

RHODE ISLAND FIRE ALARM CODE

**NFPA 1, *Uniform Fire Code*™, 2003 edition
(as reserved and amended)**

Chapter 13 Fire Protection Systems

Sections 13.7 and 13.8

This document consists of sections 13.7 and 13.8 of Chapter 13 of the Rhode Island Uniform Fire Code [NFPA 1, *Uniform Fire Code*™, 2003 edition, as reserved and amended], adopted by the RI Fire Safety Code Board of Appeal and Review on December 2, 2003 with an effective date of February 20, 2004.

Revisions to these sections have been adopted by the Board in Blanket Variance # 04-22 [10/19/04], # 04-22A [11/16/04] and # 05-01 [1/25/05] and are included within the body of this document.

In accordance with the provisions of Blanket Variance # 04-13(5) [6/15/04], any section(s) of this Code not specifically amended or reserved is a valid code section and has the force and effect of law.

TABLE OF CONTENTS

GENERAL REQUIREMENTS	
Exceptions for Existing Systems	1
RI Amendments	3
OCCUPANCIES	
General Assembly & Nightclubs	5
Theaters	7
Educational	8
Health Care	9
Detention & Correctional	10
Residential	
Dormitory / Hotel / Motel	12
Apartment Buildings	14
Lodging & Rooming Houses	16
1- and 2-Family Dwellings / 3-Family Apartments	17
Residential Board & Care Facilities	18
Emergency Shelters	20
Mercantile	21
Business	22
Industrial	23
Storage	24
Day Care	25
Multiple Occupancies / Hazardous Conditions	27
Administrative	28
TYPES OF SYSTEMS	
Local	29
Municipally Connected	31
High Rise	34
Multiplex Systems, Addressable, and Addressable-Analog Systems	37
EQUIPMENT	
Manual Fire Alarm Boxes / Notification Appliances	38
Detectors	39
Sprinklers / Waterflow	40
Annunciation	41
HVAC Shutdown	42
Remote Equipment / Drill Switch / Elevators	43
INSTALLATION & WIRING	
Wiring Methods	45
RI Color Code	46
Connection to Fire Department	49
System Acceptance	50
Maintenance of System	52

(Amd) 13.7.1.1

Where building fire alarm systems or automatic fire detectors are required by other sections of this *Code* or any other codes, they shall be provided in accordance with *NFPA 72*[®], *National Fire Alarm Code*[®] (2002 edition) and Sections 13.7 and 13.8 of this Chapter. Any conflicts between the provisions of this Chapter, as amended and *NFPA 72* shall be resolved in favor of compliance with the most restrictive requirements as determined by the AHJ.

(Add) 13.7.1.1.1

Exception: Existing fire alarm systems that were in compliance with the provisions of Chapter 8 of the Rhode Island Fire Prevention Code¹ [RIFPC], 1997 edition, as reserved and supplemented, subject to the alternative provisions set forth in § 13.7.1.1.1.1, shall be permitted to be continued in use. The "EXCEPTION" to Section 8-1.1 permitting existing installations to remain in use shall apply only if in accordance with this Chapter. In addition, the requirements of §§ 13.8.9.1 – 13.8.9.1.6.5 shall apply to all places of assembly, new and existing.

(Add) 13.7.1.1.1.1

- a) Existing supervised (municipally-connected), high-rise and multiplex (multiplex, addressable and addressable-analog) systems installed with MC cable dual rated as FPL and 2-hour rated by UL shall be deemed to be in compliance provided that the conductors are a minimum #16 gauge solid copper, type thhn/thwn or tfn and an equipment bonding conductor is provided.
- b) Existing local systems installed with type FPL cable, shielded with drain wire, minimum #16 gauge solid copper, type thhn/thwn or tfn and enclosed within walls and ceilings without a raceway, shall be deemed to be in compliance. Suspended drop-in type ceiling assemblies do not constitute a ceiling for the purposes of this subsection. Existing local systems installed with the end-of-line resistor (EOLR) located in the field shall be deemed to be in compliance.
- c) Existing multiplex (multiplex, addressable and addressable-analog) systems that are not capable of being programmed such that when an alarm is silenced or acknowledged, the municipal connection shall be restorable shall be deemed to be in compliance. Systems that are capable of such programming shall be changed to meet this requirement.
- d) Existing systems not meeting the feed and return separation requirements of § 13.8.10.6.2.2 shall be deemed to be in compliance.
- e) Existing systems with wiring that meets the requirements of § 13.8.10.6.2 but does not meet the color code requirements of § 13.8.10.6.3 shall be deemed to be in compliance provided that each conductor, at each junction point, is correctly identified by the use of colored heat-shrink tubing, colored tape or a method approved by the State Fire Marshal.
- f) Existing systems with automatic sprinkler systems having only a main flow alarm due to the piping configuration of the sprinkler system shall be deemed to be in compliance.

¹ As adopted by the Board of Appeal on 4/23/02 with an effective date of 7/1/02

- g) Existing systems with automatic sprinkler system tamper switches and/or HVAC duct detectors that report as a trouble signal shall be deemed to be in compliance.
- h) Existing systems with junction points between devices shall be deemed to be in compliance provided that they are terminated on terminal strips.
- i) Existing manual fire alarm boxes which have the operable part mounted at not less than 3 ½ ft. (1.07 m.) and not more than 4 ½ ft. (1.37 m.) above floor level shall be deemed to be in compliance provided that they meet the other requirements of § 13.8.10.5.2.
- j) Existing fire alarm systems in residential occupancies not having a mini-horn in each sleeping room as required by § 13.8.10.5.3 shall be deemed to be in compliance provided that the sound levels required by 72:7.4.4.1 are met by other system audible notification appliances. Certification of sound levels shall be provided by a licensed professional engineer to the AHJ upon request.

(Add) 13.7.1.1.2

The provisions of § 13.8.10.9, Maintenance of the System, shall apply to all systems, new and existing.

(Res) 13.7.1.4.9 through 13.7.4.7.6

Sections 13.7.1.4.9 through 13.7.4.7.6 of the Rhode Island Uniform Fire Code are hereby reserved pending future review by the Rules and Regulations Subcommittee of the Fire Safety Code Board of Appeal & Review.

(Res) 13.8.1 through 13.8.6

Sections 13.8.1 through 13.8.6 of the Rhode Island Uniform Fire Code are hereby reserved pending future review by the Rules and Regulations Subcommittee of the Fire Safety Code Board of Appeal & Review.

(Add) 13.8.7 Fire Alarm Systems – RI Amendments.

(Add) 13.8.7.1

All buildings and facilities covered under the RI Uniform Fire Code, and all codes adopted pursuant thereto, shall be equipped with an approved fire alarm system installed, maintained and tested in accordance with this chapter and any updated fire alarm rules and regulations adopted by the Fire Safety Code Board of Appeal & Review. Any building, that is not a nightclub place of assembly with an occupant load of greater than one hundred fifty (> 150), and is required to be equipped with a fire alarm system pursuant to the Rhode Island Uniform Fire Code, shall be so equipped on or before July 1, 2005.

(Add) 13.8.7.2

Whenever or wherever any fire alarm system is required for compliance with the provisions of this *Code*, such fire alarm system shall thereafter be continuously maintained in accordance with all applicable provisions of this *Code*.

(Add) 13.8.7.3

No provisions of this chapter shall be construed so as to permit the reduction, alteration or removal of any existing fire alarm system or local smoke alarms installed under prior codes that decreases the level of life safety in any existing protected occupancy.

(Add) 13.8.7.4

Equipment constructed and installed in conformity with this *Code* shall be listed for the purpose for which it is used. Fire alarm system components shall be installed in accordance with the manufacturers' installation instructions.

(Add) 13.8.7.5

All fire alarm devices and appliances that receive their power or supervision from the initiating device circuit, signaling line circuit or the notification appliance circuit of a fire alarm control unit shall be listed for use with the control unit.

(Add) 13.8.7.6

Where installed, detection that is nonrequired (voluntary), whether total, partial or selective coverage, shall conform to the requirements of this *Code*. [72:6.2.3.1]

(Add) 13.8.8

Whenever fire alarm system notification appliances in a protected building are activated, all occupants shall evacuate the building unless specifically authorized to remain in the building by the fire department official in charge of the scene. In the case of a fire alarm activation in a high-rise building, occupants shall evacuate the area(s) where the notification appliances are activated or as directed by the fire department official in charge of the scene. See also chapter 10.5.

EXCEPTION # 1: Health Care and Detention & Correctional Occupancies and those occupancies specifically authorized by the AHJ to protect in place rather than evacuate.

EXCEPTION #2: Where permitted by RILSC Chapters 11 through 42 and approved by the AHJ, a presignal system² or positive alarm sequence³ shall be permitted.

(Add) 13.8.8.1

In any building in which a fire alarm system is installed, the AHJ shall have the authority to require a key access box containing all keys to the building where fire alarm protection is provided, in accordance with § 10.12.1. Such key access box shall be compatible with the access system in use in the particular jurisdiction where the building is located and installed in a location approved by the AHJ. In addition, a key to the fire alarm control unit shall be provided and kept in the key access box.

² 72:6.8.1.2 / 101:9.6.3.3

³ 72:6.8.1.3 / 101:9.6.3.4

(Add) 13.8.9 OCCUPANCIES REQUIRING FIRE ALARM SYSTEMS

(Add) 13.8.9.1 ASSEMBLY

(Add) 13.8.9.1.1

An occupancy (1) used for a gathering of fifty or more (≥ 50) persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation, or similar uses; or (2) used as a special amusement building, regardless of occupant load.

(Add) 13.8.9.1.2

Assembly occupancies include the following:

Armories	Mortuary Chapels
Assembly Halls	Motion Picture Theaters
Auditoriums	Museums
Bowling Lanes	Passenger stations and terminals of
Club Rooms	air, surface, underground, ground
College and university classrooms,	and marine public transportation
50 persons and over	Facilities
Conference Rooms	Places of Religious Worship
Courtrooms	Pool Rooms
Dance Halls	Recreational Piers
Drinking Establishments	Restaurants (50 persons and over)
Exhibition Halls	Skating Rinks
Gymnasiums	Special Amusement Buildings
Libraries	Theaters and Nightclubs

(Add) 13.8.9.1.3

For the purposes of § 13.8.9.1, places of assembly shall be subdivided into those having an occupant load of more than one thousand ($> 1,000$) persons, those having an occupant load of more than three hundred (> 300) up to one thousand ($\leq 1,000$) persons; and those having an occupant load of fifty (≥ 50) to three hundred (≤ 300) persons.

(Add) 13.8.9.1.3.1

A "nightclub place of assembly" shall mean a place of public accommodation, which in general is characterized by all of the following:

- (1) provides entertainment by a live band or recorded music generating above normal sound levels.
- (2) has its primary source of revenue, in general, the sale of beverages of any kind for consumption on the premises and/or cover charges. Food, if served, is considered a secondary attraction.
- (3) Has an occupant load in total or in any single area or room of at least one hundred (≥ 100) patrons.

