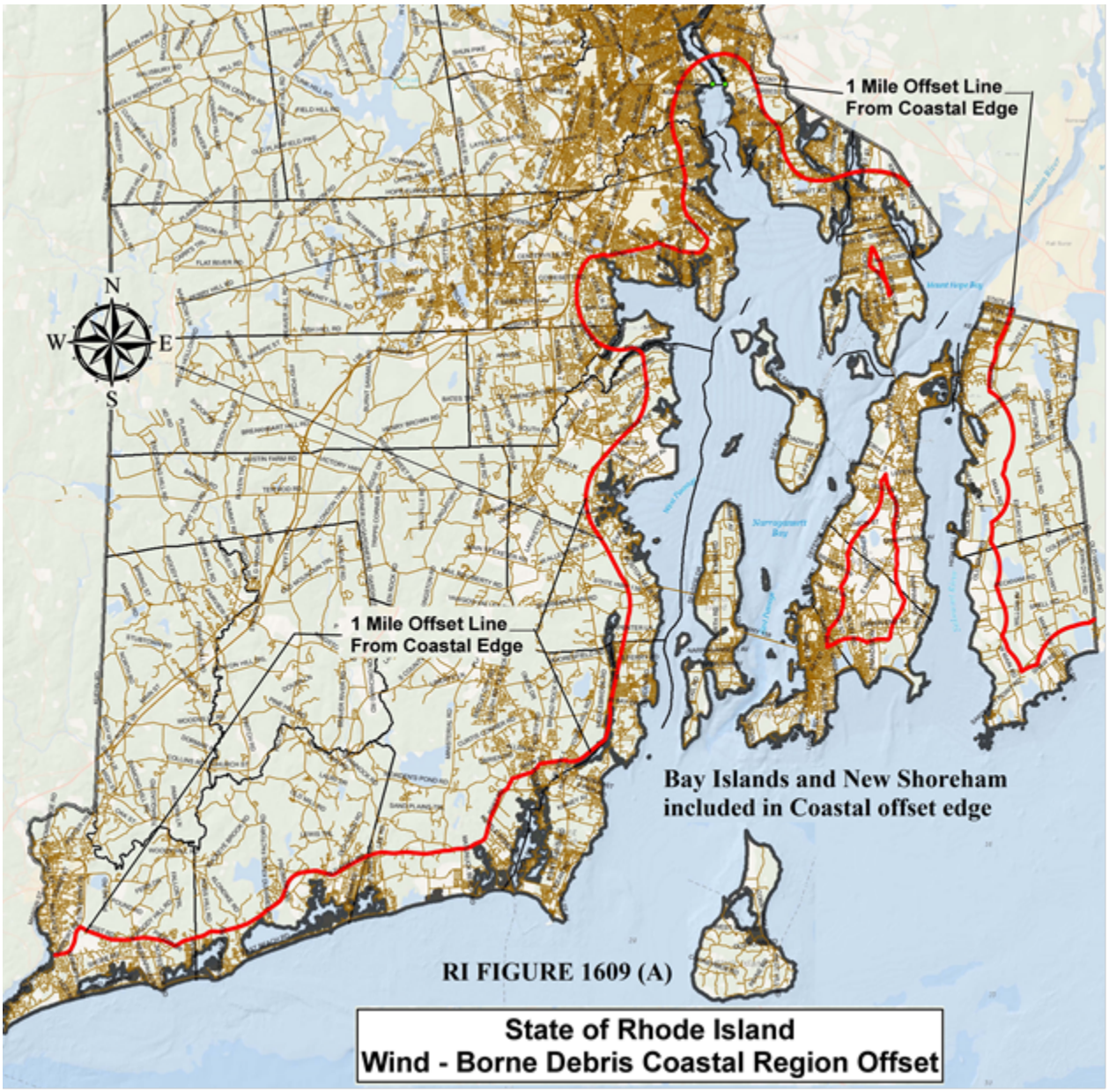



Figure 1609 (B)

Delete IBC section 1613.3.1 and substitute the following:

1613.3.1 Acceleration parameters.

The parameters $S_S$ and $S_1$ for each Rhode Island community are given in Table 1608.1.




## 1.154Chapter 18: Soils and Foundations

Delete IBC section 1801.3 and substitute the following

~~1801.3~~ 1809.5 Frost protection.

Except where otherwise protected from frost, foundation walls, piers and other permanent supports of buildings and structures shall be protected by one or more of the following methods:

1. See Rhode Island Frost Depth values in Table 1608.1. and Figure 1608.1

2. Construction in accordance with ASCE 32; 05

3. Erecting on solid rock

Exception: Free-standing buildings meeting all of the following conditions shall not be required to be protected:

1. Classified in Occupancy Category I, in accordance with section 1604.5;

2. Area of six hundred (600) square feet (56 $M^2$) or less for light-frame construction or four hundred (400) square feet (37 $m^2$) or less for other than light-frame construction; and

3. Eave height of ten feet (10') (3048 mm) or less

Footings shall not bear on frozen soil unless such frozen condition is of a permanent character.

## 1.165 Chapter 21: Masonry

Reserved

## 1.176 Chapter 23: Wood

Add the following exception to IBC section 2303.1.1 Lumber

Exception:

Native Lumber used in accordance with Rhode Island amendment section 2310.

Add the following new section 2310 Native Lumber:

2310 Native Lumber.

2310.1 Scope:

The provisions of this section shall govern the use of Native Lumber in accordance with R.I. Gen. Laws § 23-27.3-109.0 of the State Building Code.

Native Lumber is unmarked structural lumber from wood processed in the State of Rhode Island by a mill registered in accordance with provisions of this code.

Such lumber which is not grade marked or certified by a recognized grading organization designated under section 2303.1.1 shall be classified as an ordinary material and is not required to meet the test requirement of section 1709.2 and shall be permitted for use as follows.

2310.2 Identification and Use:

1. The producing mills shall sell or provide the lumber directly to the ultimate consumer or his contract builder for use in an approved structure;

2. The providing mill shall certify in writing to the consumer or builder on a form to be provided by the State Building Code Standards Committee that the quality and safe working stresses of such lumber are equal to or exceed No. 2 grade in accordance with grading practices established by an approved lumber grading or approved testing agency.

Exception: Load bearing walls shall be of stud grade minimum.

This certification shall be filed with the local building official having jurisdiction as part of the building permit application;

3. Native Lumber shall be limited to the following uses:

a. One (1) and two (2)family dwellings not exceeding three (3) stories in height, or:

b. General building construction types 3B, 4 or 5B not exceeding ten thousand (10,000) square feet of cumulative floor area or thirty-five feet (35') in height, but not to exceed two (2) stories, or:

c. Those low stress buildings not intended for human habitation such as barns, sheds, agricultural, detached garages, outbuildings and other accessory structures; or

d. Non-structural and non-fire rated applications in any use group of Type 3, 4 or 5 constructions.

Uses not permitted: Native lumber shall not be used in engineered plate-truss systems unless such lumber is graded in accordance with section 2303.1.1.

2310.3 Native Softwoods and Hardwoods

Native hardwood or softwood lumber may be used in post and beam timber type construction per section 602.4. Such uses as beam, girders, headers, and column supports will require engineering evaluation for the allowable design values and duration of loading factors for all buildings other than One (1) & Two (2) Family Dwellings.

Native lumber located near or in contact with the ground shall be naturally durable or pressure-treated in accordance with the provisions of section 2304.12.

2310.4 Sizing Criteria for Native Softwood Lumber

1. Sizing criteria: For lumber sized in accordance with the AF&PA NDS-01, conventional span tables in this code shall be permitted to be used for establishing span and spacing characteristics for all structural members.

2. Stress increases: Lumber which is sized in excess of the dimensions established by the AF&PA NDS-01 for the given nominal size referenced shall be allowed to have increased loads providing structural calculations are submitted verifying such increases. See Table 2310.

2310.5 Moisture Content

The moisture content for structural framing shall be nineteen percent (19%) or less unless the producer indicates that the lumber is surfaced green.

2310.6 Post and Beam Type Structures

Native hardwood and softwood lumber are permitted in post and beam timber-type structures. Design drawings and calculation shall be by a Rhode Island registered architect or engineer and submitted to the building official for approval.

2310.7 Responsibilities

The building official shall indicate the use of native lumber on the building permit application under the heading “Description of work to be performed” and also the name of the mill providing the native lumber.

The building official shall have the right to reject any lumber of questionable quality based on visual observation.

Table 2310

Native Lumber Allowable Stress

| Actual Lumber Size Closest Size which does not exceed the Dimensions Shown | | Multiplier Factor Lumber Based on Width | Factor to be Added to Column 3 Factor for Lumber Oversized in Thickness | |
|---|---|---|---|---|
| Column 1 | Column 2 | | Column 4 | |
| Nominal Size | Actual Size Thickness Width | | Thickness Increase of ¼” to ½” | Thickness Increase of over ½” to 1” |
| 3 x 8 | 2-1/2 x 7-1/2 | 1.0 x Fs | +0.10 | +0.20 |
| | X 7-3/4 | 1.07 | | |
| | X 8 | 1.14 | | |
| 3 x 10 | 2-1/2 x 9-1/2 | 1.0 | +0.10 | +0.20 |
| | X 9-3/4 | 1.05 | | |
| | X 10 | 1.11 | | |
| 3 x 12 | 2-1/2 x 11-1/2 | 1.0 | +0.10 | +0.20 |
| | X 11-3/4 | 1.04 | | |
| | X 12 | 1.09 | | |

| | | | | |
|---|---|---|---|---|
| 3 x 14 | 2-1/2 x 13-1/2 | 1.0 | +0.10 | +0.20 |
| | X 13-3/4 | 1.04 | | |
| | X 14 | 1.07 | | |
| 4 x 10 | 3-1/2 x 9-1/2 | 1.0 | +0.07 | +0.14 |
| | X 9-3/4 | 1.05 | | |
| | X 10 | 1.11 | | |
| 4 x 12 | 3-1/2 x 11-1/2 | 1.0 | +0.07 | +0.14 |
| | X 11-3/4 | 1.04 | | |
| | X 12 | 1.09 | | |
| 4 x 14 | 3-1/2 x 13-1/2 | 1.0 | +0.07 | +0.14 |
| | X 13-3/4 | 1.04 | | |
| | X 14 | 1.08 | | |

| Notes to Table 2310 | |
|---|---|
| Note 1. | Notation FS is the allowable maximum fiber stress for the assumed grade as established by this code in section 2309.2.2 F's ("operating" stress) is the modified allowable maximum fiber stress which may be used in the span tables and for calculating required lumber sizes. F's is found by multiplying Fs by the factors given in the table |
| Note 2. | Table Columns |

