# CITY OF TEMPE AMENDMENTS TO THE 2006 INTERNATIONAL FIRE CODE TEMPE CITY CODE, CHAPTER 14, ARTICLE II, SECTION 14-41

#### Sec. 105. Permits.

Section 105.1.1 is hereby amended as follows:

105.1.1. Permits required. The fire code official may require permits as provided for in Section 105. Permit fees, if any, shall be paid prior to issuance of the permit. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the fire code official.

Section 105.2.3 is hereby amended as follows:

105.2.3. Time limitation of application. An application for a permit for any purposed work or operation shall be deemed to a have been abandoned one year after the date of filing. The fire code official is not authorized to grant any extension of time.

## **EXCEPTIONS:**

- 1. Prior to the date of expiration of any application that has not been approved for the issuance of permits, an applicant may submit a written request for one time extension of a ninety (90) days. The request must explain the justifiable cause for the delay and include a proposed plan submittal schedule for completion of the plan review process. If the request for extension is approved, the applicant must submit a new project submittal application form along with a renewal fee equal to thirty-five percent (35%) of the original calculated fire permit fee. The renewal fee must be paid no later than thirty (30) business days after the original expiration date or the original application shall expire. Additionally, all permits must be issued and permit fees paid prior to the end of the ninety (90) day extension date.
- 2. Prior to the date of expiration of any application that has been approved for the issuance of permits, but for which a permit has not been issued, the applicant may request a one time extension of one-hundred eighty (180) days. The request must explain the justifiable cause for the delay. If the request for extension is approved, the applicant must submit a new project submittal application along with a renewal fee equal to ten percent (10%) of the original calculated fire permit fee. The renewal fee must be paid no later than thirty (30) business days after the original expiration date or the original application shall expire. Additionally, all permits must be issued and permit fees paid prior to the end of the one-hundred eighty (180) day extension date.

(FPN): Exceptions one and two above may not be combined.

## Sec. 108. Board of appeals.

Section 108 is hereby repealed.

#### Sec. 109. Violations.

Section 109.3 is hereby amended as follows:

109.3. Violation penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a class 1 misdemeanor punishable by a fine of not more than two thousand five hundred dollars (\$2,500.00) or by imprisonment not exceeding ninety (90) days or both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

## Sec. 111. Stop work order.

Section 111.4 is hereby amended as follows:

111.4. Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to the violation penalties specified in Section 109.3.

#### Sec. 202. General definitions.

Section 202 is hereby amended as follows:

FIREFIGHTER BREATHING AIR SYSTEM. A firefighter breathing air system is a complete, self-contained high pressure breathing air replenishment system consisting of a fire department air connection panel, remote air fill panels and high pressure interconnected piping, permanently installed within a structure which allows fire department personnel to replenish empty self-contained breathing apparatus cylinders at, or within close proximity to, the location of an emergency incident, thus reducing the amount of travel distance, time and support personnel needed at the location.

OCCUPANCY CLASSIFICATION, Factory Industrial F-1 Moderate-Hazard Occupancy is hereby amended as follows:

Woodworking (cabinet) (establishments with more than three (3) woodworking appliances.)

OCCUPANCY CLASSIFICATION, Group I-1 is hereby amended as follows:

Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than ten (10) persons, on a twenty-four (24) hour basis, who because of age, mental disability or other reasons, live in a residential environment that provides personal care and/or supervisory care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

Residential board and care facilities
Assisted living centers
Halfway houses
Group homes
Congregate care facilities
Social rehabilitation facilities
Alcohol and Drug abuse treatment centers
Convalescent facilities

A facility such as the above with five (5) or fewer persons, excluding staff, shall be classified as Group R-3 and shall comply with the International Residential Code in accordance with Section 101.2. A facility such as the above housing at least six (6) but not more than ten (10) persons, excluding staff, shall be classified as a Group R-4.

## OCCUPANCY CLASSIFICATION, Group I-2 is hereby amended as follows:

*Group I-2.* This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing, custodial, personal, or directed care on a twenty-four (24) hour basis of persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

Hospitals

Nursing homes (both intermediate-care facilities and skilled nursing facilities)

Mental hospitals (where patients are not restrained)

Detoxification facilities

OCCUPANCY CLASSIFICATION, Residential Group R is hereby amended as follows:

R-1 Residential occupancies where the occupants are primarily transient in nature, including:

Boarding houses

Hotels

Motels

R-2 Residential occupancies containing sleeping units or more than two (2) dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses

Convents

**Dormitories** 

Fraternities and sororities

Monasteries

Vacation timeshare properties

Fraternity and sorority houses are any building used in whole or in part as a dwelling and occupied by and maintained exclusively or primarily for college, university or professional school students who are affiliated with a social, honorary or professional organization recognized currently or in the past by a college, university or professional school.