Nothing in this definition shall be construed to include any place of public accommodation or any event within a place of public accommodation, which is in its nature distinctly private.

(Add) 13.8.9.1.4

Occupancy of any room or space for assembly purposes by fewer than fifty (< 50) persons in a building or other occupancy and incidental to such other occupancy shall be classified as part of the other occupancy and shall be subject to the provisions applicable thereto.

(Add) 13.8.9.1.5 FIRE ALARM SYSTEM REQUIREMENTS
(All Assembly Occupancies except Theaters)

(Add) 13.8.9.1.5.1

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in all places of assembly having an occupant load of fifty (≥ 50) to three hundred (≤ 300) persons.

(Add) 13.8.9.1.5.2

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in all places of assembly having an occupant load of more than three hundred (> 300) persons.

(Add) 13.8.9.1.5.2.1

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in all nightclub places of assembly with an occupant load of one hundred fifty or greater (≥ 150).

(Add) 13.8.9.1.5.3

In addition to the locations prescribed in § 13.8.10 of this chapter, a manual fire alarm box shall be installed on every stage, near any fixed lighting control panel and in any projection booth.

(Add) 13.8.9.1.5.3.1

Manual fire alarm boxes, with the approval of the AHJ, may be omitted from required exits and installed in such supervised locations as bar areas, hostess stands or other areas attended by permanent staff.

(Add) 13.8.9.1.5.4

A combination rate of rise and one hundred thirty-five degrees (135°) to one hundred forty degrees (140°) F. fixed temperature heat detector shall be installed above all stage areas, below all accessible stage areas and in every projection booth.

(Add) 13.8.9.1.5.5

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.1.5.6

Upon the activation of any fire alarm system in any nightclub place of assembly, the notification appliances throughout the facility shall immediately activate and the fire alarm system shall be interconnected with the building systems so that all emergency lights or other appropriate lighting shall activate and that all other conflicting sounds and visuals shall cease.

(Add) 13.8.9.1.5.7

In any assembly occupancy where the exemption to the requirement for automatic sprinklers is utilized, the fire alarm system shall meet the requirements for total (complete) coverage in accordance with 72:5.2.1.

(Add) 13.8.9.1.6 FIRE ALARM SYSTEM REQUIREMENTS
(Theaters Only)

(Add) 13.8.9.1.6.1

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every theater.

(Add) 13.8.9.1.6.2

In addition to the locations prescribed in § 13.8.10 of this chapter, a manual fire alarm box shall be installed on every stage, near any fixed lighting control panel, and in every projection booth.

(Add) 13.8.9.1.6.3

Manual fire alarm boxes, with the approval of the AHJ, may be omitted from required exits and installed in such supervised locations as the ticket booth or the refreshment stand.

(Add) 13.8.9.1.6.4

Notification appliances shall be installed where required by the AHJ. A complete fire alarm/voice communication system with an automatic voice evacuation message is required. The activation of the fire alarm system shall automatically interrupt all theater audio systems and automatically raise the house lights. In addition, if the theater is classified as a nightclub, all emergency lights or other appropriate lighting shall activate whenever the fire alarm system is activated.

(Add) 13.8.9.1.6.5

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.2 EDUCATIONAL

(Add) 13.8.9.2.1

An occupancy used for educational purposes through the twelfth (12th) grade by six (≥ 6) or more persons for four (≥ 4) or more hours per day or more than twelve (> 12) hours per week.

(Add) 13.8.9.2.2

Educational occupancies include the following:

Academies

Schools

Kindergartens

(Add) 13.8.9.2.3

Other occupancies associated with educational institutions shall be in accordance with the appropriate sections of this chapter. In cases where instruction is incidental to some other occupancy, the section of this chapter governing such other occupancy shall apply.

(Add) 13.8.9.2.4 FIRE ALARM SYSTEM REQUIREMENTS

(Add) 13.8.9.2.4.1

A total (complete) coverage fire alarm system as is defined in **72:5.5.2.1 - Initiating Devices - Detector Coverage** and as prescribed in § 13.8.10.4.2 of this chapter shall be installed in all educational occupancies.

(Add) 13.8.9.2.4.2

In cases where instruction is incidental to some other occupancy, the section of these regulations governing the other occupancy shall apply. Sunday schools or church schools that are not used for daily classes throughout the week shall comply with that section of this chapter dealing with places of public assembly.

(Add) 13.8.9.2.4.3

Notification appliances shall be in accordance with §§ 13.8.10.5.3 & 13.8.10.5.3.1.

(Add) 13.8.9.2.4.4

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.3 HEALTH CARE

(Add) 13.8.9.3.1

An occupancy used for purposes of medical or other treatment or care of four (≥ 4) or more persons where such occupants are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control.

(Add) 13.8.9.3.2

Health care occupancies include the following:

Hospitals	Nursing homes
Limited care facilities	Ambulatory health care centers ⁴

(Add) 13.8.9.3.3 FIRE ALARM SYSTEM REQUIREMENTS

(Add) 13.8.9.3.3.1

A total (complete) coverage fire alarm system⁵ as is defined in **72:5.5.2.1 - Initiating Devices - Detector Coverage** and as prescribed in § 13.8.10.4.2 shall be installed in all health care facilities.

(Add) 13.8.9.3.3.2

Provisions for the manual silencing of audible notification appliances may be installed if approved in writing by the AHJ. If manual silencing of the audible notification appliances is permitted by the AHJ, it shall be key-operated, located within a locked cabinet or otherwise arranged to provide suitable protection against unauthorized use. Once notification appliances are silenced, a visual zone alarm signal shall be activated until such time as the alarm condition has been cleared. Any subsequent alarm condition shall cause the notification appliances to resound. [**72:4.4.3.7**]

(Add) 13.8.9.3.3.2.1

Chimes, bells, speakers or other distinctive notification appliances may be utilized instead of the horn/strobe type with the approval of the AHJ. In critical area such as communications centers, operating rooms, intensive care units and emergency departments, the AHJ may permit elimination of audible and in some cases visible signaling altogether.

(Add) 13.8.9.3.3.3

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

⁴ **101:3.3.152.1**

⁵ Total (complete) coverage required in those occupancies built or converted to on or after 1/1/05.

(Add) 13.8.9.4 DETENTION AND CORRECTIONAL

(Add) 13.8.9.4.1

An occupancy used to house four (≥ 4) or more individuals under varied degrees of restraint or security where such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control.

(Add) 13.8.9.4.2

Detention and correctional occupancies include the following:

Adult and juvenile substance abuse facilities	Adult local detention facilities
Adult and juvenile work camps	Juvenile community residential centers
Adult community residential centers	Juvenile detention facilities
Adult correctional institutions	Juvenile training schools

(Add) 13.8.9.4.3

Other uses within detention and correctional facilities, such as gymnasiums or industries, shall be in accordance with the appropriate section of this chapter.

(Add) 13.8.9.4.4 FIRE ALARM REQUIREMENTS

(Add) 13.8.9.4.4.1

A total (complete) coverage fire alarm system⁶ as is defined in **72:5.5.2.1 - Initiating Devices - Detector Coverage** and as prescribed in § 13.8.10.4.2 shall be installed in all detention and correctional facilities.

(Add) 13.8.9.4.4.2

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.4.4.3

Provisions for the manual silencing of audible notification appliances may be installed if approved in writing by the AHJ. If manual silencing of the audible notification appliances is permitted by the AHJ, it shall be key-operated, located within a locked cabinet or otherwise arranged to provide suitable protection against unauthorized use. Once notification appliances are silenced, a visual zone alarm signal shall be activated until such time as the alarm condition has been cleared. Any subsequent alarm condition shall cause the notification appliances to resound. [72:4.4.3.7]

⁶ Total (complete) coverage required in those occupancies built or converted to on or after 1/1/05.

(Add) 13.8.9.4.4.4

Chimes, bells, speakers or other distinctive notification appliances may be utilized instead of the horn/strobe type with the approval of the AHJ. In critical area such as control rooms, cell blocks and where the occupants are not capable of self-evacuation, the AHJ may permit elimination of audible and in some cases visible signaling altogether.

(Add) 13.8.9.5 RESIDENTIAL

(Add) 13.8.9.5.1

Residential occupancies are those occupancies in which sleeping accommodations are provided for normal residential purposes and include all buildings designed to provide sleeping accommodations.

EXCEPTION: Those occupancies classified under health care or detention and correctional.

(Add) 13.8.9.5.2

Residential occupancies shall be treated separately according to the following usage groups:

(Add) 13.8.9.5.3 DORMITORIES, HOTELS & MOTELS

(Add) 13.8.9.5.3.1

A dormitory is a building or a space in a building in which group sleeping accommodations are provided for more than sixteen (> 16) persons who are not members of the same family in one room or a series of closely associated rooms under joint occupancy and single management, with or without meals, but without individual cooking facilities.

(Add) 13.8.9.5.3.2

A hotel or motel is a building or groups of buildings under the same management in which there are sleeping accommodations for more than sixteen (> 16) persons and primarily used by transients for lodging with or without meals.

(Add) 13.8.9.5.3.3

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every dormitory, hotel or motel.

(Add) 13.8.9.5.3.4

IN ADDITION, a visible alarm signal shall be installed in guest rooms specifically designed for the handicapped. The visible alarm signal shall comply with § 13.8.10.5.

(Add) 13.8.9.5.3.5

A combination rate of rise and one hundred thirty-five degree (135°) to one hundred forty degree (140°) F. fixed temperature heat detector shall be installed in every sleeping room.

EXCEPTION: The heat detector may be omitted from sprinklered sleeping rooms.

(Add) 13.8.9.5.3.6

A single station AC smoke alarm with battery back-up shall be installed in every guest room and every living area and sleeping room within a guest suite.

(Add) 13.8.9.5.3.7

EXCEPTION: Buildings no more than two (≤ 2) stories high where each guest room has a direct exit to the outside of the building may have a fire alarm system as prescribed in § 13.8.10.4.1 in lieu of a municipally connected system.

In ADDITION: A single station AC smoke alarm with battery back-up shall be installed in every guest room and every living area and sleeping room within a guest suite.

(Add) 13.8.9.5.3.8

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.5.3.9

In addition, every hotel or dormitory shall be provided with either hardwired or wireless carbon monoxide (CO) detectors installed in accordance with NFPA 720 in every guest room and every living area and sleeping room within a guest suite where there is a fuel-burning appliance or fireplace located within the room.

(Add) 13.8.9.5.3.10

Any hotel or dormitory, not previously required to install such CO detectors, shall have the above detectors installed and approved on or before July 1, 2005.