<table>
<tr><td>Column 1</td><td colspan="3">Is the nominal commonly used lumber size</td></tr>
<tr><td>Column 2</td><td colspan="3">Is a list of actual sizes of the supplied lumber</td></tr>
<tr><td>Column 2</td><td colspan="3">Lists the sizes on the basis of a constant thickness and a width increasing by one quarter of one inch (1/4”) and one half of one inch (1/2”)</td></tr>
<tr><td>Column 3</td><td colspan="3">Gives the multiplier for increasing the assumed allowable stress (Fs) based on the increases in width as listed in Column 2.</td></tr>
<tr><td>Column 4</td><td colspan="3">Gives the multiplier for increasing the assumed allowable stress (Fs) based on increases in thickness</td></tr>
<tr><td rowspan="5">Note 3</td><td colspan="3">Example: Fiber stress for assumed grade = one thousand (1,000) psi – Actual size 3-1/8 x 9-3/4</td></tr>
<tr><td>Nominal size 3 X 10</td><td>1. Multiplier factor for Width =</td><td>1.05</td></tr>
<tr><td>3-1/8 = increase of 5/8” total</td><td>2. Multiplier factor for Thickness=</td><td>.20</td></tr>
<tr><td></td><td>3.Operating stress F’s = 1.25 x Fs F’s = 1.25 x 1,000 = 1,250</td><td>Sum = 1.25</td></tr>
<tr><td colspan="3">Therefore, F’s = 1,250 psi is used for calculations and in the span tables</td></tr>
</table>

## 1.187Chapter 27: Electrical

### 1.187.1 GENERAL

Delete all references to IEC and substitute Rhode Island Electrical Code SBC-5-20212119 (Part 5 of this Subchapter).

Delete all reference to any other International Code (IBC, IRC, IMC, etc.) and refer to appropriate SBC Regulations. (See Amendment 2701.6).

The following revisions are to Chapter 27 of SBC-1-20212119:

Delete existing Chapter 27 in its entirety and substitute the following:

2701.1 Scope.

This Chapter governs the electrical components, equipment and systems used in buildings and structures covered by this code. Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of SBC-5-2021~~19~~ (Part 5 of this Subchapter).

Permits.

Electrical wiring including elevators and other conveyances as regulated by the Department of Labor and Training, or data, telecommunications, video and sound installations, shall not be installed in a building or structure, nor shall alteration of an existing electrical wiring system be made until a permit has been issued therefore as required in R.I. Gen. Laws § 23-27.3-113.3.1.

Exception: Work not covered in SBC-5-2021~~19~~ section 90.2(b) 1-5 inclusive (Part 5 of this Subchapter). As used in section 4 & 5 a "utility" is a company or business regulated and/or licensed by the Rhode Island Public Utilities Commission. Subcontractors employed by a utility are not exempt from permit requirements unless the proposed work is being performed in the public right-of-way or within public utility easements. It shall be unlawful to use or allow the use of, or to supply current for, an electrical system in a building or structure, or to allow the use of, or to supply current for data, telecommunications, video or audio installations unless the required permits have been issued and approved by the authority having jurisdiction.

2701.3 Certification.

Except for use group R (residential use), construction documents shall bear the seal of a Registered Professional Engineer who shall provide the services as required by R.I. Gen. Laws § 23-27.3-128.2.2, except as modified by the authority enforcing this Code, or by the Board for Registration of Professional Engineers.

2701.4 Re-inspection.

An electrical installation from which an electrical service has been discontinued for a period of thirty (30) days or more shall not have service

restored until the system has been re-inspected and a new certificate of inspection issued.

> Exception: Re-inspection of dwelling units shall only be required if the electrical service has been discontinued for a period of one (1) year.

2701.5 Reference

The following section is taken directly from current R.I. Gen. Laws (R.I. Gen. Laws § 42-66.9-1) for references purposes only:

> 2701.5 Emergency generators for Housing for the Elderly. All housing for the elderly complexes, as defined in R.I. Gen. Laws § 42-66.1-2 which are serviced by one (1) or more elevators and/or electrically powered chair lifts, and which include more than one hundred fifty (150) residential living units in a single building shall be equipped with emergency generators which shall provide sufficient power to provide emergency lighting to all common areas and a community room and power to operate the elevators and a refrigerator in a common area. Generator systems shall be in accordance with the national electric code and R.I. Gen. Laws § 23-28.24-9.

2701.6 References.

Where this code references other ICC codes, use the appropriate Regulation as adopted by the State of Rhode Island and SBC-5-2021~~19~~ (Part 5 of this Subchapter) for the IEC. References to the International Fire Code (IFC) and its requirements are deleted and refer to the Rhode Island State Fire Safety Code (450-RICR-00-00-1 through 10) (for requirements and enforcement by that authority having jurisdiction.

2701.7 Other Codes.

The Rhode Island Uniform Fire Safety Code (450-RICR-00-00-1 through 10) contains provisions for specific wiring methods for fire alarms, signaling systems, and other building fixtures such as exit signage, emergency lighting, and emergency and standby power systems among others. Refer to the latest editions of that code for the latest provisions.

IBC ~~SECTION~~ section 2702: ~~EMERGENCY AND STANDBY POWER SYSTEMS~~Emergency and Standby Power

2702.1 Installation. Emergency and standby power systems shall be installed in accordance with the SBC-5-2021~~19~~ (Part 5 of this Subchapter), NFPA 110 and NFPA 111.

2702.2 Where required. Emergency and standby power systems shall be provided where required by sections 2702.2.1 through 2702.2.19.

2702.2.1 Group A Occupancies.

Emergency power shall be provided for voice communication systems in Group A occupancies in accordance with section 907.2.1.2.

2702.2.2 Smoke control systems. Standby power shall be provided for smoke control systems in accordance with section 909.11.

2702.2.3 Exit signs. Emergency power shall be provided for exit signs in accordance with section 1003.2.10.5.

2702.2.4 Means of egress illumination. Emergency power shall be provided for means of egress illumination in accordance with section 1003.2.11.2.

2702.2.5 Accessible means of egress elevators. Standby power shall be provided for elevators that are part of an accessible means of egress in accordance with section 1003.2.13.3.

2702.2.6 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors in accordance with section 1003.3.1.3.3.

2702.2.7 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities in accordance with section 415.9.10.

2702.2.8 Membrane structures. Standby power shall be provided for auxiliary inflation systems in accordance with section 3102.8.2. Emergency power shall be provided for exit signs in temporary tents and membrane structures in accordance with the International Fire Code.

2702.2.9 Hazardous materials. Emergency or standby power shall be provided in occupancies with hazardous materials in accordance with section 414.5.4.

2702.2.10 Highly toxic and toxic materials. Emergency power shall be provided for occupancies with highly toxic to toxic materials in accordance

with the International Fire Code and Rhode Island State Fire Safety Codes (450-RICR-00-00-1 through 10).

2702.2.11 Organic peroxides. Standby power shall be provided for occupancies with organic peroxides in accordance with the International Fire Code and Rhode Island State Fire Safety Codes (450-RICR-00-00-1 through 10).

2702.2.12 Pyrophoric materials. Emergency power shall be provided for occupancies with pyrophoric materials in accordance with the International Fire Code and Rhode Island State Fire Safety Codes (450-RICR-00-00-1 through 10).

2702.2.13 Covered mall buildings. Covered mall buildings exceeding fifty thousand (50,000) square feet (4645 $m^2$) shall be provided with standby power systems which are capable of operating the emergency voice/alarm communication.

2702.2.14 High rise buildings. Emergency and standby power shall be provided in high rise buildings in accordance with Chapter 27 and for the items listed below:

1. Fire command center.
2. Fire pumps.
3. Emergency voice/alarm communication systems.
4. Lighting for mechanical equipment rooms.
5. Elevators.

2702.2.15 Underground buildings. Emergency and standby power shall be provided in underground buildings in accordance with sections 405.9 and 405.10.

2702.2.16 Group I-3 occupancies. Emergency power shall be provided for doors in Group I-3 occupancies in accordance with section 408.4.2.

2702.2.17 Airport traffic control towers. Standby power shall be provided in airport traffic control towers in accordance with section 412.1.5.

2702.2.18 Elevators. Standby power for elevators shall be provided as set forth in section 3003.1.

2702.2.19 Smoke proof enclosures. Standby power shall be provided for smoke proof enclosures as required by section 909.20.

2702.3 Maintenance. Emergency and standby power systems shall be maintained and tested in accordance with the Rhode Island State Fire Safety Codes (450-RICR-00-00-1 through 10).

## 1.198 Chapter 28

Delete IBC section 2801.1 Scope and substitute the following:

2801.1 Scope.

Mechanical appliances, equipment and systems shall be constructed, installed and maintained in accordance with SBC-4-20211~~9~~ (Part 4 of this Subchapter) the Rhode Island Mechanical Code and SBC-19-20211~~9~~ (Part 19 of this Subchapter) the Rhode Island Fuel Gas Code. Masonry chimneys, fireplaces and barbecues shall comply with the Rhode Island Mechanical Code (Part 4 of this Subchapter) and Chapter 21 of this code.

## 1.2019 Chapter 29

Delete IBC section 2901. Scope and substitute the following:

2901.1 Scope.

The provisions of this Chapter and SBC-3-20211~~9~~, the Rhode Island Plumbing Code shall govern the erection, installation, repairs, relocation, replacement, addition to, use or maintenance or plumbing equipment and systems.

P2902.2 Add the following new exception #4

4. Separate facilities shall not be required in existing structures or tenant spaces located within existing building with a total occupant load of fewer than fifty (50).