*R-3* Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I and where buildings do not contain more than two (2) dwelling units, or adult care and child care facilities that provide accommodation for five (5) or fewer persons, excluding staff, of any age. Adult care and child care facilities that are within a single-family home are permitted to comply with the International Residential Code.

R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including at least six (6) but not more than ten (10) occupants, excluding staff.

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

PERSONAL CARE SERVICE. The care of residents who do not require chronic or convalescent medical or nursing care. Personal care involves assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services, the administration of medications and treatments, and responsibility for the safety of the residents while inside the building.

RESIDENTIAL CARE/ASSISTED LIVING FACILITY. A building or part thereof housing at least six (6) but not more than ten (10) persons, excluding staff, on a twenty-four (24) hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides supervisory and/or personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living homes, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse treatment centers and convalescent facilities.

SUPERVISORY CARE SERVICE. General supervision, including daily awareness of resident functioning and continuing needs.

## Sec. 308. Open flames.

Section 308.3.1 is hereby amended as follows:

308.3.1. Open-flame cooking devices. Charcoal burners and other open-flame devices shall not be operated on balconies/patios or within ten (10) feet (3048 mm) of combustible construction in Group R-1 or R-2 occupancies.

Section 308.3.1.1 is hereby amended as follows:

308.3.1.1. Liquefied-petroleum-gas-fueled cooking devices. LP-gas burners having an LP-gas container with a water capacity greater than two and one-half (2.5) pounds [nominal 1 pound (0.454 kg) LP-gas capacity] shall not be operated on balconies/patios or within ten (10) feet (3048 mm) of combustible construction in Group R-1 or R-2 occupancies.

#### Sec. 505. Premises identification.

Section 505.1 is hereby amended as follows:

505.1. Address numbers. Approved numbers or addresses shall be provided for new and existing buildings in accordance with the Tempe Administrative Code.

## Sec. 803. Interior wall and ceiling finish and trim in existing buildings.

Section 803.4 is amended as follows:

803.4. Fire-retardant coatings. The required flame spread or smoke-developed classification of surfaces shall be permitted to be achieved by application of approved fire-retardant coatings, paints or solutions to surfaces having a flame spread rating exceeding that permitted. Such applications shall comply with NFPA 703 and the required fire-retardant properties shall be maintained or renewed in accordance with the manufacturer's instructions. Fire retardant coatings, paints or solutions shall be applied by personnel approved by the fire code official.

#### Sec. 901. General.

Section 901.6 is hereby amended as follows:

901.6. Inspection, testing and maintenance. Fire detection, alarm, firefighter breathing air and extinguishing systems shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective. Non-required fire protection systems and equipment shall be inspected, tested and maintained or removed.

# Sec. 903. Automatic sprinkler systems.

Section 903.2 is hereby repealed and new Section 903.2 is hereby adopted as follows:

- 903.2. Where required. Approved automatic sprinkler systems shall be provided in the locations described in this section.
- 903.2.1. New buildings or structures. All areas of new buildings or structures, and other locations required by this Chapter, shall be provided with an automatic fire sprinkler system complying with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 as applicable.

EXCEPTIONS: Unless the use of the facility otherwise requires automatic fire sprinkler protection, fire sprinkler systems shall not be required for the following:

- 1. R-3 occupancies of five thousand (5,000) square feet or less and other buildings or structures accessory to R-3 occupancies.
- 2. Detached non-combustible carports of five thousand (5,000) square feet or less in roof area.
- 3. Detached non-residential buildings of one thousand (1,000) square feet or less in floor area.
- 4. Detached non-combustible canopies less than five thousand (5,000) square feet in roof area used exclusively for vehicle washing facilities or vehicle fuel dispensing stations.
- 5. Shade canopies less than five thousand (5,000) square feet; not closer than five (5) feet to any building, property line or other shade canopy; and shading one of the following: vehicles for sale at a dealership, playground equipment, or outdoor eating areas without cooking.
- 6. Shipping containers used for storage purposes and not closer than five (5) feet to any building, property line or other container.
- 7. Exterior roofs, overhangs or canopies of Type I, II or III construction with no combustible storage beneath.
- 8. Exterior covered/enclosed walkways of Type I, II or III construction with enclosing walls that are at least fifty percent (50%) open.