(Add) 13.8.9.5.4 APARTMENT BUILDINGS

(Add) 13.8.9.5.4.1

A building containing four (≥ 4) or more dwelling units with independent cooking and bathroom facilities.

(Add) 13.8.9.5.4.1.1

For three-family apartment buildings, see § 13.8.9.5.6.

(Add) 13.8.9.5.4.1.2

Townhouse units are considered to be an apartment building if there are four or more (≥ 4) units in the building.

EXCEPTION: Should the units be separated by walls of sufficient fire resistance and structural integrity to be considered as separate buildings, then only the requirements of §§ 13.8.9.5.6.2 through 13.8.9.5.6.4 shall apply. [See 1:A.3.3.22.2 and 101:30.3.4.1.2, 101:31.3.4.1.2 & 101:A-3.3.27.3]

(Add) 13.8.9.5.4.2

Every apartment building shall have a fire alarm system installed as follows:

(Add) 13.8.9.5.4.2.1

Buildings containing more than three (> 3) and less than eight (< 8) dwelling units shall have a fire alarm system as prescribed in § 13.8.10.4.1.

(Add) 13.8.9.5.4.2.2

Buildings containing eight (≥ 8) or more dwelling units shall have a fire alarm system as prescribed in § 13.8.10.4.2.

(Add) 13.8.9.5.4.2.3

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.5.4.3

IN ADDITION: All dwelling units in new apartment buildings shall have smoke alarms as required by 72:11.5.3 and all dwelling units in existing apartment buildings shall have smoke alarms as required by 72:11.5.4 - Single- and Multiple-Station Alarms and Household Fire Alarm Systems.

(Add) 13.8.9.5.4.4

In addition, every apartment building shall be provided with either hardwired or wireless carbon monoxide (CO) detectors installed in accordance with NFPA 720 where there is a fuel-burning appliance or fireplace located within the dwelling unit.

(Add) 13.8.9.5.4.5

Any apartment building, not previously required to install such CO detectors, shall have the above detectors installed and approved on or before July 1, 2005.

(Add) 13.8.9.5.5 LODGING OR ROOMING HOUSES

(Add) 13.8.9.5.5.1

A building or portion thereof that does not qualify as a one-, two-family dwelling or three-family apartment, that provides sleeping accommodations for a total of sixteen or fewer (≤ 16) people on a transient or permanent basis, without personal care services, with or without meals, but without separate cooking facilities for individual occupants.

(Add) 13.8.9.5.5.1.1

Bed and Breakfast type occupancies with more than three (> 3) but fewer than seventeen (< 17) guests are considered lodging and rooming houses. [101:A.26.1.1.1]

(Add) 13.8.9.5.5.2

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in every lodging or rooming house.

(Add) 13.8.9.5.5.3

IN ADDITION: A single station AC smoke alarm with battery back-up shall be installed in every sleeping room.

(Add) 13.8.9.5.5.4

In addition, every lodging or rooming house shall be provided with either hardwired or wireless carbon monoxide (CO) detectors installed in accordance with NFPA 720 where there is a fuel-burning appliance or fireplace located within the sleeping room.

(Add) 13.8.9.5.5.5

Any lodging or rooming house, not previously required to install such CO detectors, shall have the above detectors installed and approved on or before July 1, 2005.

(Add) 13.8.9.5.6 ONE- AND TWO-FAMILY DWELLINGS AND THREE-FAMILY APARTMENTS

(Add) 13.8.9.5.6.1

One- and two-family dwellings include buildings containing not more than two (≤ 2) dwelling units in which each dwelling unit is occupied by members of a single family with not more than three (≤ 3) outsiders, if any, accommodated in rented rooms.

(Add) 13.8.9.5.6.1.1

A three-family apartment building is a building or portion thereof containing three (3) dwelling units with independent cooking and bathroom facilities.

(Add) 13.8.9.5.6.2

Smoke alarms and carbon monoxide detectors as prescribed by NFPA 72 and NFPA 720 shall be installed in all one- and two-family dwellings and all three family apartment buildings.

(Add) 13.8.9.5.6.2.1

In addition to the smoke alarms required by NFPA 72, a smoke alarm is highly recommended, but not required at the top of all open basement stairs.

(Add) 13.8.9.5.6.3

In addition, an interconnected smoke alarm(s) shall be installed in all integral or attached garages in dwelling units in which a building permit has been issued on or after February 20, 2004.

(Add) 13.8.9.5.6.3.1

EXCEPTION: Rate of rise heat detectors, fixed temperature heat detectors or other type detectors or alarms, listed for these applications, may be installed in situations where physical, environmental or other conditions would render smoke alarms impractical.

(Add) 13.8.9.5.6.4

Further, interconnected hard-wired or supervised interconnected UL[®] listed wireless smoke alarms installed in accordance with NFPA 72 and interconnected hard-wired or supervised interconnected UL[®] listed wireless carbon monoxide [CO] detectors installed in accordance with NFPA 720 shall be installed in all three (3) family apartment buildings on or before July 1, 2008.

(Add) 13.8.9.5.7 RESIDENTIAL BOARDING AND CARE FACILITIES

(Add) 13.8.9.5.7.1

A building or portion thereof that is used for lodging and boarding of four or more (≥ 4) residents, not related by blood or marriage to the owners or operators, for the purpose of providing personal care services.

(Add) 13.8.9.5.7.2

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in every small residential board and care facility⁷ housing less than seventeen (< 17) occupants.

(Add) 13.8.9.5.7.3

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every large residential board and care facility⁸ housing seventeen or more (≥ 17) occupants.

(Add) 13.8.9.5.7.4

IN ADDITION, a visible alarm signal shall be installed in sleeping rooms specifically designed for the handicapped. The visible alarm signal shall comply with § 13.8.10.5.

(Add) 13.8.9.5.7.4.1

EXCEPTION: A visible alarm signal is not required in sleeping rooms in small residential board and care facilities where the occupant classification is consistent with 1:A.3.3.138.22 (1) and there is constant supervision by staff.

IN ADDITION, mini horns as required by § 13.8.10.5.3 may also be omitted from these sleeping rooms if approved by the AHJ.

(Add) 13.8.9.5.7.5

A combination rate of rise and one hundred thirty-five degree (135°) to one hundred forty degree (140°) F. fixed temperature heat detector shall be installed in every sleeping room.

EXCEPTION: The heat detector may be omitted from sprinklered sleeping rooms.

(Add) 13.8.9.5.7.6

A single station AC smoke alarm with battery back-up shall be installed in every sleeping room.

⁷ 101:32.1.1.3(2) / 33.1.1.3(2)

⁸ 101:32.1.1.3(3) / 33.1.1.3(3)

(Add) 13.8.9.5.7.7

EXCEPTION: Buildings no more than two (≤ 2) stories high where each sleeping room has a direct exit to the outside of the building may have a fire alarm system as prescribed in § 13.8.10.4.1 in lieu of a municipally connected system.

IN ADDITION: A single station AC smoke alarm with battery back-up shall be installed in every sleeping room.

(Add) 13.8.9.5.7.8

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.5.7.9

In addition, every residential board and care facility shall be provided with either hardwired or wireless carbon monoxide (CO) detectors installed in accordance with NFPA 720.

(Add) 13.8.9.5.7.10

Any residential board and care facility, not previously required to install such CO detectors, shall have the above detectors installed and approved on or before July 1, 2005.

(Add) 13.8.9.5.8 EMERGENCY SHELTER OCCUPANCIES

(Add) 13.8.9.5.8.1

An occupancy or portion thereof used on a temporary basis to provide sleeping accommodations for transient individuals who have no other shelter arrangements during periods of severe life-threatening weather.

(Add) 13.8.9.5.8.2

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in every emergency shelter occupancy housing sixteen or fewer (≤ 16) residents.

(Add) 13.8.9.5.8.2.1

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every emergency shelter occupancy housing more than sixteen (> 16) residents.

(Add) 13.8.9.5.8.3

A combination rate of rise and one hundred thirty-five degree (135°) to one hundred forty degree (140°) F. fixed temperature heat detector shall be installed in every sleeping room.

EXCEPTION: The heat detector may be omitted from sprinklered sleeping rooms.

(Add) 13.8.9.5.8.4

A single station AC smoke alarm with battery back-up shall be installed in every sleeping room.

(Add) 13.8.9.5.8.5

In addition, every emergency shelter occupancy shall be provided with either hardwired or wireless carbon monoxide (CO) detectors installed in accordance with NFPA 720.

(Add) 13.8.9.6 MERCANTILE

(Add) 13.8.9.6.1

An occupancy used for the display and sale of merchandise.

(Add) 13.8.9.6.2

Mercantile occupancies include the following:

- | | |
|-------------------|------------------------------|
| Auction rooms | Shopping centers |
| Department stores | Supermarkets |
| Drugstores | Restaurants (< 50 occupants) |

(Add) 13.8.9.6.3 FIRE ALARM REQUIREMENTS

(Add) 13.8.9.6.3.1

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in all mercantile buildings having more than 600 ft² (55.74 m²), or more than one (> 1) story above grade, or having commercial cooking facilities.

(Add) 13.8.9.6.3.2

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every mercantile building having a total floor area of more than 10,000 ft² (929.03 m²) on any one floor or extending three or more (≥ 3) stories above grade level.

(Add) 13.8.9.6.3.3

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.7 BUSINESS

(Add) 13.8.9.7.1

An occupancy used for account and record keeping or the transaction of business other than mercantile.

(Add) 13.8.9.7.2

Business occupancies include the following:

Air Traffic Control Towers (ATCTs)	Courthouses
City/Town Halls	Dentist's Offices
College and University instructional buildings, classrooms < 50 persons and instructional laboratories	Doctor's Offices
	General Offices
	Outpatient Clinics – Ambulatory

(Add) 13.8.9.7.3 FIRE ALARM REQUIREMENTS

(Add) 13.8.9.7.3.1

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in all business buildings having more than 1,000 ft² (92.9 m²) or more than one (≥ 1) story above grade, or having commercial cooking facilities.

(Add) 13.8.9.7.3.2

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every business building having a total floor area of more than 10,000 ft² (929.03 m²) on any one floor or extending three or more (≥ 3) stories above grade level.

(Add) 13.8.9.7.3.3

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.8 INDUSTRIAL

(Add) 13.8.9.8.1

An occupancy in which products are manufactured or in which processing, assembling, mixing, packaging, finishing, decorating, or repair operations are conducted.

(Add) 13.8.9.8.2

Industrial occupancies include the following:

Dry cleaning plants	Laundries
Factories of all kinds	Power plants
Food processing plants	Pumping stations
Gas plants	Refineries
Hangars (for servicing or maintenance)	Sawmills
Telephone exchange facilities	Service/Repair Stations

(Add) 13.8.9.8.3 FIRE ALARM REQUIREMENTS

(Add) 13.8.9.8.3.1

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in all industrial buildings having more than 2,500 ft² (232.26 m²) or more than one (≥ 1) story above grade, or having commercial cooking facilities.