## 1.210 Chapter 30: Elevators and Conveying Systems

Delete IBC section 3001.1 Scope and substitute the following:

3001.1 SCOPE

Except as may otherwise be provided by statute, the provisions of this Chapter shall control the design, construction and installation of all special hoisting and conveying equipment hereafter installed, relocated or altered in all buildings or

structures. The design, construction, installation, maintenance, relocation and operation of all elevators, dumbwaiters, moving stairways, moving walks, and certain elevating devices used to handle materials only, shall be subject to the Rules and Regulations adopted and enforced by the Rhode Island Department of Labor and Training, Division of Occupational Safety, Elevator Unit. Portable elevating devices not covered by this Chapter or by the Department of Labor, shall be constructed, operated and maintained in compliance with accepted engineering practice.

Delete IBC section 3001.2 Referenced standards and substitute the following:

3001.1.1 PERMITS:

Permits for the installation of elevators, dumb waiters, moving stairways, moving walks, and certain elevating devices used to transport materials and personnel shall be issued only by the Department of Labor and Training, Division of Occupational Safety, Elevator Unit. -Permits for all other devices shall be issued by the building official.

## 1.221 Chapter 31: Special Construction

Delete IBC section 3102.1 and substitute the following:

3102.1 General

The provisions of this section shall apply to air-supported, air-inflated, membrane-covered cable and membrane-covered frame structures, collectively known as membrane structures, erected for a period of one hundred eighty (180) days or longer. Those erected for a shorter period of time shall comply with the Rhode Island Uniform Fire Code. Those erected for one hundred eighty (180) days or longer are also regulated by existing code section 3103 Temporary Structures; a Rhode Island amendment to the International model code.

Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, greenhouses and similar facilities not used for human occupancy are required to meet only the requirements of sections 3102.3.1 and 3102.7. Membrane structures erected on a building, balcony, deck or other structures for any period of time shall comply with this section.

Delete ~~section~~ IBC section 3102.2 Definitions of Membrane – Covered Cable Structures and Membrane – Covered Frame Structure and substitute the following

3102.2 Definitions.

“Membrane-covered cable structure” means a non-pressurized structure in which a mast and cable system provides support and tension to the membrane weather barrier and the membrane imparts stability to the structure. Including but not limited to “TENTS”.

“Membrane-covered frame structure” means a non-pressurized building wherein the structure is composed of a rigid framework to support a tensioned membrane which provides the weather barrier. Including but not limited to “TENTS.”

Delete IBC section 3103 Temporary Structures in its entirety and substitute the following:

SECTION 3103.0 TEMPORARY STRUCTURES

3103.0 General:

Pursuant to a variance granted by the Board of Appeals the Building Official shall issue a permit for temporary construction as approved by the Board of Appeal. Such permits shall be limited as to time of service but such temporary construction shall not be permitted for more than one (1) year.

The building official shall be permitted to issue permits for temporary construction limited to buildings of less than four hundred (400) square feet and all construction trailers. Such permits shall be limited as to time of service but no such construction shall be permitted to remain in place for more than one (1) year or the time scheduled for the construction project.

3103.2 Special Approval

All temporary construction, when intended to be occupied by the owner, employee, or general public shall conform to structural strength, fire safety, means of egress, light, ventilation and sanitary requirements of the Code necessary to insure the public health, safety and general welfare.

3103.3 Termination of Approval

The building official is hereby authorized to terminate such special approval and to order demolition and/or removal of any such construction at his discretion.

Add the following new section to Chapter 31

SECTION 3112 FABRIC STRUCTURES

3112.1 Definition

Fabric Structures are structures utilizing wood, metal or plastic frames and covered with cloth, canvas, glass or plastic material, excluding tents, agricultural and horticultural greenhouses, and furnishings such as umbrellas, awnings and canopies or portable shade canopies.

3112.2 Fabric Structures:

Fabric Structures: Fabric Structures shall be located in accordance with applicable local zoning code provisions. Permits shall be required for all fabric structures. Fabric structures less than four hundred (400) square feet in area and installed for a period not exceeding one (1) year shall be installed in accordance with manufacturer's installation instructions. Fabric structures greater than four hundred (400) square feet in area or intended to be in place for a period exceeding twelve (12) months shall only be approved pending a satisfactory decision by the State or local Building Code Board of Appeals, unless full code compliance for permanent structures in all respects is demonstrated to the satisfaction of the local building official. The State Fire Marshal or his authorized representative shall determine whether the installation is subject to provisions of the State Fire Safety Code prior to issuance of the permit.

Exceptions:

1. Agricultural and horticultural greenhouses used primarily for growing.
2. Livestock shelters arts/crafts, flea markets, etc. of limited duration consisting of small booths and multiple vendors, and as may be properly licensed by the municipality.
3. Any structure less than one hundred (100) square feet.
4. Furnishings such as umbrellas awnings, etc.

## 1.232Chapter 33: Safeguards During Construction

Add the following new section to IBC section 3304 Sitework:

Final Grading.

Lots shall be graded so that surface accumulation of water does not occur across adjoining property. Retaining walls, which may be necessary to prevent surface run-off into adjoining property, shall be constructed in accordance with this code and any applicable ordinances. Storm drainage systems necessary to divert flows from adjoining property shall be

designed and installed in accordance with SBC-3 – 20211~~9~~ (Part 3 of this Subchapter) the Rhode Island State Plumbing Code.

Add the following new section to IBC s~~S~~ection 3307 Protection of Adjoining Property:

3307.2 Structural Loads.

See section 1608.4.

## 1.243 Chapter 34: Existing Structures

Substitute the following for IBC Chapter 34 ~~in IBC 2015~~2018

SECTION 3401 GENERAL-

3401.1 Scope.-

The provisions of this Chapter shall control the alteration, repair, addition and change of occupancy of existing buildings and structures.

Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

3401.2 Maintenance.

Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices or safeguards which are required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for the maintenance of buildings and structures. To determine compliance with this subsection, the building official shall have the authority to require a building or structure to be re-inspected. The requirements of this Chapter shall not provide the basis for removal or abrogation of fire protection and safety systems and devices in existing structures.

3401.3 Compliance.

Alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in the International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage Disposal Code, International Residential

Code and NFPA 70. Where provisions of the other codes conflict with provisions of this Chapter, the provisions of this Chapter shall take precedence.

3401.4 Building materials and systems.

Building materials and systems shall comply with the requirements of this section.

3401.4.1 Existing materials.

Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the Building Official to be unsafe per section 116.

3401.4.2 New and replacement materials.

Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

3401.4.3 Existing seismic force-resisting systems.

Where the existing seismic force-resisting system is a type that can be designated ordinary, values of R, Ω0, and Cd for the existing seismic force-resisting system shall be those specified by this code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

3401.6 Alternative compliance.

Work performed in accordance with the International Existing Building Code shall be deemed to comply with the provisions of this Chapter.

3401.5 Dangerous conditions.

The Building Official shall have the authority to require the elimination of conditions deemed dangerous.

## IBC SECTION 3402 DEFINITIONS

3402.1 Definitions.-

The following terms are defined in Chapter 2:

DANGEROUS.

EXISTING STRUCTURE.

PRIMARY FUNCTION.

SUBSTANTIAL STRUCTURAL DAMAGE.

TECHNICALLY INFEASIBLE.

IBC section 3403 ADDITIONS

3403.1 General.-

Additions to any building or structure shall comply with the requirements of this code for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the addition are no less conforming with the provisions of this code than the existing building or structure was prior to the addition. An existing building together with its additions shall comply with the height and area provisions of Chapter 5.

3403.2 Flood hazard areas.

For buildings and structures in flood hazard areas established in section 1612.3, any addition that constitutes substantial improvement of the existing structure, as defined in section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design. For buildings and structures in flood hazard areas established in section 1612.3, any additions that do not constitute substantial improvement of the existing structure, as defined in section 1612.2, are not required to comply with the flood design requirements for new construction.

3403.3 Existing structural elements carrying gravity load.

Any existing gravity load-carrying structural element for which an addition and its related alterations cause an increase in design gravity load of more than five percent (5%) shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by this code for new structures. Any existing gravity load-carrying

structural element whose gravity load-carrying capacity is decreased shall be considered an altered element subject to the requirements of section 3404.3. Any existing element that will form part of the lateral load path for any part of the addition shall be considered an existing lateral load-carrying structural element subject to the requirements of section 3403.4.

3403.3.1 Design live load.

Where the addition does not result in increased design live load, existing gravity load carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the addition. If the approved live load is less than that required by section 1607, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the addition does result in increased design live load, the live load required by section 1607 shall be used.

3403.4 Existing structural elements carrying lateral load.

Where the addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall be shown to meet the requirements of sections 1609 and 1613.

Exception:

Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is no more than ten percent (10%) greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with sections 1609 and 1613. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

3403.5 Smoke alarms in existing portions of a building.

Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms in accordance with section 1103.8 of the International Fire Code.

## IBC section 3404 ALTERATIONS

### 3404.1 General.

Except as provided by section 3401.4 or this section, alterations to any building or structure shall comply with the requirements of the code for new construction. Alterations shall be such that the existing building or structure is no less complying with the provisions of this code than the existing building or structure was prior to the alteration.

Exceptions:

1. An existing stairway shall not be required to comply with the requirements of section 1009 where the existing space and construction does not allow a reduction in pitch or slope.

2. Handrails otherwise required to comply with section 1011.11 shall not be required to comply with the requirements of section 1014.6 regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

### 3404.2 Flood hazard areas.

For buildings and structures in flood hazard areas established in section 1612.3, any alteration that constitutes substantial improvement of the existing structure, as defined in section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design. For buildings and structures in flood hazard areas established in section 1612.3, any alterations that do not constitute substantial improvement of the existing structure, as defined in section 1612.2, are not required to comply with the flood design requirements for new construction.

### 3404.3 Existing structural elements carrying gravity load.

Any existing gravity load-carrying structural element for which an alteration causes an increase in design gravity load of more than five percent (5%) shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by this code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design gravity loads required by this code for new structures.

3404.3.1 Design live load.

Where the alteration does not result in increased design live load, existing gravity load carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the alteration. If the approved live load is less than that required by section 1607, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the alteration does result in increased design live load, the live load required by section 1607 shall be used.

3404.4 Existing structural elements carrying lateral load.

Except as permitted by section 3404.5, where the alteration increases design lateral loads in accordance with section 1609 or 1613, or where the alteration results in a structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the requirements of sections 1609 and 1613.

Exception:

Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is no more than ten percent (10%) greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces per sections 1609 and 1613. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of additions and alterations since original construction.