This section is not intended to indicate all instances or circumstances where fire sprinkler systems are required; refer to this chapter and the Tempe Fire Code for other requirements.

Section 903.2.2. Group H-5 occupancies. An automatic sprinkler system shall be installed throughout buildings containing Group H-5 occupancies. The design of the sprinkler system shall not be less than that required by this code for the occupancy hazard classifications in accordance with Table 903.2.2. Where the design area of the sprinkler system consists of a corridor protected by one row of sprinklers, the maximum number of sprinklers required to be calculated is 13.

TABLE 903.2.2 GROUP H-5 SPRINKLER DESIGN CRITERIA

Location	Occupancy Hazard Classification
Fabrication areas	Ordinary Hazard Group 2
Service corridors	Ordinary Hazard Group 2
Storage rooms without dispensing	Ordinary Hazard Group 2
Storage rooms with dispensing	Extra Hazard Group 2
Corridors	Ordinary Hazard Group 2

- 903.2.3. Change of occupancy. An automatic sprinkler system complying with Section 903.3 shall be provided for an existing building or portion thereof undergoing a change of occupancy as follows, based upon the relative hazard levels indicated in Table 903.2.3:
  - 1. When a change of occupancy is made to a higher level as shown in Table 903.2.3, the area or building shall be provided with an automatic fire sprinkler system.
  - 2. When a change of occupancy is made within hazard level 1 as shown in Table 903.2.3, the area or building shall be provided with an automatic fire sprinkler system.
  - 3. Any change of occupancy of a building or area of more than five thousand (5,000) square feet shall be retrofit with a fire sprinkler system.

TABLE 903.2.3 EXISTING BUILDING HAZARD LEVELS

Hazard Level	<b>Building Occupancy Type</b>
1 (highest)	H, I, R-1, R-2, R-4
2	A-2, A-5
3	A-1, A-3, A-4
4	E, F-1, M, S-1
5 (lowest)	B, F-2, S-2, U, R-3

Notes: Occupancies are as defined in this code.

When a change of occupancy of five thousand (5,000) square feet or less is made to a lower hazard level or within a hazard level (except hazard level 1), as shown in Table 903.2.3, the building is not required to be provided with an automatic fire sprinkler system.

903.2.4. Additions. All additions to existing buildings or structures and all buildings or structures that are expanded by an addition(s) shall be provided with an automatic fire protection system complying with Section 903.3 as applicable.

EXCEPTION: An existing non-sprinklered building or structure and additions to such existing building, provided the occupancy of the existing building is not changed, the addition is the same occupancy, and the total area of all such additions to the building do not exceed one thousand (1,000) square feet.

The above exception does not supersede other requirements of the Tempe Fire Code.

Section 903.2.5. Rubbish and linen chutes. An automatic sprinkler system shall be installed at the top of rubbish and linen chutes and in their terminal rooms. Chutes extending through three (3) or more floors shall have additional sprinkler heads installed within such chutes at alternate floors. Chute sprinklers shall be accessible for servicing.

- 903.2.6. During construction. Automatic sprinkler systems required during construction, alteration and demolition operations shall be provided in accordance with the Tempe Fire Code.
- 903.2.7. Ducts conveying hazardous exhausts. Where required by the Tempe Mechanical Code, automatic sprinklers shall be provided in ducts conveying hazardous exhaust, or flammable or combustible materials.

EXCEPTION: Ducts in which the largest cross-sectional diameter of the duct is less than ten (10) inches (254 mm).

- 903.2.8. Commercial cooking operations. An automatic sprinkler system shall be installed in commercial kitchen exhaust hood and duct system where an automatic sprinkler system is used to comply with Section 904.
- 903.2.9. Other required suppression systems. In addition to the requirements of Section 903.2, the provisions indicated in Table 903.2.13 also require the installation of a suppression system for certain buildings and areas
- 903.2.10. New buildings with unknown occupancy type or hazard classification. In new buildings constructed with an interior ceiling/deck height exceeding twenty (20) feet and the occupancy or hazard classification is unknown, the minimum fire sprinkler design criteria shall be .495/2000 sq. ft.