(Add) 13.8.9.8.3.2

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every industrial building having a total floor area of more than 10,000 ft² (929.03 m²) on any one floor or extending three or more (≥ 3) stories above grade level.

(Add) 13.8.9.8.3.3

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.9 STORAGE

(Add) 13.8.9.9.1

An occupancy used primarily for the storage or sheltering of goods, merchandise, products, vehicles or animals.

(Add) 13.8.9.9.2

Storage occupancies include the following:

Barns	Hangars (for storage only)
Bulk oil storage	Parking Structures
Cold storage	Stables
Freight terminals	Truck and marine terminals
Grain elevators	Warehouses

(Add) 13.8.9.9.3 FIRE ALARM REQUIREMENTS

(Add) 13.8.9.9.3.1

A fire alarm system as prescribed in § 13.8.10.4.1 shall be installed in all storage buildings having more than 2,000 ft² (185.81 m²) or more than one (≥ 1) story above grade, or having commercial cooking facilities.

(Add) 13.8.9.9.3.2

A fire alarm system as prescribed in § 13.8.10.4.2 shall be installed in every storage building having a total floor area of more than 10,000 ft² (929.03 m²) on any one floor or extending three or more (≥ 3) stories above grade level.

(Add) 13.8.9.9.3.3

Buildings classified as high rise shall have a fire alarm system as prescribed in § 13.8.10.4.3.

(Add) 13.8.9.9.3.4

EXCEPTION: Fire alarm systems shall not be required in non-combustible⁹ storage buildings with contents classified as low hazard¹⁰.

⁹ 1:3.3.130.6

¹⁰ 1:3.3.107.2 / 101:6.2

(Add) 13.8.9.10 DAY CARE

(Add) 13.8.9.10.1

An occupancy in which four or more (≥ 4) clients receive care, maintenance and supervision by other than their relatives or legal guardians, for less than twenty-four (< 24) hours per day.

(Add) 13.8.9.10.2

Day care occupancies include the following:

Adult Day-Care Occupancies, except
where part of a health care
occupancy
Child Day-Care Occupancies
Day Care Homes (4 – 12 clients) in
private dwellings

Kindergarten classes that are
incidental to a child day-care
occupancy
Nursery Schools

(Add) 13.8.9.10.3

In cases where care is incidental to some other occupancy, the section of this chapter governing such other occupancy shall apply.

(Add) 13.8.9.10.4 FIRE ALARM SYSTEM REQUIREMENTS

(Add) 13.8.9.10.4.1

A total (complete) coverage fire alarm system as defined in **72:5.5.2.1 - Initiating Devices - Detector Coverage** and as prescribed in § 13.8.10.4.2 of this chapter shall be installed in all day care occupancies.

(Add) 13.8.9.10.4.2

EXCEPTION: A fire alarm system as prescribed in § 13.8.10.4.1 may be installed in all day care occupancies used for the gathering of nineteen or less (≤ 19) clients and under 3,000 ft² (278.71 m²) and located on a ground floor in lieu of a municipally connected system.

(Add) 13.8.9.10.4.2.1

EXCEPTION: A fire alarm system as prescribed in § 13.8.10.4.1 is not required in day-care homes located in private dwellings provided that smoke alarms and carbon monoxide detectors as prescribed in § 13.8.9.5.6.2 are installed, including any area of the dwelling utilized for the day-care home operation.

(Add) 13.8.9.10.4.3

In addition, every child day care occupancy shall be provided with either hardwired or wireless carbon monoxide (CO) detectors installed in accordance with NFPA 720. Local smoke alarms shall not be required in areas protected by system smoke detectors.

(Add) 13.8.9.10.4.4

Any child day care occupancy, not previously required to install such CO detectors, shall have the above detectors installed and approved on or before July 1, 2005.

(Add) 13.8.9.11 MULTIPLE OCCUPANCIES

(Add) 13.8.9.11.1

When two or more classes of occupancy occur in the same building or structure and are intermingled so that separate safeguards are impractical, fire alarm requirements shall comply with the most restrictive life safety requirements of the occupancies involved. [1:1.3.4 / 101:6.1.14]

(Add) 13.8.9.11.1.2

EXCEPTION: An occupancy incidental to operations in another occupancy shall be permitted to be considered as part of the predominant occupancy and shall be subject to the provisions of this chapter that apply to the predominant occupancy.

(Add) 13.8.9.12 HAZARDOUS CONDITIONS

(Add) 13.8.9.12.1

In any building where a fire alarm system is exempted due to the minimum square footage provisions of §§ 13.8.9.6.3.1, 13.8.9.7.3.1, 13.8.9.8.3.1 or 13.8.9.9.3.1 or by § 13.8.9.9.3.4, a fire alarm system as prescribed in § 13.8.10.4.1 may be required by the AHJ where it is proven that life safety of the occupants is compromised due to the hazard of contents, proximity of exposures, limitations to fire department vehicle access or other such hazardous conditions. See also § 13.1.11.

(Add) 13.8.10 ADMINISTRATIVE PROVISIONS

(Add) 13.8.10.1 APPLICABILITY

(Add) 13.8.10.1.1

This chapter shall apply to all existing and new buildings and to all buildings where there is a change of use or occupancy to one that will require a fire alarm system.

(Add) 13.8.10.1.2

Existing buildings shall be in compliance with sections 13.7 and 13.8.

(Add) 13.8.10.2 AUTHORITY HAVING JURISDICTION

(Add) 13.8.10.2.1

The authority having jurisdiction [AHJ], for the purpose of §§ 13.7 – 13.8.10.9.5.3 only, shall be the state fire marshal or his or her designee and those chiefs of fire departments, superintendents of fire alarms, or directors of communication certified by the state fire marshal as prescribed by R.I.G.L. § 23-28.2-6. Enforcement of the provisions relating to residential local smoke alarms and carbon monoxide [CO] detectors shall remain the responsibility of the jurisdiction's fire prevention bureau.

(Add) 13.8.10.3 APPROVAL

(Add) 13.8.10.3.1

Before installation or alteration of any fire alarm system required by this chapter commences and regardless of what any other authority may require, construction documents and drawings showing complete system design details, inclusive of, but not limited to, a description of system operations and a description of the components of the system and their location within the protected building shall be submitted in writing to the AHJ and shall fully comply with the contents of this chapter.

(Add) 13.8.10.4 TYPES OF SYSTEMS

(Add) 13.8.10.4.1 Local Systems

(Add) 13.8.10.4.1.1

A local system, for the purpose of this chapter is defined as consisting of a power limited fire alarm control unit listed by the UNDERWRITERS LABORATORIES [hereinafter UL] or approved by FM GLOBAL [hereinafter FMG]. A minimum of twenty-four (≥ 24) hours of battery standby power is required for a local system. Class "B" wiring using an end of line resistor installed on terminal strips in the fire alarm control unit for both initiating and notification appliance circuits shall be used for all local systems. Class "A" wiring shall be required if the fire alarm control unit is so configured. All detectors, notification appliances and manual fire alarm boxes shall be mounted on approved junction boxes. Installation of this system shall be in compliance with NFPA 72 and §§ 13.8.10.5 (Equipment) and 13.8.10.6 (Installation and Wiring) of this chapter. The activation of any manual fire alarm box or the automatic activation of any detector or suppression system switch shall activate all notification appliances¹¹, de-energize all door holders, and initiate HVAC shut-down and elevator recall, if applicable.

(Add) 13.8.10.4.1.1.1

A weatherproof horn/strobe shall be installed on the exterior of each building at a location approved by the AHJ.

(Add) 13.8.10.4.1.2

A municipal connection is not required for this type of system, however a municipally connected fire alarm system meeting the requirements of § 13.8.10.4.2 may be installed at the option of the building owner.

(Add) 13.8.10.4.1.3

Manual fire alarms boxes marked "Local Alarm Not Connected To Fire Dept." shall be distributed throughout the protected building so that they are conspicuous, unobstructed and readily accessible. Manual fire alarm boxes shall be located within 5 ft. (1.52 m.) of the exit doorway opening at each exit on each floor. Manual fire alarm boxes shall be located within the occupied premises and are not to be located within stair enclosures.

EXCEPTION # 1: In residential occupancies¹² without a common corridor(s) and where multiple dwelling units egress into a common stair enclosure, the manual fire alarm box may be located in the common area within the stair enclosure.

EXCEPTION # 2: In residential occupancies such as dormitories, hotels & motels or apartment buildings no more than two (≤ 2) stories in height where each guest room or

¹¹ See 1:13.8.8

¹² 1:13.8.9.5

dwelling unit has its own independent and direct exit to a public way¹³, manual fire alarm boxes may be omitted.

(Add) 13.8.10.4.1.4

Automatic fixed temperature heat detectors with a rating of one hundred ninety degree (190°) to two hundred degree (200°) F. shall be installed in all kitchens, boiler rooms and accessible attics¹⁴.

(Add) 13.8.10.4.1.4.1

EXCEPTION: Kitchens adjacent to any sleeping rooms separated by any wall shall be protected by a combination rate of rise and one hundred thirty-five degrees (135°) to one hundred forty degrees (140°) F. fixed temperature heat detector in lieu of a fixed temperature heat detector¹⁵.

(Add) 13.8.10.4.1.5

Combination rate of rise and one hundred thirty-five degree (135°) to one hundred forty degree (140°) F. fixed temperature heat detectors shall be installed in all utility, mechanical, storage¹⁶, and maintenance rooms, all integral or attached garages and all elevator hoistways.

(Add) 13.8.10.4.1.5.1

Combination rate of rise and one hundred thirty-five degree (135°) to one hundred forty degree (140°) F. fixed temperature heat detectors shall be installed in spaces of 24 in. (0.61 m.) or more above suspended ceilings and installed in accordance with NFPA 72 - Initiating Devices, and shall be on a separate zone from the area below the ceiling.

(Add) 13.8.10.4.1.6

Smoke detectors shall be installed in all common corridors, stairwells at each floor, all elevator machine rooms and all elevator landings.

(Add) 13.8.10.4.1.7

Additional detectors shall be required in areas proven essential to life safety by the AHJ.

(Add) 13.8.10.4.1.8

Audible and visible notification appliances shall be installed in accordance with the requirements of NFPA 72 - Notification Appliances for Fire Alarm Systems and §§ 13.8.10.5.3 & 13.8.10.5.3.1.

¹³ 1:3.3.163

¹⁴ 87.7° – 93.3° C.

¹⁵ 57.2° - 60° C.

¹⁶ For the purposes of this section, closets having an area of more than 24 ft² (2.23 m²) in existing buildings and more than 12 ft² (1.11 m²) in new buildings shall be protected as storage rooms.