3404.5 Voluntary seismic improvements.

Alterations to existing structural elements or additions of new structural elements that are not otherwise required by this chapter and are initiated for the purpose of improving the performance of the seismic force-resisting system of an existing structure or the performance of seismic bracing or anchorage of existing nonstructural elements shall be permitted, provided that an engineering analysis is submitted demonstrating the following:

1. The altered structure and the altered nonstructural elements are no less conforming with the provisions of this code with respect to earthquake design than they were prior to the alteration.

2. New structural elements are detailed as required for new construction.

3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required for new construction.

4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

3404.6 Smoke alarms.

Individual sleeping units and individual dwelling units in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with section 1103.8 of the International Fire Code.

IBC section 3405 REPAIRS

3405.1 General.-

Buildings and structures, and parts thereof, shall be repaired in compliance with sections 3405 and 3401.2. Work on non-damaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by section 3401.2, ordinary repairs exempt from permit in accordance with section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

3405.2 Substantial structural damage to vertical elements of the lateral force-resisting system.

A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of sections 3405.2.1 through 3405.2.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.

2. One (1) and two (2) family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

3405.2.1 Evaluation.

The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the building official. The evaluation shall establish whether the damaged building, if repaired to its pre-damage state, would comply with the provisions of this code for wind and earthquake loads. Wind loads for this evaluation shall be those prescribed in section 1609. Earthquake loads for this evaluation, if required, shall be permitted to be seventy-five percent (75%) of those prescribed in section 1613.

3405.2.2 Extent of repair for compliant buildings.

If the evaluation establishes compliance of the pre-damage building in accordance with section 3405.2.1, then repairs shall be permitted that restore the building to its pre-damage state, based on material properties and design strengths applicable at the time of original construction.

3405.2.3 Extent of repair for noncompliant buildings.

If the evaluation does not establish compliance of the pre-damaged building in accordance with section 3404.2.1, then the building shall be rehabilitated to comply with applicable provisions of this code for load combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by this code. Earthquake loads for this rehabilitation design shall be those required for the design of the pre-damage building, but not less than seventy-five percent (75%) of those prescribed in section 1613. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

3405.3 Substantial structural damage to gravity load-carrying components.

Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions of this code for dead and live loads. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Existing gravity load-carrying structural elements shall be permitted to be designed for live loads approved prior to the

damage. Nondamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated or shown to have the capacity to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

3405.3.1 Lateral force-resisting elements.

Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with section 3405.2.1 and, if noncompliant, rehabilitated in accordance with section 3405.2.3.

Exceptions:

1. One (1) and two (2) family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

2. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.

3405.4 Less than substantial structural damage.

For damage less than substantial structural damage, repairs shall be allowed that restore the building to its pre-damage state, based on material properties and design strengths applicable at the time of original construction. New structural members and connections used for this repair shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

3405.4.1 Repairs for less than substantial damage due to snow load effects.

Roof framing components that have sustained less than substantial structural damage caused by or related to snow load effects shall be rehabilitated to comply with the applicable provisions for dead and snow loads in Chapter 16. Undamaged roof framing components that receive dead or snow loads from rehabilitated components shall also be rehabilitated to comply with the design loads of the rehabilitated design.

3405.5 Flood hazard areas.

For buildings and structures in flood hazard areas established in section 1612.3, any repair that constitutes substantial improvement of the existing structure, as defined in section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design. For buildings and structures in flood hazard areas established in section 1612.3, any repairs that do not constitute substantial improvement or repair of substantial damage of the existing structure, as defined in section 1612.2, are not required to comply with the flood design requirements for new construction.

IBC section 3406 ~~FIRE ESCAPES~~Fire Escapes

3406.1 Where permitted.-

Fire escapes shall be permitted only as provided for in sections 3406.1.1 through 3406.1.4.

3406.1.1 New buildings.

Fire escapes shall not constitute any part of the required means of egress in new buildings.

3406.1.2 Existing fire escapes.

Existing fire escapes shall be continued to be accepted as a component in the means of egress in existing buildings only.

3406.1.3 New fire escapes.

New fire escapes for existing buildings shall be permitted only where exterior stairs cannot be utilized due to lot lines limiting stair size or due to the sidewalks, alleys or roads at grade level. New fire escapes shall not incorporate ladders or access by windows.

3406.1.4 Limitations.

Fire escapes shall comply with this section and shall not constitute more than fifty percent (50%) of the required number of exits nor more than fifty percent (50%) of the required exit capacity.

3406.2 Location.

Where located on the front of the building and where projecting beyond the building line, the lowest landing shall not be less than seven feet (7') (2134 mm) or more than twelve feet (12') (3658 mm) above grade and

shall be equipped with a counterbalanced stairway to the street. In alleyways and thoroughfares less than thirty feet (30') (9144 mm) wide, the clearance under the lowest landing shall not be less than twelve feet (12') (3658 mm).

3406.3 Construction.

The fire escape shall be designed to support a live load of one hundred (100) pounds per square foot (4788 Pascals) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal two inches (2") (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Type III and IV construction are permitted to be of wood not less than nominal two inches (2") (51 mm) thick.

3406.4 Dimensions.

Stairs shall be at least twenty-two inches (22") (559 mm) wide with risers not more than, and treads not less than, eight inches (8") (203 mm) and landings at the foot of stairs not less than forty inches (40") (1016 mm) wide by thirty-six inches (36") (914 mm) long, located not more than eight inches (8") (203 mm) below the door.

3406.5 Opening protectives.

Doors and windows along the fire escape shall be protected with three quarters of one (3/4) hour opening protectives.

IBC section 3407 ~~GLASS REPLACEMENT~~Glass Replacement

3407.1 Conformance.

The installation or replacement of glass shall be as required for new installations.

IBC section 3408 ~~CHANGE OF OCCUPANCY~~Change of Occupancy

3408.1 Conformance.

No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the building official, the

use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

3408.2 Certificate of occupancy.

A certificate of occupancy shall be issued where it has been determined that the requirements for the new occupancy classification have been met.

3408.3 Stairways.

An existing stairway shall not be required to comply with the requirements of section 1011 where the existing space and construction does not allow a reduction in pitch or slope.

3408.4 Seismic.

When a change of occupancy results in a structure being reclassified to a higher risk category, the structure shall conform to the seismic requirements for a new structure of the higher risk category.

Exceptions:

1. Specific seismic detailing requirements of section 1613 for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, over strength, redundancy and ductility of the structure.

2. When a change of use results in a structure being reclassified from Risk Category I or II to Risk Category III and the structure is located where the seismic coefficient, SDS, is less than thirty-three one hundredths (0.33), compliance with the seismic requirements of section 1613 are not required.

IBC section 3409 Historic Buildings-

3409 Historic Buildings:-

Delete IBC section 3407.1 3409.1 Historic Buildings and substitute the following:

3409.1 Approval:

The provisions of this code relating to the construction, repair, alteration, enlargement, restoration and moving of buildings or structures shall not be mandatory for existing buildings or structures identified and classified by the state or local government authority as historic buildings, subject to the approval of the Board of Appeals, when such buildings are judged by the code official to be safe and in the interest of public health, safety and welfare regarding any proposed construction, alteration, repair, enlargement and relocation. All such approvals shall be based on the applicant's complete submission of professional architectural and engineering plans and specifications bearing the professional seal of the designer.

3409.2 Flood hazard areas.

Within flood hazard areas established in accordance with section 1612.3, where the work proposed constitutes substantial improvement as defined in section 1612.2, the building shall be brought into compliance with section 1612.

Exception: Historic buildings that are:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;

2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or

3. Designated as historic under a State or local historic preservation program that is approved by the Department of Interior.

IBC section 3410 ~~MOVED STRUCTURE~~Moved Structure

3410.1 Conformance.-

Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

IBC section 3411 ~~ACCESSIBILITY FOR EXISTING BUILDINGS~~Accessibility for Existing Buildings

3411.1 Scope.-

The provisions of sections 3411.1 through 3411.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

3411.2 Maintenance of facilities.

A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy.

3411.3 Extent of application.

An alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a facility or portion of a facility.

3411.4 Change of occupancy.

Existing buildings that undergo a change of group or occupancy shall comply with this section.

Exception:

Type B dwelling units or sleeping units required by section 1107 of this code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is fifty percent (50%) or less of the aggregate area of the building.

3411.4.1 Partial change in occupancy.

Where a portion of the building is changed to a new occupancy classification, any alterations shall comply with sections 3411.6, 3411.7 and 3411.8.

3411.4.2 Complete change of occupancy.

Where an entire building undergoes a change of occupancy, it shall comply with section 3411.4.1 and shall have all of the following accessible features:

1. At least one (1) accessible building entrance.

2. At least one (1) accessible route from an accessible building entrance to primary function areas.

3. Signage complying with section 1111.

4. Accessible parking, where parking is being provided.

5. At least one (1) accessible passenger loading zone, when loading zones are provided.

6. At least one (1) accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance. Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

Exception:

The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

3411.5 Additions.

Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in section 3411.7.

3411.6 Alterations.

A facility that is altered shall comply with the applicable provisions in Chapter 11 of this code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by section 3411.7.

2. Accessible means of egress required by Chapter 10 are not required to be provided in existing facilities.

3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.

4. Type B dwelling or sleeping units required by section 1107 of this code are not required to be provided in existing buildings

and facilities undergoing a change of occupancy in conjunction with alterations where the work area is fifty percent (50%) or less of the aggregate area of the building.

3411.7 Alterations affecting an area containing a primary function.

Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities or drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed twenty percent (20%) of the costs of the alterations affecting the area of primary function.

2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.

3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.

4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.

5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

3411.8 Scoping for alterations.

The provisions of sections 3411.8.1 through 3411.8.14 shall apply to alterations to existing buildings and facilities.

3411.8.1 Entrances.

Accessible entrances shall be provided in accordance with section 1105.

Exception:

Where an alteration includes alterations to an entrance, and the facility has an accessible entrance, the altered entrance is not

required to be accessible, unless required by section 3411.7. Signs complying with section 1111 shall be provided.

3411.8.2 Elevators.

Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

3411.8.3 Platform lifts.

Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

3411.8.4 Stairs and escalators in existing buildings.

In alterations, change of occupancy or additions where an escalator or stair is added where none existed previously, and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairs in accordance with sections 1104.4 and 1104.5.