Section 903.3.1.2 is hereby amended as follows:

903.3.1.2. NFPA 13R sprinkler systems. Where allowed in multi-family buildings, and Group R, Division 4 occupancies, automatic sprinkler systems shall be installed throughout in accordance with NFPA 13R, provided there are no deletions of sprinklers in attics, bathrooms, closets (including those containing mechanical or electrical equipment), foyers, garages, carports, accessible areas under interior stairs and landings used for storage or living purposes.

Section 903.3.1.3 is hereby amended as follows:

903.3.1.3. NFPA 13D sprinkler systems. Where allowed, automatic sprinkler systems in one- and two- family dwellings shall be installed throughout in accordance with NFPA 13D, provided there are no deletions of sprinklers in attics, bathrooms, closets (including those containing mechanical or electrical equipment), foyers, garages, carports, accessible areas under interior stairs and landings used for storage or living purposes.

Section 903.3.6 is hereby amended as follows:

903.3.6. Hose threads. Fire hose threads used in connection with automatic sprinkler systems shall be approved and compatible with the Tempe Fire Department hose threads.

Section 903.3.7 is hereby amended as follows:

903.3.7. Fire department connections. The location of fire department connections shall be approved by the Tempe Fire Marshal's authorized representative.

# Sec. 906. Portable fire extinguishers.

Section 906.1 is hereby amended as follows:

906.1. Where required. Portable fire extinguishers shall be installed in the following locations:

1. In all Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies.

EXCEPTION: In all Group A, B and E occupancies equipped throughout with quick-response sprinklers, fire extinguishers shall be required only in special-hazard areas.

- 2. Within thirty (30) feet (9144 mm) of commercial cooking equipment.
- 3. In areas where flammable or combustible liquids are stored, used or dispensed.
- 4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 1415.1.
- 5. Where required by the sections indicated in Table 906.1.
- 6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.
- 7. In Group R-2 occupancies, portable fire extinguishers may be installed in individual dwelling units.

## Section 907. Fire alarm and detection systems.

Section 907.2.10.1.2 is hereby repealed.

Section 907.2.10.1.2.1 is hereby added as follows:

907.2.10.1.2.1. Installation and maintenance. Approved single-station smoke detectors shall be installed in existing dwelling units, congregate residences, and hotel and lodging house guest rooms.

Smoke detectors shall be installed in all existing non-owner-occupied dwellings, dwelling units and in all apartment houses. The owner shall be responsible for the installation, replacing the battery annually (if battery operated), and maintaining appropriate records of required smoke detectors. Upon termination of a tenancy in any rental unit, the owner or owner's agent shall insure that any required smoke detectors are operational prior to re-occupancy of the unit. The occupant shall be responsible for periodic maintenance and reporting, in writing, to the owner or owner's agent of any operational defects of required smoke detectors.

Section 907.3 is hereby amended as follows:

907.3. Where required—retroactive in existing buildings and structures. An approved manual, automatic or manual and automatic fire alarm system shall be installed in existing buildings and structures no later than twenty-four (24) months upon notification of requirements in accordance with Sections 907.3.1 through 907.3.1.8. Where automatic sprinkler protection is provided in accordance with Sections 903.3.1.1 or 903.3.1.2 and connected to the building fire alarm system, automatic heat detection required by this section shall not be required. An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector.

Section 907.3.1.1 is hereby amended as follows:

907.3.1.1. Group E. A fire alarm system shall be installed in existing Group E day care or child care occupancies in accordance with Section 907.2.3.

#### **EXCEPTIONS:**

- 1. A building with a maximum area of one thousand (1,000) square feet (93 m2) that contains a single classroom.
- 2. Group E day care or child care occupancies with an occupant load less than fifty (50).
  - 3. Buildings with an automatic sprinkler system.

Section 907.3.1.5 is hereby amended as follows:

907.3.1.5. Group R-1 hotels and motels. A fire alarm system shall be installed in existing Group R-1 hotels and motels more than three stories and with more than twenty (20) guestrooms.

EXCEPTION: Buildings less than three (3) stories in height where all guestrooms, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each guestroom exits directly to the exterior.

Section 907.3.1.7 is hereby amended as follows:

907.3.1.7. Group R-2. A fire alarm system shall be installed in existing Group R-2 occupancies more than three stories in height and with more than sixteen (16) dwelling units or sleeping units.