(Add) 13.8.10.4.2 Municipally Connected Systems

(Add) 13.8.10.4.2.1

Municipally connected systems shall comply with NFPA 72 and §§ 13.8.10.5 (Equipment), 13.8.10.6 (Installation and Wiring) and 13.8.10.7 (Connection to Fire Department) of this chapter. A municipally connected system for the purpose of this chapter is defined as a system consisting of a power limited fire alarm control unit listed by UL or approved by FMG, where the manual activation of any fire alarm box or the automatic activation of any heat detector, smoke detector, sprinkler flow switch, other extinguishing system switch or standpipe flow switch shall activate all notification appliances within the building¹⁷, de-energize door holders causing all fire/smoke doors that are allowed to be held open in the entire building to close, notify the local fire department, shut down any applicable heating, ventilating and air conditioning [HVAC] systems and initiate elevator recall. Operating power failure, low battery voltage, an open or grounded wire in any of the initiating device circuits [IDC], signaling line circuits [SLC], notification appliance circuits [NAC], the circuit to the municipal master box or transmitter, or the leased line to the remote station shall activate audible and visual trouble signals on the system control unit and annunciator, that cannot be reset until the circuits are restored to normal. All circuits and components of a fire alarm system shall be monitored for integrity as required by NFPA 72 - Fundamentals of Fire Alarm Systems. The audible trouble signal may be silenced with the trouble signal silencing switch but the lamp shall not be extinguished until the circuits are normal. Restoring the circuits to normal after the silencing switch has been operated shall cause the lamp to extinguish and the audible signal to resound until the silencing switch is restored to normal. In the event of a commercial power outage, the entire system shall immediately transfer to a standby battery source of power and be capable of supplying the entire system for sixty (≥ 60) hours. All initiating device circuits [IDC], signaling line circuits [SLC], and notification appliance circuits [NAC] shall be wired in a Class "A" fashion as defined in NFPA 72 - Protected Premises Fire Alarm Systems.

(Add) 13.8.10.4.2.2

Combination rate of rise and one hundred thirty-five degree (135°) to one hundred forty degree (140°) F. fixed temperature heat detectors shall be located in all general storage rooms¹⁸, all utility, electrical, and mechanical equipment rooms, all janitor closets, trash collection rooms, maintenance shops, locker rooms, classrooms, projection booths, above stage areas, below any accessible stage areas, all integral or attached garages and all elevator hoistways.

(Add) 13.8.10.4.2.2.1

Combination rate of rise and one hundred thirty-five degree (135°) to one hundred forty degree (140°) F. fixed temperature heat detectors shall be installed in spaces of 24 in. (0.61 m.) or more above suspended ceilings and installed in accordance with NFPA 72 - Initiating Devices, and shall be on a separate zone from the area below the ceiling.

¹⁷ See 1:13.8.8

¹⁸ For the purposes of this section, closets having an area of more than 24 ft² (2.23 m²) in existing buildings and more than 12 ft² (1.11 m²) in new buildings shall be protected as storage rooms.

(Add) 13.8.10.4.2.2.2

EXCEPTION: Rate anticipation detectors, line detectors, beam detectors or other type detectors listed for these applications may be installed in situations where physical, environmental or other conditions would render other detectors impractical.

(Add) 13.8.10.4.2.3

Automatic fixed temperature heat detectors with a rating of one hundred ninety degrees (190°) to two hundred degrees (200°) F. shall be installed in all boiler rooms, accessible attics, and kitchens or where permanent cooking or heating equipment is located.

(Add) 13.8.10.4.2.3.1

EXCEPTION: Kitchens adjacent to any sleeping rooms separated by any wall shall be protected by a combination rate of rise and one hundred thirty-five degrees (135°) to one hundred forty degrees (140°) F. fixed temperature heat detector in lieu of a fixed temperature heat detector.

(Add) 13.8.10.4.2.4

Smoke detectors shall be installed in all common corridors, in stairwells at each floor level, in all elevator machine rooms and all elevator landings.

(Add) 13.8.10.4.2.5

Manual fire alarms boxes shall be distributed throughout the protected building so that they are conspicuous, unobstructed and readily accessible. Manual fire alarm boxes shall be located within 5 ft. (1.52 m.) of the exit doorway opening at each exit on each floor. Manual fire alarm boxes shall be located within the occupied premises and are not to be located within stair enclosures. These boxes shall not be marked "local".

EXCEPTION # 1: In residential occupancies¹⁹ without a common corridor(s) and where multiple dwelling units egress into a common stair enclosure, the manual fire alarm box may be located in the common area within the stair enclosure.

EXCEPTION # 2: In residential occupancies such as dormitories, hotels & motels or apartment buildings no more than two (≤ 2) stories in height where each guest room or dwelling unit has its own independent and direct exit to a public way²⁰, manual fire alarm boxes may be omitted.

¹⁹ 1:13.8.9.5

²⁰ 1:3.3.163

(Add) 13.8.10.4.2.5.1

Additional boxes shall be provided on each floor or in each fire area to obtain a maximum horizontal travel distance of 200 ft. (60.96 m.) measured horizontally on the same floor to the nearest box unless otherwise specified in occupancy sections of this code. [72:5.12.8]

(Add) 13.8.10.4.2.5.2

Manual fire alarm boxes shall be mounted on both sides of grouped openings over 40 ft. (12.19 m.) in width, and within 5 ft. (1.52 m.) of each side of the opening. [72:5.12.7]

(Add) 13.8.10.4.2.6

Additional detectors shall be required in areas proven essential to life safety by the AHJ, and shall be in compliance with §§ 13.8.10.5 and 13.8.10.6.

(Add) 13.8.10.4.3 High Rise Systems

(Add) 13.8.10.4.3.1

A high rise building is defined as a building greater than 75 ft. (23 m.) in height measured from the lowest level of fire department vehicle access to the floor of the highest occupiable story. An occupiable story is a story occupied by people on a regular basis. Stories used exclusively for mechanical equipment rooms, elevator penthouses and similar spaces are not occupiable stories. [1:3.3.22.4 / 101:3.3]

(Add) 13.8.10.4.3.2

A high rise system for the purpose of this chapter is defined as a municipally connected fire alarm system consisting of a power limited fire alarm control unit listed by UL and/or approved by FMG, with voice communication and a two-way fire department communication system. All circuits for a high rise fire alarm system shall be installed in a Class "A" fashion as described in NFPA 72. Fire Alarm/Voice Communication Systems shall be provided in all high rise buildings regardless of the occupancy and shall operate as follows:

(Add) 13.8.10.4.3.3

The operation of any manual fire alarm box or the automatic activation of any heat detector, smoke detector, sprinkler flow switch, standpipe flow switch or other extinguishing system switch shall:

(Add) 13.8.10.4.3.3.1

Automatically sound a distinctive audible signal and activate the visible notification appliances on the floor where the alarm originated, one floor above and one floor below the floor where the alarm originated; See 1:13.8.8.

(Add) 13.8.10.4.3.3.2

Automatically notify the local fire department;

(Add) 13.8.10.4.3.3.3

Visually indicate the location of the origin of the alarm at the fire command center within the building;

(Add) 13.8.10.4.3.3.4

Interlock with the heating, ventilating and air conditioning [HVAC] control systems to provide for automatic fan shut-down as required in § 13.8.10.5.10;

(Add) 13.8.10.4.3.3.5

Interlock with all stairwell pressurization, smoke exhaust and smoke control systems to control HVAC operations as required in § 13.8.10.5.10. Stairwell pressurization, smoke exhaust and smoke control systems shall not be activated by the activation of manual fire alarm boxes;

(Add) 13.8.10.4.3.3.6

Interlock with elevators to provide Phase I elevator recall and Phase II firefighters service in accordance with § 13.8.10.5.14 and 72:6.15.3; and,

(Add) 13.8.10.4.3.3.7

De-energize door holders causing all fire/smoke doors which are allowed to be held open in the entire building to close.

(Add) 13.8.10.4.3.4

All high rise fire alarm and voice communication system equipment shall comply with all applicable UL and FMG Standards. All Fire Alarm/Voice Communication Systems shall also be provided with standby amplifiers equal to the amount of amplification required for the complete system operation. A fire command center shall be provided at the main level of access to the building at a location approved by the AHJ. This fire command center shall include, but is not limited to, fire alarm and fire detection system control unit; voice communication system control units; emergency firefighter's telephone systems; status indicators and controls for air handling systems; status indicators and controls for elevators; and other systems as may be required. Means shall be provided at the fire command center to selectively manually operate the audible notification appliances on any floor. A microphone and suitable switches shall be provided at the fire command center to selectively transmit voice communications to all public areas on every floor or fire area or groups of floors or fire areas. Voice communications shall override the alarm signal. Means shall be provided at the fire command center to operate any exit or stairway door unlocking system. Two-way telephonic communication system shall be provided between the fire command center, every stairway floor landing, and each elevator lobby on every floor. In addition, a two-way fire emergency telephone shall be provided in every elevator car. Firefighters' two-way telephone system shall be individually zoned and supervised by floors and shall be selectable individually by floor or up to five (5) telephones in a group at the command center. This system shall be wired in a separate metallic raceway system from the fire alarm system wiring and shall meet the survivability requirements for fire alarm voice/communication circuits as required by NFPA 72. An individual telephone instrument shall be permanently installed at each telephone location and mounted in a lockable, red enclosure. Individual telephone annunciation shall be by telephone cradle switch. Speaker and telephone circuits shall also be supervised for short circuits. Manual fire alarm boxes shall be located at every stairwell on every floor and as indicated in § 13.8.10.4.2.5. Combination rate of rise and fixed temperature heat detectors rated at one hundred thirty-five degrees (135°) to one hundred forty degrees (140°) F. shall be located in accordance with § 13.8.10.4.2.2. Automatic one hundred ninety degrees (190°) to two hundred degrees (200°) F. fixed temperature heat detectors shall be installed in accordance with § 13.8.10.4.2.3. Smoke detectors shall be installed as required in all common corridors, all elevator machine rooms, all elevator landings,

and on the first floor, every third floor thereafter and at the top of every stairwell. Stairwell smoke detector activation shall not cause an evacuation signal to be sounded however automatic notification of the fire department shall occur. Where there is a constantly attended location within the building, an alarm signal shall be transmitted to this location whenever a stairwell smoke detector is activated. Speakers shall be provided so as to be effectively heard above all other sounds by all occupants in every occupied space on each floor or fire area. Audibility levels and voice intelligibility levels shall be as required by NFPA 72. All circuitry to all manual fire alarm boxes, automatic heat detectors, and smoke detectors, sprinkler or standpipe flow switches, all fire communication speakers, and firefighter's and emergency telephones shall be supervised. An open or ground in any of this circuitry or a failure of any essential part of the amplifier shall activate audible and visual trouble signals at the fire command center. Standby power shall be provided as prescribed in § 13.8.10.4.2.1.