3411.8.5 Ramps.

Where slopes steeper than allowed by section 1012.6.1 are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 3411.8.5.

TABLE 3411.8.5

RAMPS

| SLOPE | MAXIMUM RISE |
|---|---|
| Steeper than 1:10 but not steeper than 1:8 | 3 inches |
| Steeper than 1:12 but not steeper than 1:10 | 6 inches |

For SI: 1 inch = 25.4 mm.

3411.8.6 Performance areas.

Where it is technically infeasible to alter performance areas to be on an accessible route, at least one (1) of each type of performance area shall be made accessible.

3411.8.7 Accessible dwelling or sleeping units.

Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of section 1107 for Accessible units apply only to the quantity of spaces being altered or added.

3411.8.8 Type A dwelling or sleeping units.

Where more than twenty (20) Group R-2 dwelling or sleeping units are being altered or added, the requirements of section 1107 for Type A units apply only to the quantity of the spaces being altered or added.

3411.8.9 Type B dwelling or sleeping units.

Where four (4) or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of section 1107 for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than fifty percent (50%) of the aggregate area of the building, the requirements of section 1107 for Type B units apply only to the quantity of the spaces being altered.

3411.8.10 Jury boxes and witness stands.

In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the means of egress.

3411.8.11 Toilet rooms.

Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with section 1109.2.1 is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms.

3411.8.12 Dressing, fitting and locker rooms.

Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one (1) accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate sex facilities are not required where only unisex rooms are provided.

3411.8.13 Fuel dispensers.-

Operable parts of replacement fuel dispensers shall be permitted to be fifty-four inches (54”) (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

3411.8.14 Thresholds.

The maximum height of thresholds at doorways shall be three quarters of one inch (3/4”) (19.1 mm). Such thresholds shall have beveled edges on each side.

3411.9 Historic buildings.

These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the applicable governing authority, the alternative requirements of sections 3411.9.1 through 3411.9.4 for that element shall be permitted.

Exception:

Type B dwelling or sleeping units required by section 1107 are not required to be provided in historical buildings.

3411.9.1 Site arrival points.

At least one (1) accessible route from a site arrival point to an accessible entrance shall be provided.

3411.9.2 Multilevel buildings and facilities.

An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

3411.9.3 Entrances.

At least one (1) main entrance shall be accessible.

Exceptions:

1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or

2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided. Signs complying with section 1111 shall be provided at the primary entrance and the accessible entrance.

3411.9.4 Toilet and bathing facilities.

Where toilet rooms are provided, at least one (1) accessible family or assisted-use toilet room complying with section 1109.2.1 shall be provided.

IBC section 3412 ~~COMPLIANCE ALTERNATIVES~~Compliance Alternatives

3412.1 Compliance.

The provisions of this section are intended to maintain or increase the current degree of public safety, health and general welfare in existing buildings while permitting repair, alteration, addition and change of occupancy without requiring full compliance with Chapters 2 through 33, or sections 3401.3, and 3403 through 3409, except where compliance with other provisions of this code is specifically required in this section.

Delete IBC section 3410.2 3412.2 Applicability and substitute the following:

3412.2 Applicability

Existing buildings in which there is work involving additions, alterations or changes of occupancy shall be made to conform to the requirements of this section or the provisions of sections 3403 through 3407. The provisions in sections 3410.2.1 through 3410.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H or I.

3412.2.1 Change in occupancy.

Where an existing building is changed to a new occupancy classification and this section is applicable, the provisions of this section for the new occupancy shall be used to determine compliance with this code.

3412.2.2 Partial change in occupancy.

Where a portion of the building is changed to a new occupancy classification, and that portion is separated from the remainder of the building with fire barriers or horizontal assemblies having a fire-resistance rating as required by Table 508.4 for the separate occupancies, or with approved compliance alternatives, the portion changed shall be made to comply with the provisions of this section. Where a portion of the building is changed to a new occupancy classification, and that portion is not separated from the remainder of the building with fire barriers or horizontal assemblies having a fire-resistance rating as required by Table 508.4 for the separate occupancies, or with approved compliance alternatives, the provisions of this section which apply to each occupancy shall apply to the entire building. Where there are conflicting provisions, those requirements which secure the greater public safety shall apply to the entire building or structure.

3412.2.3 Additions.

Additions to existing buildings shall comply with the requirements of this code for new construction. The combined height and area of the existing building and the new addition shall not exceed the height and area allowed by Chapter 5. Where a fire wall that complies with section 706 is provided between the addition and the existing building, the addition shall be considered a separate building.

3412.2.4 Alterations and repairs.

An existing building or portion thereof, which does not comply with the requirements of this code for new construction, shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. If, in the alteration or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33.

3412.2.4.1 Flood hazard areas.

For existing buildings located in flood hazard areas established in section 1612.3, if the alterations and repairs constitute substantial improvement of

the existing building, the existing building shall be brought into compliance with the requirements for new construction for flood design.

3412.2.5 Accessibility requirements.

All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of section 3411.

3412.3 Acceptance.

For repairs, alterations, additions and changes of occupancy to existing buildings that are evaluated in accordance with this section, compliance with this section shall be accepted by the building official.

3412.3.1 Hazards.

Where the building official determines that an unsafe condition exists, as provided for in section 116, such unsafe condition shall be abated in accordance with section 116.

3412.3.2 Compliance with other codes.

Buildings that are evaluated in accordance with this section shall comply with the International Fire Code and the International Property Maintenance Code.

3412.4 Investigation and evaluation.

For proposed work covered by this section, the building owner shall cause the existing building to be investigated and evaluated in accordance with the provisions of this section.

3412.4.1 Structural analysis.

The owner shall have a structural analysis of the existing building made to determine adequacy of structural systems for the proposed alteration, addition or change of occupancy. The analysis shall demonstrate that the building with the work completed is capable of resisting the loads specified in Chapter 16.

3412.4.2 Submittal.

The results of the investigation and evaluation as required in section 3412.4, along with proposed compliance alternatives, shall be submitted to the building official.

3412.4.3 Determination of compliance.

The building official shall determine whether the existing building, with the proposed addition, alteration or change of occupancy, complies with the provisions of this section in accordance with the evaluation process in sections 3412.5 through 3412.9.

3412.5 Evaluation.

The evaluation shall be comprised of three categories: fire safety, means of egress and general safety, as defined in sections 3412.5.1 through 3412.5.3.

3412.5.1 Fire safety.

Included within the fire safety category are the structural fire resistance, automatic fire detection, fire alarm, automatic sprinkler system, and fire suppression system features of the facility.

3412.5.2 Means of egress.

Included within the means of egress category are the configuration, characteristics and support features for means of egress in the facility.

3412.5.3 General safety.

Included within the general safety category are the fire safety parameters and the means of egress parameters.

3412.6 Evaluation process.

The evaluation process specified herein shall be followed in its entirety to evaluate existing buildings. Table 3412.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in section 3412.6.16, the score for each occupancy shall be determined and the lower score determined for each section of the evaluation process shall apply to the entire building. Where the separation between mixed occupancies qualifies for any category indicated in section 3412.6.16, the score for each occupancy shall apply to each portion of the building based on the occupancy of the space.

3412.6.1 Building height.

The value for building height shall be the lesser value determined by the formula in section 3412.6.1.1. Chapter 5 shall be used to determine the allowable height of the building, including allowable increases due to automatic sprinklers as provided for in Chapter 5. Subtract the actual building height in feet from the allowable and divide by twelve and one half feet (12-½'). Enter the height value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.1, Building Height, for fire safety, means of egress and general safety. The maximum score for a building shall be ten (10).

3412.6.1.1 Height formula.

The following formulas shall be used in computing the building height value.

$$\text{Height value, feet} = \frac{(AH) - (EBH)}{12.5} \times CF$$

**(Equation 34-1)**

$$\text{Height value, feet} = (AS - EBS) \times CF$$

**(Equation 34-2)**

Where:

AH = Allowable height in feet from Table 504.

EBH = Existing building height in feet.

AS = Allowable height in stories from Table 504.

EBS = Existing building height in stories.

CF = 1 if (AH) – (EBH) is positive.

CF = Construction-type factor shown in Table 3412.6.6(2) if (AH) – (EBH) is negative.

Note:

Where mixed occupancies are separated and individually evaluated as indicated in section 3412.6, the values AH, AS, EBH and EBS shall be based on the height of the occupancy being evaluated.

3412.6.2 Building area.

The value for building area shall be determined by the formula in section 3412.6.2.2. Section 506 and the formula in section 3412.6.2.1 shall be used to determine the allowable area of the building. This shall include any allowable increases due to frontage and automatic sprinklers as provided for in section 506. Subtract the actual building area in square feet from the allowable area and divide by one thousand two hundred (1,200) square feet. Enter the area value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.2, Building Area, for fire safety, means of egress and general safety. In determining the area value, the maximum permitted positive value for area is fifty percent (50%) of the fire safety score as listed in Table 3412.8, Mandatory Safety Scores.

3412.6.2.1 Allowable area formula.

The following formula shall be used in computing allowable area:

Aa = [At + (At  If) + (At  Is)] (Equation 34-3)

Where:

Aa = Allowable building area per story (square feet).

At = Tabular building area per story in accordance with Table 503 (square feet).

Is = Area increase factor due to sprinkler protection as calculated in accordance with section 506.3.

If = Area increase factor due to for frontage as calculated in accordance with section 506.2.

3412.6.2.2 Area formula.

The following formula shall be used in computing the area value. Determine the area value for each occupancy floor area on a floor-by-floor basis. For each occupancy, choose the minimum area value of the set of values obtained for the particular occupancy.

$$\text{Area value } 1 = \frac{\text{Allowable area}_1}{1,200 \text{ square feet}} \left[ 1 - \left( \frac{\text{Actual area}_1}{\text{Allowable area}_1} + \ldots + \frac{\text{Actual area}_n}{\text{Allowable area}_n} \right) \right]$$

**(Equation 34-4)**

Where:

i = Value for an individual separated occupancy on a floor.

n = Number of separated occupancies on a floor.

3412.6.3 Compartmentation.

Evaluate the compartments created by fire barriers or horizontal assemblies which comply with sections 3412.6.3.1 and 3412.6.3.2 and which are exclusive of the wall elements considered under sections 3412.6.4 and 3412.6.5. Conforming compartments shall be figured as the net area and do not include shafts, chases, stairways, walls or columns. Using Table 3412.6.3, determine the appropriate compartmentation value (CV) and enter that value into Table 3412.7 under Safety Parameter 3412.6.3, Compartmentation, for fire safety, means of egress and general safety.