#### **EXCEPTIONS:**

- 1. Where each living unit is separated from other contiguous living units by fire barriers having a fire-resistance rating of not less than 0.75 hour, and where each living unit has its own independent exit directly to the exterior.
- 2. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and having a local alarm to notify all occupants.
- 3. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open ended corridors designed in accordance with Section 1022.6, Exception 4.

Section 907.3.1.8 is hereby amended as follows:

907.3.1.8. Group R-4. A fire alarm system shall be installed in existing Group R-4 residential care/assisted living facilities.

#### **EXCEPTIONS:**

- 1. Where there are interconnected smoke alarms meeting the requirements of Section 907.2.10.
- 2. Other manually activated, continuously sounding alarms approved by the fire code official.

## Sec. 915. Firefighter breathing air systems.

Section 915 is hereby added as follows:

- 915.1. Scope. The design, installation, and maintenance of firefighter breathing air systems shall be in accordance with this section.
- 915.2. Required installations. A firefighter breathing air system shall be installed in the following buildings:
  - 1. Buildings classified as high-rise in accordance with the Building Code.
  - 2. Underground buildings and structures, or components thereof, totaling ten thousand (10,000) square feet or more that is either more than two (2) floors below grade or more than thirty (30) feet below grade.

- 915.3. Permits and construction documents.
- 915.3.1. Permits. A fire permit is required to install, repair or modify a firefighter breathing air system.
- 915.3.2. Construction documents. Prior to the installation of a firefighter breathing air system, a minimum of two (2) sets of construction documents shall be submitted to the development services department for review and approval. Construction documents, special inspection forms, calculations, and other data shall be submitted in two (2) complete sets with each application for a permit. The construction documents shall be prepared by a design professional registered in Arizona. Construction documents shall be dimensioned and drawn upon suitable material. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the fire code official.

The plans submittal shall also include specifications for the tubing, fittings, and manufacturer data sheets for valves, pressure regulators, pressure relief devices, gauges, RIC universal air connections and cylinder filling hoses.

915.4. Contractor qualification. The firefighter breathing air system shall be installed by Arizona state licensed contractors. Proof of licensure shall be provided at the first inspection.

#### 914.5. Design criteria.

- 914.5.1. The system shall be designed to at least one hundred twenty-five percent (125%) operating pressure.
- 914.5.2. The system shall be designed to fill, at each interior cylinder filling panel, one sixty-six (66) standard cubic foot compressed breathing air cylinder to a maximum pressure of four thousand five hundred (4,500) pounds per square inch gauge (psig).
- 915.5.3. The filling operation shall be completed in not more than two (2) minutes upon connection of the cylinder to the fill hose.
- 915.5.4. The minimum design flow of the breathing air piping system shall be calculated using two (2) interior cylinder filling panels operating simultaneously and located at the highest level above the fire department access.
- 915.6. Operating pressure. All components used in the system shall be rated to operate at a minimum pressure of five thousand (5,000) psig at seventy degrees (70° F).
- 915.7. Marking. System piping, gauges, valves and air outlets shall be clearly marked by means of steel or plastic labels or tags indicating their function. Markings used for piping systems shall consist of the content's name and include a direction of flow arrow. Markings shall be provided at each valve; at wall, floor or ceiling penetrations; at each change of direction; and at a minimum of every twenty (20) feet or fraction thereof throughout the piping system.

- 915.8. Exterior fire department connection panel and enclosure.
- 915.8.1. Location. A fire department connection panel shall be attached to the building or on a remote monument at the exterior of the building, at a location approved by the fire code official. The panel shall be secured inside of a weather resistant enclosure. The panel shall be within fifty (50) feet of an approved roadway or driveway, or other location approved by the fire code official. The enclosure shall be visible and accessible on approach to the building.
- 915.8.2. Construction. The fire department connection panel shall be installed in a cabinet constructed of minimum eighteen (18) gauge carbon steel, and shall be provided with coating to protect the cabinet from corrosion.
- 915.8.3. Vehicle protection. When the panel is located in an area subject to vehicle traffic, impact protection shall be provided in accordance with this code.
- 915.8.4. Enclosure marking. The front of the enclosure shall be marked "FIREFIGHTER AIR SYSTEM" on securely attached steel, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the enclosure front and in letters that are a minimum of two (2) inches high with three-eighths (3/8) inch brush stroke. The marking of the enclosure shall be visible.
- 915.8.5. Enclosure components. The enclosure shall house a fire department connection panel containing the following components:
  - 1. One male rapid intervention crew/company universal air connection (RIC UAC) fitting. When connected to a female fitting, the assembled UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services 2007 Edition.
  - 2. Two (2) pressure gauges. The face of the pressure gauge shall be a minimum of two and one-half (2.5) inch diameter. The gauge shall have a pressure range of zero to ten thousand (0-10,000) psig and indicating units shall not be less than one hundred (100) psig or greater than two hundred fifty (250) psig increments. One pressure gauge shall be provided and marked to indicate the fill pressure. One pressure gauge shall be provided and marked to indicate the system pressure.
  - 3. One pressure regulator. One pressure regulator shall be installed between the RIC UAC fitting and the safety relief valve. The set pressure of the regulator shall not exceed the inlet pressure specified for the male RIC UAC fitting.
  - 4. One spring-loaded safety relief valve. A spring-loaded safety relief valve shall be installed downstream of the pressure regulator inlet. The relief valve shall meet the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels, and shall not be field adjustable. The relief valve shall have a set-to-open pressure not exceeding 1.1 times the design pressure of the system.