(Add) 13.8.10.4.3.5

EXCEPTION: A radio repeater system compatible with the local fire department's equipment may be installed instead of a two-way telephonic communication system with the written approval of the AHJ. Any equipment installed pursuant to this section shall have its operating and/or annunciation controls located at the fire command center. Standby power shall be provided for this system capable of maintaining complete operation for sixty (60) hours.

(Add) 13.8.10.4.4 Multiplex Systems, Addressable, and Addressable-Analog Systems

(Add) 13.8.10.4.4.1

Active polling multiplex systems, addressable and addressable analog systems shall be permitted. Microprocessor, software or wiring failures shall indicate a trouble condition specific to the failure. Multiplexing of analog and digital signals shall be provided between the Central Processing Unit [CPU] and circuit interfaces. Transponders, Data Gathering Panels, Nodes, etc. shall communicate with the Central Processing Unit [CPU] via a Class "A", Style 7 Signaling Line Circuits [SLC] meeting the requirements for survivability as described in NFPA 72. The Signaling Line Circuit for all other devices shall be wired Class "A" [Style 6, NFPA 72]. Signaling Line Circuits shall be protected from wire to wire short circuit faults by the use of fault isolation modules. Fault isolation modules shall be installed on all SLCs to prevent a wire to wire short circuit fault from disabling more than twenty-five (> 25) devices on the circuit. In no case shall the length of and area disabled by a wire to wire short circuit fault exceed 200 ft. (60.96 m.) in any one direction. When a common SLC serves more than one floor of a building, fault isolation modules shall be installed to prevent a wire to wire short circuit fault on one floor from disabling the SLC on any other floor. All wiring shall be as required by the manufacturer following the color code requirements of § 13.8.10.6, and, a minimum of #16 gauge wire. All remote data gathering panels, remote fire alarm control units and devices shall derive their power from the CPU or from self-contained power supplies; the power supply shall be subject to the same primary and secondary power requirements as the main fire alarm control unit. The CPU, remote interface panels, modules, and the system devices shall be UL listed or FMG approved and cross-listed for compatibility as a system by the fire alarm control unit manufacturer. Devices using self-contained addressable modules (i.e. smoke detectors, manual fire alarm boxes, etc.) shall be UL listed or FMG approved for the desired application and shall meet all requirements of this code for such devices. Removal of any such device shall cause a trouble signal specific to the affected device and shall not affect the operation of other devices on the circuit. Devices monitored or controlled by an addressable module separate from the device shall have the location of the addressable module plainly displayed at the CPU. All addressable or addressable-analog fire alarm control units shall be programmed such that when an alarm is silenced or acknowledged, the municipal connection shall be restorable.

Add) 13.8.10.4.4.2

The time delay between the activation of any initiating device and the automatic activation of local safety devices, alarm notification appliances and/or emergency voice communications and annunciation shall not exceed ten (≤ 10) seconds. [72:6.8.1.1]

(Add) 13.8.10.5 EQUIPMENT

(Add) 13.8.10.5.1

All components of the fire alarm system including, but not limited to, the control equipment, the battery(s) and charger, the annunciator, the manual fire alarm boxes, the automatic heat detectors, the smoke detectors, the sprinkler flow switches, the extinguishing system switches, the door holders, and the alarm notification appliances shall be listed by UL or approved by FMG.

(Add) 13.8.10.5.2

Manual fire alarm boxes shall be approved for the particular application and shall be used only for alarm signaling or emergency evacuation purposes, shall be double action, color red, key locked and shall be keyed the same as the fire alarm control unit door lock. The height of the manual fire alarm boxes shall be 48 in. (1.22 m.) measured vertically, from the finished floor level to the activating handle or lever of the fire alarm box.

(Add) 13.8.10.5.2.1

EXCEPTION: Key-operated manual fire alarm boxes, lockable enclosures, break-glass enclosures or other tamper-resistant devices may be installed in place of or in addition to standard manual fire alarm boxes in areas deemed prone to false alarms, subject to the written approval of the AHJ.

(Add) 13.8.10.5.3

Alarm notification appliances shall be horns, strobes or combination horn/strobes. The horn and strobe distribution and installation shall be in accordance with NFPA 72 - Notification Appliances for Fire Alarm Systems. This strobe shall be distinctively marked "FIRE". Notification appliances shall be used for no other purpose and shall be of such character and so located as to be effectively heard above all other sounds by all occupants in every occupied space in the building. Where specified in occupancy sections of this code, bells or chimes may, with the approval of the AHJ, be used in lieu of horns providing that they are distinct from any other signal in the building. Approved speaker systems used for evacuation shall be at the same audio level for both speech information and alarm evacuation. Both speech information and alarm evacuation audible levels must be high enough to be heard above ambient room noises throughout the building. In sleeping rooms alarm sounding levels must be at least fifteen (≥ 15) dBA above average ambient room noise levels or seventy-five (75) dBA, whichever is greater, measured at the pillow level. Mini horns (or speakers, if applicable) shall be installed in all sleeping rooms, excluding healthcare occupancies and detention and correction occupancies.

EXCEPTION: Mini horns shall not be required in existing buildings if the sound levels required by 72:7.4.4.1 are met by other system audible notification appliances. Certification of sound levels shall be provided by a licensed professional engineer to the AHJ upon request.

(Add) 13.8.10.5.3.1

All audible notification appliances installed after February 20, 2004 and used for building evacuation shall be of the distinctive three-pulse temporal fire alarm evacuation signal.

EXCEPTION: This evacuation signal shall not be used where, with the approval of the AHJ, the planned action during a fire emergency is not evacuation, but rather is the relocation of occupants or their protection in place as directed by the building fire protection plan or as directed by the fire fighting personnel. [72:4.4.3.6 & 6.8.6.4.1]

(Add) 13.8.10.5.3.2

Wall-mounted visible notification appliances shall be mounted such that the entire strobe lens is not less than 80 in. (2.03 m.) and not greater than 96 in. (2.44 m.) above the finished floor. Ceiling-mounted appliances shall be permitted provided that they are listed for that application.

(Add) 13.8.10.5.3.3

The light source color shall be clear or nominal white and shall not exceed one thousand (1,000) cd (effective intensity).

(Add) 13.8.10.5.4

Heat detector and smoke detector spacing shall not exceed the linear maximum indicated for that particular device by an UL or FMG approved testing laboratory except as allowed by NFPA 72. In locations where heat detectors and/or smoke detectors are required, the type and/or temperature rating of the heat detector or smoke detector may be modified by the AHJ if, in the authority's judgment, the type or temperature setting of the unit is unsuitable due to environmental or structural conditions unique to that location.

(Add) 13.8.10.5.4.1

Where subject to mechanical damage, an initiating device shall be protected. A mechanical guard used to protect a smoke or heat detector shall be listed for use with the detector.

(Add) 13.8.10.5.4.2

Unless tested and listed for recessed mounting, detectors shall not be recessed into the mounting surface.

(Add) 13.8.10.5.4.3

Areas in buildings protected by an approved system of automatic sprinklers (NFPA 13 or 13R systems only) which is interconnected to the fire alarm system shall be exempt from the requirements for heat detectors. This exemption shall not apply to the requirements for smoke detectors.

(Add) 13.8.10.5.4.3.1

Whenever automatic sprinklers are installed above suspended ceiling assemblies as a replacement for heat detectors required by §§ 13.8.10.4.1.5.1 or 13.8.10.4.2.2.1, the requirement for separate zoning shall not be required.

(Add) 13.8.10.5.4.4

Whenever total (complete) coverage as described in **72:5.5.2.1** is required by this *Code* or any other code, protection above suspended ceiling assemblies shall be in accordance with §§ 13.8.10.4.1.5.1, 13.8.10.4.2.2.1 or 13.8.10.5.4.3.1.

(Add) 13.8.10.5.5

Waterflow switches shall be provided on all sprinkler systems and standpipes installed in all buildings required by this *Code* to have a fire alarm system. The flow switch shall activate the fire alarm system within ninety (≤ 90) seconds if any one sprinkler head activates or any standpipe is opened in accordance with **72:5.10.2**. All flow switches shall have a retard feature to prevent false alarms due to a water surge. A flow switch shall be installed in the main riser so that any flow of water in the system will activate this device. This flow switch shall be on a separate zone and will be designated "sprinkler water flow" or "sprinkler/standpipe water flow". Flow alarm switches on sprinkler systems and wet standpipe systems shall be installed so that they cannot be disconnected from the fire alarm system by the operation of a shutoff valve. Sprinklers systems shall be zoned hydraulically as per fire alarm zones with an additional flow switch connected to each fire alarm zone. An inspector's test valve shall be installed at the end of each sprinkler zone, at the furthest point away from the riser. Any alarm originating from a sprinkler head or a Class II or Class III standpipe connection²¹ shall provide two (2) separate indications on the system annunciator, one to indicate "sprinkler/standpipe" and one to indicate the activated zone. All Class II or Class III standpipe connections on each floor shall be wired with flow switches. The flow switches shall alarm the zone where the standpipe connection is located.

(Add) 13.8.10.5.5.1

EXCEPTION: Multiplex, addressable and addressable-analog fire alarm systems shall indicate the zone using the square footage of each floor protected by the automatic sprinkler zone as allowed in NFPA 13 - 2002 edition.

(Add) 13.8.10.5.5.2

Whenever any automatic sprinkler waterflow alarm is required by this *Code* or any other code²² to notify the fire department, the requirements of § 13.8.10.7 shall apply.

²¹ NFPA 14:3.3.27

²² 1:13.3.1.7.3 / 101:9.7.2.2

(Add) 13.8.10.5.6

Valves on connections to water supplies, sectional control and isolation valves, and other valves in supply pipes to sprinklers and other fixed water-based fire suppression systems shall be supervised by tamper switches. The tamper switch shall activate the fire alarm system sprinkler supervisory signal any time the valve is in an "off-normal" condition and the water supply is shut off or interrupted in accordance with NFPA 13 and 72:6.8.5.7. An alarm condition shall not occur unless specifically requested and authorized by the AHJ.

(Add) 13.8.10.5.7

An alarm-initiating switch shall be provided on all required manual or automatic extinguishing systems, in addition to sprinkler systems, in buildings required by this code to have a fire alarm system. This switch shall activate the building's fire alarm system any time the extinguishing system is activated and shall be on a separate zone.