TABLE 3412.6.3
COMPARTMENTATION VALUES

| OCCUPANCY | CATEGORIES[a] | | | | |
|---|---|---|---|---|---|
| | a Compartment size equal to or greater than 15,000 square feet | b Compartment size of 10,000 square feet | c Compartment size of 7,500 square feet | d Compartment size of 5,000 square feet | e Compartment size of 2,500 square feet or less |
| A-1, A-3 | 0 | 6 | 10 | 14 | 18 |
| A-2 | 0 | 4 | 10 | 14 | 18 |
| A-4, B, E, S-2 | 0 | 5 | 10 | 15 | 20 |
| F, M, R, S-1 | 0 | 4 | 10 | 16 | 22 |

For SI: 1 Square foot = 0.093 $m^2$

For areas between categories, the compartmentation value shall be obtained by linear interpolation.

3412.6.3.1 Wall construction.

A wall used to create separate compartments shall be a fire barrier conforming to section 707 with a fire-resistance rating of not less than two (2) hours. Where the building is not divided into more than one (1) compartment, the compartment size shall be taken as the total floor area on all floors. Where there is more than one (1) compartment within a story, each compartmented area on such story shall be provided with a horizontal exit conforming to section 1026. The fire door serving as the horizontal exit between compartments shall be so installed, fitted and gasketed that such fire door will provide a substantial barrier to the passage of smoke.

3412.6.3.2 Floor/ceiling construction.

A floor/ceiling assembly used to create compartments shall conform to section 711 and shall have a fire-resistance rating of not less than two (2) hours.

3412.6.4 Tenant and dwelling unit separations.

Evaluate the fire-resistance rating of floors and walls separating tenants, including dwelling units, and not evaluated under sections 3412.6.3 and 3412.6.5. Under the categories and occupancies in Table 3412.6.4, determine the appropriate value and enter that value in Table 3412.7 under Safety Parameter 3412.6.4, Tenant and Dwelling Unit Separations, for fire safety, means of egress and general safety.

TABLE 3412.6.4
SEPARATION VALUES

| OCCUPANCY | CATEGORIES | | | | |
|---|---|---|---|---|---|
| | a | b | c | d | e |
| A-1 | 0 | 0 | 0 | 0 | 1 |
| A-2 | -5 | -3 | 0 | 1 | 3 |
| A-3, A-4, B, E, F, M, S-1 | -4 | -3 | 0 | 2 | 4 |
| R | -4 | -2 | 0 | 2 | 4 |

| | | | | | |
|---|---|---|---|---|---|
| S-2 | -5 | -2 | 0 | 2 | 4 |

3412.6.4.1 Categories.

The categories for tenant and dwelling unit separations are:

1. Category a—No fire partitions; incomplete fire partitions; no doors; doors not self-closing or automatic-closing.

2. Category b—Fire partitions or floor assemblies with less than a one (1) hour fire-resistance rating or not constructed in accordance with sections 708 or 711.

3. Category c—Fire partitions with a one (1) hour or greater fire-resistance rating constructed in accordance with section 708 and floor assemblies with a one (1) hour but less than two (2) hour fire-resistance rating constructed in accordance with section 711, or with only one (1) tenant within the floor area.

4. Category d—Fire barriers with a one (1) hour but less than two (2) hour fire-resistance rating constructed in accordance with section 707 and floor assemblies with a two (2) hour or greater fire-resistance rating constructed in accordance with section 711.

5. Category e—Fire barriers and floor assemblies with a two (2) hour or greater fire-resistance rating and constructed in accordance with sections 707 and 711, respectively.

3412.6.5 Corridor walls.

Evaluate the fire-resistance rating and degree of completeness of walls which create corridors serving the floor, and constructed in accordance with section 1020. This evaluation shall not include the wall elements considered under sections 3412.6.3 and 3412.6.4. Under the categories and groups in Table 3412.6.5, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.5, Corridor Walls, for fire safety, means of egress and general safety.

| TABLE 3412.6.5<br>CORRIDOR WALL VALUES | |
|---|---|
| OCCUPANCY | CATEGORIES |

| | a[a] | b[a] | c[a] | d[a] |
|---|---|---|---|---|
| A-1 | -10 | -4 | 0 | 2 |
| A-2 | -30 | -12 | 0 | 2 |
| A-3, F, M, R, S-1 | -7 | -3 | 0 | 2 |
| A-4, B, E, S-2 | -5 | -2 | 0 | 5 |
| [a] Corridors not providing at least one-half the travel distance for all occupants on a floor shall be category b. | | | | |

3412.6.5.1 Categories.

The categories for Corridor Walls are:

1. Category a — No fire partitions; incomplete fire partitions; no doors; or doors not self-closing.

2. Category b — Less than one (1) hour fire-resistance rating or not constructed in accordance with section 708.4.

3. Category c — One (1) hour to less than two (2) hour fire-resistance rating, with doors conforming to section 716 or without corridors as permitted by section 1018.

4. Category d — Two (2) hour or greater fire-resistance rating, with doors conforming to section 716.

3412.6.6 Vertical openings.-

Evaluate the fire-resistance rating of exit enclosures, hoistways, escalator openings, and other shaft enclosures within the building, and openings between two (2) or more floors. Table 3412.6.6(1) contains the appropriate protection values. Multiply that value by the construction type factor found in Table 3412.6.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.6, Vertical Openings, for fire safety, means of egress, and general safety. If the structure is a one (1) story building or if all the unenclosed vertical openings within the building conform to the requirements of

section 708, enter a value of two (2). The maximum positive value for this requirement shall be two (2).

| TABLE 3412.6.6(1)<br>VERTICAL OPENING PROTECTION VALUE | |
|---|---|
| Protection | Value |
| None<br>(unprotected opening) | -2 times number floors connected |
| Less than 1 hour | -1 times floors connected |
| 1 to less than 2 hours | 1 |
| 2 hours or more | 2 |

| TABLE 3412.6.6(2)<br>CONSTRUCTION-TYPE FACTOR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| FACTOR | TYPE OF CONSTRUCTION | | | | | | | | |
| | IA | IB | IIA | IIB | IIIA | IIIB | IV | VA | VB |
| | 1.2 | 1.5 | 2.2 | 3.5 | 2.5 | 3.5 | 2.3 | 3.3 | 7 |

3412.6.6.1 Vertical opening formula.

The following formula shall be used in computing vertical opening value.

$$VO = PV \times CF \quad \text{(Equation 34-5)}$$

Where:

VO = Vertical opening value.

PV = Protection value [Table 3412.6.6(1)].

CF = Construction type factor [Table 3412.6.6(2)].

3412.6.7 HVAC systems.

Evaluate the ability of the HVAC system to resist the movement of smoke and fire beyond the point of origin. Under the categories in section 3412.6.7.1, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.7, HVAC Systems, for fire safety, means of egress and general safety.

3412.6.7.1 Categories.

The categories for HVAC systems are:

1. Category a

   Plenums not in accordance with section 602 of the International Mechanical Code. – ten (10) points.

2. Category b

   Air movement in egress elements not in accordance with section 1018.5. – five (5) points.

3. Category c

   Both categories a and b are applicable. – fifteen (15) points.

4. Category d

   Compliance of the HVAC system with section 1020.5 and section 602 of the International Mechanical Code. Zero (0) points.

5. Category e

   Systems serving one story; or a central boiler/chiller system without ductwork connecting two (2) or more stories. Five (5) points.

3412.6.8 Automatic fire detection.

Evaluate the smoke detection capability based on the location and operation of automatic fire detectors in accordance with section 907 and the International Mechanical Code. Under the categories and occupancies in Table 3412.6.8, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.8, Automatic Fire Detection, for fire safety, means of egress and general safety.

TABLE 3412.6.8

| AUTOMATIC FIRE DETECTION VALUES | | | | | |
|---|---|---|---|---|---|
| OCCUPANCY | CATEGORIES | | | | |
| | a | b | c | d | e |
| A-1, A-3, F, M, R, S-1 | -10 | -5 | 0 | 2 | 6 |
| A-2 | -25 | -5 | 0 | 5 | 9 |
| A-4, B, E, S-2 | -4 | -2 | 0 | 4 | 8 |

3412.6.8.1 Categories.

The categories for automatic fire detection are:

1. Category a

   None.

2. Category b

   Existing smoke detectors in HVAC systems and maintained in accordance with the International Fire Code.

3. Category c

   Smoke detectors in HVAC systems. The detectors are installed in accordance with the requirements for new buildings in the International Mechanical Code.

4. Category d

   Smoke detectors throughout all floor areas other than individual sleeping units, tenant spaces and dwelling units.

5. Category e

   Smoke detectors installed throughout the floor area.

6. Category f

   Smoke detectors in corridors only.

3412.6.9 Fire alarm systems.

Evaluate the capability of the fire alarm system in accordance with section 907. Under the categories and occupancies in Table 3412.6.9, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.9, Fire Alarm Systems, for fire safety, means of egress and general safety.

TABLE 3412.6.9
FIRE ALARM SYSTEM VALUES

| OCCUPANCY | CATEGORIES | | | |
|---|---|---|---|---|
| | a | b[a] | c | D |
| A-1, A-2, A-3, A-4, B, E, R | -10 | -5 | 0 | 5 |
| F, M, S | 0 | 5 | 10 | 15 |
| For buildings equipped throughout with an automatic sprinkler system, add 2 points for activation by a sprinkler waterflow device. | | | | |

3412.6.9.1 Categories.

The categories for fire alarm systems are:

1. Category a

   None.

2. Category b

   Fire alarm system with manual fire alarm boxes in accordance with section 907.4 and alarm notification appliances in accordance with section 907.5.2.

3. Category c

   Fire alarm system in accordance with section 907.

4. Category d

   Category c plus a required emergency voice/alarm communications system and a fire command center that conforms to section 403.4.6

and contains the emergency voice/alarm communications system controls, fire department communication system controls and any other controls specified in section 911 where those systems are provided.