- 5. One shutoff valve. The shutoff valve shall be installed upstream of the male RIC UAC connection and check valve.
- 6. <u>One check valve.</u> The check valve shall be installed between the male RIC UAC connection and the shutoff valve.
- 7. Instructions. Instructions explaining how to operate the shutoff valve shall be posted.
- 8. <u>Tubing, fittings, adapters and supports</u>. As required.
- 915.8.6. Security. To prevent unauthorized access to or tampering with the system, the fire department connection panel enclosure shall be maintained locked by an approved means.
- 915.8.7. Fire department key box. A fire department key box shall be provided adjacent to the fire department connection panel and enclosure. A key for the enclosure shall be provided in the key box.
  - 915.9. Interior cylinder fill panels and enclosure.
- 915.9.1. Location. The panel shall be located a minimum of thirty-six (36) inches but not more than sixty (60) inches above the finished floor. Cylinder fill panels shall be installed in the interior of buildings as follows:
  - 1. <u>High rise buildings</u>. An interior cylinder fill panel and enclosure shall be installed at an approved central location on floors of high rise buildings commencing on the third floor above grade and every third floor thereafter. In addition, if basements exist greater than two (2) floors below grade, the fill panels will commence on the grade level and every third below grade level thereafter.
  - 2. <u>Underground structures as defined by Section 915.2</u> An interior cylinder fill panel and enclosure shall be installed in approved locations on the grade level and every third below grade level thereafter.
- 915.9.2. Cabinet requirements. Each cylinder fill panel shall be installed in a cabinet constructed of minimum eighteen (18) gauge carbon steel. The depth of the cabinet shall not create an exit obstruction. With the exception of the shutoff valve, pressure gauges, fill hoses and ancillary components, no system components shall be visible and shall be contained behind a minimum eighteen (18) gauge interior panel.
- 915.9.3. Door. Hinges for the cabinet door shall be located inside of the cabinet. The door shall be arranged such that when the door is open, it does not reduce the required exit width or create an obstruction in the path of egress.
- 915.9.4. Cabinet marking. The front of each cylinder fill panel shall be marked "FIREFIGHTER AIR SYSTEM." The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of two (2) inches high with three-eighths (3/8) inch brush stroke. The marking of the cabinet shall be visible to emergency response personnel.