(Add) 13.8.10.5.8

A building having a required fire alarm system, which is more than 20,000 ft² (1,858.06 m²) in total area or which extends to more than one floor, shall have a fire alarm annunciator to visually indicate the location of an alarm within the building located inside the main entrance of the building or in a location as approved by the AHJ. Each floor shall be separately zoned. If a floor area exceeds 20,000 ft² (1,858.06 m²), additional zoning shall be provided. In no case shall the length of any zone exceed 200 ft. (60.96 m.) in any direction. Fire alarm annunciator visible indicators can not be extinguished until the system is reset. Other identifying devices such as a computer printout are acceptable in lieu of an annunciator, subject to approval of the AHJ. A directory or zone map as required by the AHJ shall be provided for every zoned fire alarm system. Fire alarm annunciator location shall meet the requirements of the AHJ. If the fire alarm annunciator is a remote fire alarm control unit, it shall be key-locked and contain all system functions including a trouble light and audible trouble signal with silence switch, system reset, and system silence with resound and cover all required zones. Annunciation of alarm and trouble indications will be accomplished with the use of separate zone wiring and not with the use of multiple contact initiating devices. The fire alarm annunciation shall be by floors or locations and not by a zone number only. In the event that a building has a fire pump(s) or emergency generator(s), provisions shall be made at the fire alarm control unit and/or fire alarm annunciator for visible/audible indication of generator or fire pump operation. Activation of a fire pump or generator shall not cause an alarm condition or notify the fire department. Power-off switches for any required generator or fire pump shall be monitored at the fire alarm control unit, fire alarm annunciator and at a constantly attended location within the building, if so provided.

(Add) 13.8.10.5.8.1

In complexes consisting of multiple building clusters, a common municipal fire department connection may, at the discretion of the AHJ, be used providing a system-powered one million (1,000,000) candle power strobe light shall be installed on each building so as to be visible at the master box or a central location.

(Add) 13.8.10.5.9

All required fire alarm systems shall be connected to an approved power source in the building and in addition shall have automatically charged storage type battery standby power (dry cell shall not be used) of sufficient capacity to operate the entire system as required by § 13.8.10.4 for the type of system after the principal source of power has failed. The fire alarm system must be able to function and sound the notification appliances for at least five (≥ 5) minutes following the required standby period.

(Add) 13.8.10.5.9.1

Systems utilizing an emergency generator as a source of standby power shall not be exempt from the above requirements for battery standby power.

(Add) 13.8.10.5.10

In all buildings having a fire alarm system, the fire alarm system shall be interconnected to the building's heating, ventilation and air conditioning [HVAC] line voltage controls so that the fan(s) supplying 2,000 ft³/min. [cfm] (56.63 m³/min.) or greater capacity of any ventilating system not used for pressurization of a fire safe area or four or more (≥ 4) ceiling mounted industrial air circulation fans installed in one room shall automatically shut down any time, other than drills or when testing, that any initiating device connected to the fire alarm system is activated. If duct-type smoke detectors are installed in HVAC systems, the duct-type smoke detectors shall be connected to the fire alarm control unit to signal an audible and visual supervisory signal at the fire alarm control unit and annunciator. An alarm condition shall not occur unless specifically requested and authorized by the AHJ.

(Add) 13.8.10.5.10.1

EXCEPTION: Where total coverage smoke detection is installed in all areas of the smoke compartment served by the return air system, installation of air duct detectors in the return air system shall not be required, provided their function is accomplished by the design of the area detection system.

(Add) 13.8.10.5.10.2

Where installation of automatic smoke area detection is impractical due to ambient conditions, automatic heat detection shall be permitted. In areas covered by automatic sprinkler systems, automatic heat detection shall not be required.

(Add) 13.8.10.5.10.3

EXCEPTION: See § 13.8.10.4.3.3.5.

(Add) 13.8.10.5.10.4

A manual override for the HVAC, stairwell pressurization, smoke venting and smoke control systems control feature shall be provided in the fire alarm control unit for drills and testing of the fire alarm system.

(Add) 13.8.10.5.11

All required smoke and fire doors in all buildings required by this code to have a fire alarm system may be held open only if equipped with magnetic or electro-mechanical door holders installed so as to automatically close the doors anytime the alarm system within the building is activated. System smoke detectors connected to the alarm system within the building shall be installed proximate to every smoke and fire door that is held open, in accordance with 72:5.14.6.

(Add) 13.8.10.5.12

All buildings that have a fire alarm system required by this Code that require fire drills to be held shall have a key operated drill switch to activate the notification appliances in the building, installed at a remote location outside of the fire alarm control unit, subject to the approval of the AHJ. The drill switch key shall not be the same as the fire alarm control unit key.

(Add) 13.8.10.5.13

All spaces where fire alarm control units or remote fire alarm control unit equipment (such as auxiliary power supplies, remote annunciators or SNAC units) are located shall be protected with a smoke detector(s) spaced in accordance with NFPA 72 - Initiating Devices.

(Add) 13.8.10.5.14

All new elevators and all existing fully automatic elevators shall be equipped with Phase I elevator recall and Phase II firefighter's service in accordance with 72:6.15.3. Elevators shall be recalled to floors or areas as designated by the AHJ on any alarm. In the event that the primary designated level is the zone or area in alarm, the elevators shall return to an approved alternate level where they shall be under the exclusive control of the fire department for the duration of the alarm condition.

(Add) 13.8.10.5.14.1

These requirements shall not apply to elevators located in private one- and two-family dwellings or three-family apartment buildings.

(Add) 13.8.10.5.15

In all building covered by this chapter having an elevator(s), required sprinkler coverage by this or any other code of any elevator machine room and any elevator hoistway shall not be deleted unless approved by the State Fire Marshal. Any deleted sprinklers shall be replaced with combination rate of rise and fixed temperature heat detectors rated at one hundred thirty-five degrees (135°) to one hundred forty degrees (140°) F. in the hoistway and smoke detectors in the machine room, installed at the direction and to the satisfaction of the AHJ.

(Add) 13.8.10.5.16

All fire alarm control units installed pursuant to §§ 13.8.10.4.2, 13.8.10.4.3 or 13.10.4.4 shall be configured or programmed such that when an alarm is silenced or acknowledged, the municipal connection shall be restorable. This feature shall not require any password, code or other programming operations by fire department personnel in charge of the scene to operate, reset or disconnect the fire alarm system.

(Add) 13.8.10.6 INSTALLATION AND WIRING

(Add) 13.8.10.6.1

All fire alarm system wiring within a building and between buildings in multiple building clusters shall be installed in metal raceway with steel couplings and box connectors or type MC cable rated as FPL and 2-hour fire rated for penetrations by UL. Cast "LB" or "T" type connectors shall be permitted. An equipment-bonding conductor shall be provided in all flexible metallic raceways.

(Add) 13.8.10.6.1.1

EXCEPTION: Wiring between buildings may be buried if enclosed in PVC conduit using approved IMSA shielded cables, or installed either using approved direct burial type MC cable, or run aerial with approved IMSA shielded cable(s) subject to approval by the AHJ.

(Add) 13.8.10.6.2

Wiring installation shall meet the following requirements:

(Add) 13.8.10.6.2.1

All conductors shall be minimum #16 gauge solid copper, type thhn, thwn or tfn. All wiring shall be run continuously from device to device. With the approval of the AHJ, junction points may be made due to construction hardships where a continuous run would be impractical or when one of the exceptions to 72:6.4.2.2.2 applies, provided the requirements of § 13.8.10.6.5.1 are met.

(Add) 13.8.10.6.2.2

The minimum separation between the outgoing and return circuits shall be a minimum of 1 ft. (0.30 m.) vertically and 4 ft. (1.22 m.) horizontally in accordance with the provisions of 72:6.4.2.2.2.

Exception: This requirement shall not apply to underground installations or those installations imbedded in slab construction.

(Add) 13.8.10.6.2.3

A cable-cutting tool with controlled depth of cut shall be used in all MC cable installations.

(Add) 13.8.10.6.2.4

UL listed type MC cable connectors with insulated bushings and screw type cable attachments shall be used in all MC cable installations. Connectors shall be made of steel, not the cast type.

(Add) 13.8.10.6.2.5

Conductor size shall be increased as required so as to limit voltage drop to a maximum of three percent (3%).

(Add) 13.8.10.6.2.6

All initiating devices and notification appliances shall be supported independently of their attachment to the circuit conductors.

(Add) 13.8.10.6.3

The color code for all fire alarm system conductors shall be as follows:

(Add) 13.8.10.6.3.1

INITIATING DEVICE CIRCUIT shall be red and black. Red shall be positive and black shall be negative [IDC/SLC].

(Add) 13.8.10.6.3.2

NOTIFICATION APPLIANCE CIRCUIT shall be blue and white. Blue shall be positive and white shall be negative. When bells, chimes or other audible/visual devices are used in lieu of horns, this color code shall be followed [NAC].

(Add) 13.8.10.6.3.3

FLASHING STROBE CIRCUIT, if a separate feed is required, shall be blue and white. Blue shall be positive and white shall be negative.

(Add) 13.8.10.6.3.4

SPRINKLER/STANDPIPE CIRCUITS shall be red and black. Red shall be positive and black shall be negative.

(Add) 13.8.10.6.3.5

SMOKE DETECTOR CIRCUITS, if a separate power feed is required, shall be brown and violet. Violet shall be positive and brown shall be negative.

(Add) 13.8.10.6.3.6

AUXILIARY REMOTE POWER SUPPLY CIRCUITS shall be brown and violet. Violet shall be positive and brown shall be negative.

(Add) 13.8.10.6.3.7

ELECTRO-MAGNETIC DOOR HOLDBACK CIRCUITS shall be gray and gray.

(Add) 13.8.10.6.3.8

MUNICIPAL MASTER BOX TRIPPING CIRCUITS shall be orange and orange. Conductors for this circuit shall be installed in a separate raceway.

(Add) 13.8.10.6.3.9

ELEVATOR CAPTURE CIRCUITS shall be brown and yellow.

(Add) 13.8.10.6.3.10

HVAC SHUTDOWN CIRCUITS and AUDIO/VISUAL SYSTEMS SHUTDOWN CIRCUITS shall be orange and yellow.

(Add) 13.8.10.6.3.11

REMOTE ANNUNCIATOR CIRCUITS shall be violet and numbered at each end.

(Add) 13.8.10.6.3.12

BOND WIRES from the control panel to the master box ground rod, and all required bonding conductors shall be green or bare.

(Add) 13.8.10.6.3.13

MUNICIPAL FIRE ALARM LOOP from the master box to the municipal loop shall be black and white.

(Add) 13.8.10.6.3.14

AC SUPPLY CIRCUIT to the main fire alarm control unit shall be white, black and red. The black shall be one phase, and the red shall be the opposite phase, if required. The white shall be the neutral. If a separate feed is required for the battery charger, it shall be black and white unless the main fire alarm control unit requires only one AC feed. In that case, the conductors to the battery charger shall be red and white.

(Add) 13.8.10.6.4

Primary AC power and/or battery charger circuits shall be on a dedicated branch circuit(s). Circuit breaker locks shall be provided and listed for use with the applicable circuit breaker. The location of the circuit disconnecting means shall be permanently identified at the fire alarm control unit. AC and DC portions of the system shall be installed in separate raceways. [72:4.4.1]

(Add) 13.8.10.6.5

Any fire alarm wiring between the fire alarm control unit and remote terminal cabinets or between remote terminal cabinets may, at the option of the installer, be a multi-conductor cable with each conductor numbered at 2 in. (0.05 m.) intervals. All wiring from a terminal cabinet(s) to an alarm device(s) shall conform to the color code specified before herein.