3412.6.10 Smoke control.

Evaluate the ability of a natural or mechanical venting, exhaust or pressurization system to control the movement of smoke from a fire. Under the categories and occupancies in Table 3412.6.10, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.10, Smoke Control, for means of egress and general safety.

TABLE 3412.6.10
SMOKE CONTROL VALUES

| OCCUPANCY | CATEGORIES | | | | | |
|---|---|---|---|---|---|---|
| | a | b | c | d | e | f |
| A-1, A-2, A-3 | 0 | 1 | 2 | 3 | 6 | 6 |
| A-4, E | 0 | 0 | 0 | 1 | 3 | 5 |
| B, M, R | 0 | 2[a] | 3[a] | 3[a] | 3[a] | 4[a] |
| F, S | 0 | 2[a] | 2[a] | 3[a] | 3[a] | 3[a] |

[a] This value shall be 0 if compliance with Category d or e in Section 3412.6.8.1 has not been obtained.

3412.6.10.1 Categories.

The categories for smoke control are:

1. Category a

   None.

2. Category b

The building is equipped throughout with an automatic sprinkler system. Openings are provided in exterior walls at the rate of twenty (20) square feet (1.86 m2) per fifty (50) linear feet (15,240 mm) of exterior wall in each story and distributed around the building perimeter at intervals not exceeding fifty (50) feet (15,240 mm). Such openings shall be readily openable from the inside without a key or separate tool and shall be provided with ready access thereto. In lieu of operable openings, clearly and permanently marked tempered glass panels shall be used.

3. Category c

   One (1) enclosed exit stairway, with ready access thereto, from each occupied floor of the building. The stairway has operable exterior windows and the building has openings in accordance with Category b.

4. Category d

   One (1) smokeproof enclosure and the building has openings in accordance with Category b.

5. Category e

   The building is equipped throughout with an automatic sprinkler system. Each floor area is provided with a mechanical air-handling system designed to accomplish smoke containment. Return and exhaust air shall be moved directly to the outside without recirculation to other floor areas of the building under fire conditions.

The system shall exhaust not less than six (6) air changes per hour from the floor area. Supply air by mechanical means to the floor area is not required. Containment of smoke shall be considered as confining smoke to the floor area involved without migration to other floor areas. Any other tested and approved design which will adequately accomplish smoke containment is permitted.

6. Category f

   Each stairway shall be one of the following: a smokeproof enclosure in accordance with section 1023.11; pressurized in accordance with section 909.20.5 or shall have operable exterior windows

3412.6.11 Means of egress capacity and number.

Evaluate the means of egress capacity and the number of exits available to the building occupants. In applying this section, the means of egress are required to conform to the following sections of this code: 1003.7, 1004, 1005, 1006, 1007, 1016.2, 1025.1, 1028.2, 1028.5 1029.2 1029.3 1029.4 and 1030. The number of exits credited is the number that is available to each occupant of the area being evaluated. Existing fire escapes shall be accepted as a component in the means of egress when conforming to section 3406. Under the categories and occupancies in Table 3412.6.11, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.11, Means of Egress Capacity, for means of egress and general safety.

TABLE 3412.6.11
MEANS OF EGRESS VALUES

| OCCUPANCY | CATEGORIES | | | | |
|---|---|---|---|---|---|
| | a | b | c | d | e |
| A-1, A-2, A-3, A-4, E | -10 | 0 | 2 | 8 | 10 |
| M | -3 | 0 | 1 | 2 | 4 |
| B, F, S | -1 | 0 | 0 | 0 | 0 |
| R | -3 | 0 | 0 | 0 | 0 |

[a] The values indicated are for buildings six stories or less in height. For buildings over six stories above grade plane, add an additional -10 points.

3412.6.11.1 Categories.

The categories for Means of Egress Capacity and number of exits are:

1. Category a

   Compliance with the minimum required means of egress capacity or number of exits is achieved through the use of a fire escape in accordance with section 3406.

2. Category b

Capacity of the means of egress complies with section 1004 and the number of exits complies with the minimum number required by section 1006.

3. Category c

Capacity of the means of egress is equal to or exceeds one hundred twenty-five percent (125%) of the required means of egress capacity, the means of egress complies with the minimum required width dimensions specified in the code and the number of exits complies with the minimum number required by section 1021.

4. Category d

The number of exits provided exceeds the number of exits required by section 1021. Exits shall be located a distance apart from each other equal to not less than that specified in section 1015.2.

5. Category e

The area being evaluated meets both Categories c and d.

3412.6.12 Dead ends.

In spaces required to be served by more than one (1) means of egress, evaluate the length of the exit access travel path in which the building occupants are confined to a single path of travel. Under the categories and occupancies in Table 3412.6.12, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.12, Dead Ends, for means of egress and general safety.

TABLE 3412.6.12
DEAD-END VALUES

| OCCUPANCY | CATEGORIES[a] | | |
|---|---|---|---|
| | a | b | c |
| A-1, A-3, A-4, B, E, F, M, R, S | -2 | 0 | 2 |
| A-2, E | -2 | 0 | 2 |

[a] For dead-end distances between categories, the dead-end value shall be obtained

by linear interpolation.

3412.6.12.1 Categories.

The categories for dead ends are:

1. Category a

   Dead end of thirty-five feet (35') (10,670 mm) in non-sprinklered buildings or seventy feet (70') (21,340 mm) in sprinklered buildings.

2. Category b

   Dead end of twenty feet (20') (6,096 mm); or fifty feet (50') (15,240 mm) in Group B in accordance with section 1020.4, exception 2.

3. Category c

   No dead ends; or ratio of length to width (l/w) is less than two and one half to one (2.5:1).

4. Category d

   Dead ends exceeding category a.

3412.6.13 Maximum exit access travel distance.

Evaluate the length of exit access travel to an approved exit. Determine the appropriate points in accordance with the following equation and enter that value into Table 3412.7 under Safety Parameter 3412.6.13, Maximum Exit Access

Travel Distance, for means of egress and general safety. The maximum allowable exit access travel distance shall be determined in accordance with section 1016.1.

$$\text{Points} = 20 \times \frac{\text{Maximum allowable travel distance} - \text{Maximum actual travel distance}}{\text{Max. allowable travel distance}}$$

**(Equation 34-6)**

3412.6.14 Elevator control.

Evaluate the passenger elevator equipment and controls that are available to the fire department to reach all occupied floors. Emergency recall and

in-car operation of elevator recall controls shall be provided in accordance with the International Fire Code. Under the categories and occupancies in Table 3412.6.14, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.14, Elevator Control, for fire safety, means of egress and general safety. The values shall be zero (0) for a single-story building.

TABLE 3412.6.14
ELEVATOR CONTROL VALUES

| ELEVATOR TRAVEL | CATEGORIES | | | |
|---|---|---|---|---|
| | a | b | c | d |
| Less than 25 feet of travel above or below the primary level of elevator access for emergency fire-fighting or rescue personnel | -2 | 0 | 0 | +2 |
| Travel of 25 feet or more above or below the primary level of elevator access for emergency fire-fighting or rescue personnel | -4 | NP | 0 | +4 |

For SI: 1 foot = 304.8 mm.
NP = Not Permitted

3412.6.14.1 Categories.

The categories for elevator controls are:

1. Category a

   No elevator.

2. Category b

   Any elevator without Phase I emergency recall operation and Phase II emergency in-car operation.

3. Category c

   All elevators with Phase I emergency recall operation and Phase II emergency in-car operation as required by the International Fire Code.

4. Category d

All meet Category c; or Category b where permitted to be without Phase I emergency recall operation and Phase II emergency in-car operation; and at least one (1) elevator that complies with new construction requirements serves all occupied floors.

3412.6.15 Means of egress emergency lighting.

Evaluate the presence of and reliability of means of egress emergency lighting. Under the categories and occupancies in Table 3412.6.15, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.15, Means of Egress Emergency Lighting, for means of egress and general safety.

TABLE 3412.6.15
MEANS OF EGRESS EMERGENCY LIGHTING VALUES

| NUMBER OF EXITS REQUIRED BY SECTION 1015 | CATEGORIES | | |
|---|---|---|---|
| | a | b | c |
| Two or more exits | NP | 0 | 4 |
| Minimum of one exit | 0 | 1 | 1 |

3412.6.15.1 Categories.

The categories for means of egress emergency lighting are:

1. Category a

   Means of egress lighting and exit signs not provided with emergency power in accordance with Chapter 27.

2. Category b

   Means of egress lighting and exit signs provided with emergency power in accordance with Chapter 27.

3. Category c

   Emergency power provided to means of egress lighting and exit signs which provides protection in the event of power failure to the site or building.

3412.6.16 Mixed occupancies.

Where a building has two (2) or more occupancies that are not in the same occupancy classification, the separation between the mixed occupancies shall be evaluated in accordance with this section. Where there is no separation between the mixed occupancies or the separation between mixed occupancies does not qualify for any of the categories indicated in section 3412.6.16.1, the building shall be evaluated as indicated in section 3412.6 and the value for mixed occupancies shall be zero (0). Under the categories and occupancies in Table 3412.6.16, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.16, Mixed Occupancies, for fire safety and general safety. For buildings without mixed occupancies, the value shall be zero (0).

TABLE 3412.6.16
MIXED OCCUPANCY VALUES[a]

| OCCUPANCY | CATEGORIES | | |
|---|---|---|---|
| | a | b | c |
| A-1, A-2, R | -10 | 0 | 10 |
| A-3, A-4, B, E, F, M, S | -5 | 0 | 5 |

[a] For fire-resistance ratings between categories, the value shall be obtained by linear interpolation.

3412.6.16.1 Categories.

The categories for mixed occupancies are:

1. Category a

   Occupancies separated by minimum one (1) hour fire barriers or minimum one (1) hour horizontal assemblies, or both.

2. Category b

   Separations between occupancies in accordance with section 508.4.

3. Category c

Separations between occupancies having a fire-resistance rating of not less than twice that required by section 508.4.

3412.6.17 Automatic sprinklers.

Evaluate the ability to suppress a fire based on the installation of an automatic sprinkler system in accordance with section 903.3.1.1. “Required sprinklers” shall be based on the requirements of this code. Under the categories and occupancies in Table 3412.6.17, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.17, Automatic Sprinklers, for fire safety, means of egress divided by two (2) and general safety.