- 915.9.5. Cabinet components. The cabinet shall be of sufficient size to allow for the installation of the following components:
  - 1. <u>One shutoff valve</u>. Shutoff valve to be located between the cylinder fill panel and the main compressed air riser. It is permissible to locate this shutoff valve outside of the cylinder fill panel.
  - 2. Two (2) pressure gauges. The face of each pressure gauge shall be a minimum two and one-half (2.5) inch diameter. The gauge shall have a pressure range of zero to ten thousand (0-10,000) psig and indicating units shall not be less than one hundred (100) psig or greater than two hundred fifty (250) psig increments. One pressure gauge shall be provided and marked to indicate the fill pressure on the four thousand five hundred (4,500) psig connections.
  - 3. One pressure regulator. One regulator shall be installed between the safety relief valve and the four thousand five hundred (4,500) psig fill connection. The set pressure of the regulator shall not exceed the discharge pressure specified for the RIC UAC fitting.
  - 4. One spring-loaded safety relief valve. A spring-loaded safety relief valve shall be installed downstream of the four thousand five hundred (4,500) psig pressure regulator inlet. The relief valve shall meet the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Unfired Pressure Vessels, and shall not be field adjustable. The relief valve shall have a set to open pressure not exceeding 1.1 times the design pressure of the system.
  - 5. Four (4) four thousand five hundred (4,500) psig self-contained breathing apparatus (SCBA) fill hoses with RIC UAC fittings. When protective caps are provided, they shall be equipped with a retainer so the cap cannot be disconnected from the hose.
  - 6. Tubing, fittings, adapters and supports. As required.
- 915.9.6. Cylinder filling hose. The design of the cabinet shall provide a means for storing the hose to prevent kinking. When the hose is coiled, the brackets shall be installed so that the hose bend radius is maintained at four (4) inches or greater. The discharge outlet of each cylinder filling hose shall have a female RIC UAC. The female fitting shall be designed to connect to a male RIC UAC. The assembled RIC UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, Standard on Open Circuit Self-Contained Apparatus for Fire and Emergency Services, 2002 Edition, Section 6.4.
- 915.9.7. Security. To prevent unauthorized access to or tampering with the system, each panel cover shall be maintained locked by an approved means.
  - 915.10. Installation of components.
- 915.10.1. Pressure monitoring switch. An electric low pressure monitoring switch shall be installed in the piping system to monitor the air pressure. The pressure switch shall be connected to the building's fire alarm system. The pressure switch shall transmit a supervisory signal when

the pressure of the breathing air system is less than three thousand (3,000) psig at seventy degrees (70° F) plus one hundred (100) psig. If the building is not equipped with a fire alarm system, activation of the pressure switch shall activate an audible alarm located at the building's main entrance. A weather resistant sign shall be provided adjacent to the audible alarm stating "FIREFIGHTER AIR SYSTEM – LOW AIR PRESSURE ALARM." The lettering shall be in a contrasting color and the letters shall be a minimum of two (2) inches high with three-eighths (3/8) inch brush stroke.

- 915.10.2. Tubing. Piping shall be constructed of stainless steel or other approved materials that are compatible with breathing air. The use of nonmetallic materials shall be compatible with breathing air. When stainless steel tubing is used, it shall meet ASTM A-269, Grade 316 or an equal standard. Stainless steel fitting shall be a minimum .375 outside diameter x .065 wall 316 fully annealed seamless. Stainless steel fittings shall be at least Grade 316 and meet the requirements of ASTM A-479 or equal. Routing of tubing and bends shall be such as to protect the tubing from mechanical damage. When piping must pass through a fire-rated assembly or other solid material, the piping shall be protected by a schedule 40 steel sleeve that is at least three (3) times the pipe diameter extending at twelve (12) inches past the assembly. Both ends of the sleeve shall be filled with an approved non-intumescent fire stop material.
- 915.10.3. Support. Piping shall be supported at maximum intervals of five (5) feet. Individual tubing clamps and mounting components shall be mechanically secured to the building support-members in accordance with manufacturers specifications.
- 915.10.4. Fittings. Fittings shall be constructed of stainless steel or other approved materials that are compatible with breathing air. The use of nonmetallic materials shall be compatible with breathing air. Stainless steel fittings shall be at least Grade 316 and meet the requirements of ASTM A-479 or an equal standard.
- 915.10.5. Prohibition. The use of carbon steel, iron pipe, malleable iron, high strength gray iron, or alloy steel is prohibited.
- 915.11. System assembly requirements. The system shall be an all welded system except where the tubing joints are readily accessible and at the individual air fill panels. When mechanical high-pressure tube fittings are used, they shall be approved for the type of materials to be joined and rated for the maximum pressure of the system. Welding procedures shall meet nationally recognized standards of good practice. Prior to and during the welding of sections of tubing, a continuous, regulated dry nitrogen or argon purge at three (3) psig shall be maintained to eliminate contamination with products of the oxidation or welding flux. The purge shall commence a minimum of two (2) minutes prior to welding operations and continue until the welded joint is at an ambient temperature of sixty degrees (60° F) to eighty degrees (80° F).
- 915.12. Prevention of contamination. The installing contractor shall ensure that, at all times, the system components are not exposed to contaminants, including but not limited to, oils, solvents, dirt and construction materials. When contamination of system components has occurred, the affected component shall not be installed in the system.