(Add) 13.8.10.6.5.1

Terminal cabinets with hinged, lockable red covers shall be provided at all junction points. All conductor splices or terminations shall be made on screw-type terminal blocks - wire nuts, butt or crimp type connectors shall not be used. All terminals within a terminal cabinet shall be properly identified.

EXCEPTION: Crimp-type connectors may be used on bonding conductors.

(Add) 13.8.10.6.6

Spacing and location of heat detectors or smoke detectors required by this Code shall be in accordance with NFPA 72.

(Add) 13.8.10.6.7

Smoke detectors shall not be installed until after the construction clean-up of all trades is complete and final. Detectors that have been installed prior to final cleanup by all trades shall be cleaned or replaced per NFPA 72 - Inspection, Testing and Maintenance. [72:5.7.1.11]

(Add) 13.8.10.7 CONNECTION TO FIRE DEPARTMENT

(Add) 13.8.10.7.1

Where a municipally connected fire alarm system required by this *Code* is installed in a building in a city, town, or fire district having a municipal alarm system, the fire alarm system within the building shall be connected into the municipal system via a local energy master box, auxiliary transmitter, radio master box, or other approved method so that any fire alarm within the building will be automatically transmitted to the community's public fire service communications center.

(Add) 13.8.10.7.2

In jurisdictions capable of receiving multiple-zone signaling by way of radio master boxes, digital receivers or other approved methods, signaling shall be provided as required by the AHJ.

(Add) 13.8.10.7.2.1

EXCEPTION: Existing compliant fire alarm control units not capable of providing multiple zone signaling shall not be required to meet this requirement.

(Add) 13.8.10.7.2.2

In no case shall more than one (1) master box or transmitter be required unless the total area protected exceeds 100,000 ft² (9,290.3 m²).

(Add) 13.8.10.7.3

Systems installed in buildings in a city, town, or fire district not having a municipal alarm system shall be connected to the community public fire service communications center via a supervised leased telephone line (or other line) but shall not be connected to any service requiring retransmission to the community public fire service communications center.

(Add) 13.8.10.7.4

In either event, the AHJ shall be consulted as to the type and location of the master box or auxiliary transmitter or the location of the remote station.

(Add) 13.8.10.8 SYSTEM ACCEPTANCE

(Add) 13.8.10.8.1

A pretest will be held with the installer and the manufacturer's technical representative present. In addition to the requirements listed below, the pretest shall demonstrate that each smoke detector is operative and produces the intended response. Each smoke detector shall be tested with smoke generated from a wick/punk source or in accordance with the manufacturer's recommendations to initiate an alarm at its installed location. After certification of a complete pretest, the installing contractor shall provide the AHJ with written documentation from the manufacturer's authorized representative of the outcome of the test and provide a minimum of forty-eight (≥ 48) hours' notice to the AHJ for the final inspection test. The installing contractor will re-inspect in the presence of the AHJ and the manufacturer's authorized technical representative. A complete test shall be conducted as follows: the installing contractor, in the presence of a representative of the AHJ, shall manually operate every manual fire alarm box, activate every rate of rise type heat detector and rate anticipation heat detector with heat, manually operate or electrically short out every non-restorable fixed temperature heat detector, activate every smoke detector with smoke generated from a wick/punk source or in accordance with the manufacturer's recommendations to demonstrate that smoke can enter the chamber and initiate an alarm, activate all automatic extinguishing system switches and activate every water sprinkler/standpipe flow switch by a flow of water through the inspectors' test valves. In addition, all protected sprinkler/standpipe valves shall be mechanically operated to verify the supervisory features of the tamper switches. All notification appliances shall be verified as operation at the time of this test.

(Add) 13.8.10.8.2

After installation and before the system acceptance test is performed, a copy of the testing and maintenance contract required by § 13.8.10.9.2 shall be furnished to the AHJ by the fire alarm system owner²³ or contractor. The contractor shall prepare and submit a single line diagram of each installation, as built, indicating wiring between equipment and locations of control units, manual fire alarm boxes, detectors, and other devices to the AHJ.

(Add) 13.8.10.8.3

Each manual fire alarm box, heat detector, smoke detector, extinguishing system switching circuits, flow switch circuit and each notification appliance circuit shall be opened in at least two locations to test for the correctness of the supervisory circuitry. All communications shall be tested completely. The fire alarm system shall be in accordance with this chapter and in one hundred percent (100 %) operation prior to acceptance and/or issuance of a certificate of occupancy.

²³ See 72:3.3.124 / A.3.3.124

(Add) 13.8.10.8.4

The fire alarm system may be placed in operation prior to final acceptance if in the opinion of the AHJ, it will enhance public safety or provide property protection during the final phases of construction. In this case all devices will be thoroughly cleaned or replaced prior to the system acceptance test. The system will not be placed in operation without the written permission of the AHJ. Under no circumstances will this be considered a final acceptance test.

(Add) 13.8.10.8.5

Prior to the final operational acceptance test, a Fire Alarm System Record of Completion in accordance with 72:4.5.2.1 shall be prepared and submitted to the fire alarm system owner and the AHJ.

(Add) 13.8.10.9 MAINTENANCE OF THE SYSTEM

(Add) 13.8.10.9.1

Owners of fire alarm systems shall ensure that the systems and all of their components are in one hundred percent (100%) operating condition at all times other than fire drills, testing & maintenance of the system.

EXCEPTION: With the written approval of, and subject to any additional safeguards mandated by the AHJ, fire alarms systems, or portions thereof may be temporarily disabled for events or other occasions where environmental, mechanical or human factors would lead to unnecessary nuisance, accidental or intentional false alarms.

(Add) 13.8.10.9.1.1

The fire alarm system owner shall provide a twenty-four (24) hour emergency telephone number of the owner or owner's representative for the fire department to call in the event of an alarm or trouble condition. This telephone number shall be conspicuously posted at the fire alarm control unit. In lieu of the owner's number, the twenty-four (24) hour emergency telephone number of the maintenance company authorized by the owner to respond to service the system may be provided.

(Add) 13.8.10.9.1.2

Answering machines or voice-mail are not acceptable methods for contacting the owner or authorized testing and maintenance company.

(Add) 13.8.10.9.2

Owners of fire alarm systems shall provide written evidence to the AHJ that there is a testing and maintenance program²⁴ in force for the fire alarm system providing for periodic testing of the system. A local system as described in § 13.8.10.4.1 with twenty-four or fewer (≤ 24) initiating devices shall be tested at least once every six (6) months with fifty percent (50 %) of all manual fire alarm boxes, heat detectors, smoke detectors and other devices and components operated with each test. A different fifty percent (50 %) of the above-mentioned devices will be operated at each inspection so that the entire system will have been tested at the end of each year. All other systems shall be tested at least once every three (3) months with twenty-five percent (25 %) of all manual fire alarm boxes, heat detectors, smoke detectors and other devices and components operated with each test. A different twenty-five percent (25 %) of the above-mentioned devices will be operated at each inspection so that the entire system will have been tested at the end of each year. In addition to the initiating devices to be tested above, during each test, the fire alarm control unit, all notification appliance circuits and every zone shall be tested.

²⁴ Holders of C or D Certificates issued pursuant to RIGL §§ 5-6-10 or 5-6-10.1 shall provide written evidence of an internal testing and maintenance program.

(Add) 13.8.10.9.2.1

In addition to the testing and maintenance requirements set forth above, an annual certification shall be provided to the AHJ that all system smoke detectors located within the protected premises have been externally cleaned at least once every twelve (12) month period. In residential occupancies²⁵ having single- or multiple-station local smoke alarms, these devices shall be tested and cleaned at least once per year.

(Add) 13.8.10.9.2.2

EXCEPTION: A local system as described in § 13.8.10.4.1 with twenty-four or fewer (\leq 24) initiating devices may be tested quarterly, as described in § 13.8.10.9.2, at the option of the fire alarm system owner.

(Add) 13.8.10.9.3

The person(s) and firm performing any testing and/or maintenance required by this *Code* shall be licensed as required by R.I.G.L., 1956, as amended, § 5-6-2²⁶.

(Add) 13.8.10.9.3.1

This licensing requirement shall not apply to fire department personnel in charge of the scene to operate, reset or disconnect the fire alarm system as authorized by the AHJ.

(Add) 13.8.10.9.3.2

Nothing in this section shall be construed so as to prevent any licensed²⁷ person or firm from flowing water in a standpipe/automatic sprinkler system at the inspectors' test valve during periodic testing, however an electrical "B" or "BF" license is required for any access to any wiring, device or the fire alarm control unit.

(Add) 13.8.10.9.4

The AHJ shall be notified a minimum of forty-eight (\geq 48) hours prior to conducting any tests.

(Add) 13.8.10.9.5

Certification of these tests and results shall be forwarded to the AHJ and the fire alarm system owner from the person(s) or firm performing the test within ten (10) days of the completion of the test. The person(s) or firm performing the testing and maintenance of the fire alarm system shall notify the AHJ within five (5) days, in writing, after any cancellation of a testing/maintenance agreement with the fire alarm system owner.

²⁵ This testing requirement does not apply to one- and two-family dwellings or three-family apartment buildings.

²⁶ ELECTRICIANS: Work for which a license is required.

²⁷ RIGL § 28-27-5.1

(Add) 13.8.10.9.5.1

Certification of any periodic testing required by the Code shall be on a standardized inspection form approved by the State Fire Marshal and adopted by the Fire Safety Code Board of Appeal and Review. This form shall be utilized by all persons and firms performing fire alarm testing and inspections pursuant to this Code and shall bear the name and license number of the licensed person performing the test.

(Add) 13.8.10.9.5.2

In addition, the person(s) or firm performing the test shall conspicuously indicate that the fire alarm system providing protection at the protected premises was in 100% operating condition upon completion of the most recent test and that the testing complied with all requirements of § 13.8.10.9. A document attesting to this certification shall be located on or within 36 in. (0.91 m.) of the fire alarm control unit [FACU] or remote annunciator if the FACU is not in a public area, following each required test. If the FACU is not in a public area and the remote annunciator is located on the outside of the building, the AHJ shall be consulted as to the location of the posting of the certification.

(Add) 13.8.10.9.5.3

If any impairment(s) is discovered during a routine test or inspection and it cannot be corrected within four (≤ 4) hours, the AHJ shall be notified, who may invoke the provisions of § 13.1.9 if he or she deems the impairment(s) to jeopardize the safety of the building occupants.

See also 72:4.6 and 72:10.2.1.2.

=====END OF CHAPTER=====