TABLE 3412.6.17
SPRINKLER SYSTEM VALUES

| OCCUPANCY | CATEGORIES | | | | | |
|---|---|---|---|---|---|---|
| | a | b | c | d | e | f |
| A-1, A-3, F, M, R, S-1 | -6 | -3 | 0 | 2 | 4 | 6 |
| A-2 | -4 | -2 | 0 | 1 | 2 | 4 |
| A-4, B, E, S-2 | -12 | -6 | 0 | 3 | 6 | 12 |

3412.6.17.1 Categories.

The categories for automatic sprinkler system protection are:

1. Category a

Sprinklers are required throughout; sprinkler protection is not provided, or the sprinkler system design is not adequate for the hazard protected in accordance with section 903.

2. Category b

Sprinklers are required in a portion of the building; sprinkler protection is not provided, or the sprinkler system design is not adequate for the hazard protected in accordance with section 903.

3. Category c

Sprinklers are not required; none are provided.

4. Category d

Sprinklers are required in a portion of the building; sprinklers are provided in such portion; the system is one which complied with the code at the time of installation and is maintained and supervised in accordance with section 903.

5. Category e

Sprinklers are required throughout; sprinklers are provided throughout in accordance with Chapter 9.

6. Category f

Sprinklers are not required throughout; sprinklers are provided throughout in accordance with Chapter 9.

3412.6.18 Standpipes.

Evaluate the ability to initiate attack on a fire by making a supply of water available readily through the installation of standpipes in accordance with section 905. Required standpipes shall be based on the requirements of this code. Under the categories and occupancies in Table 3412.6.18, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.18, Standpipes, for fire safety, means of egress and general safety.

TABLE 3412.6.18
STANDPIPE SYSTEM VALUES

| OCCUPANCY | CATEGORIES | | | |
|---|---|---|---|---|
| | a[a] | b | c | d |
| A-1, A-3, F, M, R, S-1 | -6 | 0 | 4 | 6 |
| A-2 | -4 | 0 | 2 | 4 |
| A-4, B, E, S-2 | -12 | 0 | 6 | 12 |

[a] This option cannot be taken if Category a or b in Section 3412.6.17 is used.

3412.6.18.1 Standpipe.

The categories for standpipe systems are:

1. Category a

   Standpipes are required; standpipe is not provided, or the standpipe system design is not in compliance with section 905.3.

2. Category b

   Standpipes are not required; none are provided.

3. Category c

   Standpipes are required; standpipes are provided in accordance with section 905.

4. Category d

   Standpipes are not required; standpipes are provided in accordance with section 905.

3412.6.19 Incidental uses.

Evaluate the protection of incidental uses in accordance with section 509.4.2. Do not include those where this code requires automatic sprinkler systems throughout the buildings, including covered or open mall buildings, high-rise buildings, public garages and unlimited area buildings. Assign the lowest score from Table 3412.6.19 for the building or floor area being evaluated and enter that value into Table 3412.7 under safety Parameter 3412.6.19, Incidental Use Area, for fire safety, means of egress and general safety. If there are no specific occupancy areas in the building or floor area being evaluated, the value shall be zero (0).

TABLE 3412.6.19
INCIDENTAL USE AREA VALUES[a]

| PROTECTION REQUIRED BY TABLE 508.2.5 | PROTECTION PROVIDED | | | | | | |
|---|---|---|---|---|---|---|---|
| | None | 1 Hour | AS | AS with | 1 Hour and | 2 | 2 Hours and |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | SP | AS | Hours | AS |
| 2 Hours and AS | -4 | -3 | -2 | -2 | -1 | -2 | 0 |
| 2 Hours, or 1 Hour and AS | -3 | -2 | -1 | -1 | 0 | 0 | 0 |
| 1 Hour and AS | -3 | -2 | -1 | -1 | 0 | -1 | 0 |
| 1 Hour | -1 | 0 | -1 | 0 | 0 | 0 | 0 |
| 1 Hour, or AS with SP | -1 | 0 | -1 | 0 | 0 | 0 | 0 |
| AS with SP | -1 | -1 | -1 | 0 | 0 | -1 | 0 |
| 1 Hour or AS | -1 | 0 | 0 | 0 | 0 | 0 | 0 |
| [a] AS = Automatic sprinkler system; SP = Smoke partitions (See Section 508.2.5)<br>Note: For table 3412.7, see next page. | | | | | | | |

1401.6.21.3.1 Categories.

The categories for attendant-to-patient concentrations are:

1. Category a

   attendant-to-patient concentrations is one to five (1:5).

2. Category b

   attendant-to-patient concentrations is one to six (1:6) to one to ten (1:10).

3. Category c

   attendant-to-patient concentrations is greater than one to ten (1:10) or no patients.

3412.7 Building score.

After determining the appropriate data from section 3412.6, enter those data in Table 3412.7 and total the building score.

TABLE 3412.7
SUMMARY SHEET-BUILDING CODE

Existing occupancy:_____ Proposed occupancy:_____

Year Building was constructed:_____ Number of stories:_____ Height in feet:_____

Type of construction:_____ Area per floor:_____

Percentage of open perimeter increase:_____%

Completely suppressed: Yes____ No____ Corridor wall rating:_____

Compartmentation: Yes____ No____ Required door closers: Yes____ No____

Fire-resistance rating of vertical opening enclosures:_____

Type of HVAC system:_____, serving number of floors:_____

Automatic fire detection: Yes____ No____ Type and location:_____

Fire alarm system: Yes____ No____ Type:_____

Smoke control: Yes____ No____ Type:_____

Adequate exit routes: Yes____ No____ Dead ends:_____ Yes____ No____

Maximum exit access travel distance:_____ Elevator controls: Yes____ No____

Means of egress emergency lighting: Yes____ No____ Mixed occupancies: Yes____ No____

| SAFETY PARAMETERS | FIRE SAFETY (FS) | MEANS OF EGRESS (ME) | GENERAL SAFETY (GS) |
|---|---|---|---|
| 3412.6.1 Building Height<br>3412.6.2 Building Area<br>3412.6.3 Compartmentation | | | |
| 3412.6.4 Tenant and Dwelling Unit Separations<br>3412.6.5 Corridor Walls | | | |

| | | | |
|---|---|---|---|
| 3412.6.6 Vertical Openings | | | |
| 3412.6.7 HVAC Systems<br>3412.6.8 Automatic Fire Detection<br>3412.6.9 Fire Alarm Systems | | | |
| 3412.6.10 Smoke Control<br>3412.6.11 Means of Egress Capacity<br>3412.6.12 Dead Ends | * * * *<br>* * * *<br>* * * * | | |
| 3412.6.13 Maximum Exit Access Travel Distance<br>3412.6.14 Elevator Control<br>3412.6.15 Means of Egress Emergency Lighting | * * * *<br><br>* * * * | | |
| 3412.6.16 Mixed Occupancies<br>3412.6.17 Automatic Sprinklers<br>3412.6.18 Standpipes<br>3412.6.19 Incidental Use | | * * * *<br>÷ 2 = | |
| Building score – total value | | | |
| ****No applicable value to be inserted. | | | |

3412.8 Safety scores.

The values in Table 3412.8 are the required mandatory safety scores for the evaluation process listed in section 3412.6.

TABLE 3412.8
MANDATORY SAFETY SCORES[a]

| OCCUPANCY | FIRE SAFETY (MFS) | MEANS OF EGRESS (MME) | GENERAL SAFETY (MGS) |
|---|---|---|---|
| A-1 | 20 | 31 | 31 |
| A-2 | 21 | 32 | 32 |
| A-3 | 22 | 33 | 33 |

| | | | |
|---|---|---|---|
| A-4, E | 29 | 40 | 40 |
| B | 30 | 40 | 40 |
| F | 24 | 34 | 34 |
| M | 23 | 40 | 40 |
| R | 21 | 38 | 38 |
| S-1 | 19 | 29 | 29 |
| S-2 | 29 | 39 | 39 |

[a] MFS = Mandatory Fire Safety;
MME = Mandatory Means of Egress;
MGS = Mandatory General Safety.

3412.9 Evaluation of building safety.

The mandatory safety score in Table 3412.8 shall be subtracted from the building score in Table 3412.7 for each category. Where the final score for any category equals zero (0) or more, the building is in compliance with the requirements of this section for that category. Where the final score for any category is less than zero (0), the building is not in compliance with the requirements of this section.

TABLE 3412.9

EVALUATION FORMULAS [a]

| FORMULA | T3412.7 | | T 3412.8 | SCORE | | PASS | FAIL |
|---|---|---|---|---|---|---|---|
| FS – MFS ≥ 0 | (FS) | - | (MFS) | = | | | |
| ME – MME ≥ 0 | (ME) | - | (MME) | = | | | |
| GS – MGS ≥ 0 | (GS | - | (MGS | = | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | ) | | ) | | | | |

[a] FS = Fire Safety

ME = Means of Egress

GS = General Safety

[a] MFS = Mandatory Fire Safety

MME = Mandatory Means of Egress

MGS = Mandatory General Safety

3412.9.1 Mixed occupancies.-

For mixed occupancies, the following provisions shall apply:-

1. -Where the separation between mixed occupancies does not qualify for any category indicated in section 3412.6.16, the mandatory safety scores for the occupancy with the lowest general safety score in Table 3412.8 shall be utilized (see section 3412.6).

2. Where the separation between mixed occupancies qualifies for any category indicated in section 3412.6.16, the mandatory safety scores for each occupancy shall be placed against the evaluation scores for the appropriate occupancy.

## 1.254 Chapter 35: Referenced Standards

To IBC Chapter 35 add the following General Statement:

The various State of Rhode Island departments and agencies have designated powers to adopt and enforce Regulations impacting new and existing construction. Users of this code are advised to use all available resources to coordinate the design and approval process.

## 1.265 Appendices

Delete Appendices A, B, D, J. & K.

Retain Appendices C, E, G, H, I.

Appendix F is permitted to be enforced on a discretionary basis by the local building code official, when in his opinion, existing site and environmental conditions warrant additional protective measures specified herein.

## 1.276 Appendix G

FLOOD RESISTANT CONSTRUCTION

Add the following section to Appendix G105.1 General

G105.1.1 Notice.

Upon receipt of an application for a variance the Chairman of the Board of Appeals shall forward a copy of said application to the Rhode Island Emergency Management Office, Attention: Statewide Flood-Plain Coordinator.