## 915.13. Testing and inspection.

- 915.13.1. Testing. Following the initial fabrication, assembly, and installation of the piping distribution system, exterior connection panel and interior cylinder fill panels, the fire department shall witness the pneumatic testing of the complete system at a minimum test pressure of five thousand five hundred (5,500) psi using oil free dry air, nitrogen or argon. A minimum twenty-four (24) hour pneumatic or hydrostatic test shall be performed. During this test, all fittings, joints and system components shall be inspected for leaks. A solution compatible with the system component materials shall be used on each joint and fitting. Any defects in the system or leaks detected shall be documented on an inspection report, repaired or replaced. A test of the low pressure monitoring switch shall be performed. Each air fill panel shall be tested for compatibility with the fire department's SCBA RIC UAC. The pipe or tubing manufacturer mill report shall be provided to the fire department.
- 915.13.2. A minimum of two (2) samples shall be taken from separate air fill panels and submitted to an independent certified gas analysis laboratory to verify the system's cleanliness and that the air is certified as breathing air. The laboratory shall submit a written report of the analysis to the fire department documenting that the breathing air complies with this section.
- 915.13.3. During the period of air quality analysis, the air fill panel inlet shall be secured so that no air can be introduced into the system and each air fill panel shall be provided with a sign stating "AIR QUALITY ANALYSIS IN PROGRESS, DO NOT FILL OR USE ANY AIR FROM THIS SYSTEM." This sign shall be a minimum of eight and one half (8-1/2) inches by eleven (11) inches with minimum of one inch lettering.
- 915.13.4. Special inspection. Prior to the final acceptance of the firefighter breathing air system, the building owner shall provide for the special inspection, testing and certification of the system. Special inspections shall be administered as required by Section 1704 of the International Building Code. At a minimum, the inspections shall include verifying the system's compatibility with the fire department's SCBA apparatus, the system's ability to maintain five thousand (5,000) psi working pressure, the operability of the low pressure monitoring switch and that the system's air quality complies with the requirements of Section 915.12. Prior to final acceptance, the building owner shall provide the fire department with written verification of a testing and certification contract. Upon satisfactory completion of all City fire code inspections, special inspection, tests, and verification of air quality, the system shall be considered complete.
- 915.14. Annual maintenance inspections. The breathing air within the system shall be inspected at least annually in accordance with this section. As part of the inspection, one air sample shall be taken and certified as breathing air in accordance with this section. The laboratory test results shall be maintained onsite and readily available for review by the fire department.

### Sec. 1007. Accessible means of egress.

Section 1007.6.2 is hereby amended as follows:

1007.6.2. Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with Section 709 of the International Building Code or a

horizontal exit complying with Section 1021. Each area of refuge shall be designed to minimize the intrusion of smoke.

#### **EXCEPTIONS:**

- 1. Areas of refuge located within a vertical exit enclosure.
- 2. Areas of refuge where the areas served by the area of refuge are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

# Sec. 1008. Doors, gates and turnstiles.

Section 1008.1.4 is hereby amended as follows:

1008.1.4. Floor elevation. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 0.25 unit vertical in twelve (12) units horizontal (two percent (2 %) slope).

#### **EXCEPTIONS:**

- 1. Doors serving individual dwelling units in Groups R-2 and R-3 where the following apply:
  - 1.1. A door is permitted to open at the top step of an interior flight of stairs, provided the door does not swing over the top step.
  - 1.2. Screen doors and storm doors are permitted to swing over stairs or landings.
- 2. Exterior doors as provided for in Section 1003.5, Exception 1, and Section 1018.2, which are not on an accessible route.
- 3. In Group R-3 occupancies not required to be Accessible units, Type A units or Type B units, the landing at an exterior doorway shall not be more than seven and three quarters (7.75) inches (197 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing.
- 4. Variations in elevation due to differences in finish materials, but not more than one-half (0.5) inch (12.7 mm).
- 5. Exterior decks, patios or balconies that are part of Type B dwelling units, have impervious surfaces and that are not more than four (4) inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit, provided the door, other than an exterior storm or screen door, does not swing over the landing.

Section 1008.1.8.3 is hereby amended as follows:

1008.1.8.3. Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

- Places of detention or restraint.
- 2. In buildings in occupancy Group A having an occupant load of three hundred (300) or less, Groups B, F, M and S, and in places of religious worship, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
  - 2.1. The locking device is readily distinguishable as locked.
  - 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters one inch (25 mm) high on a contrasting background.
  - 2.3. The use of the key-operated locking device is revokable by the fire code official for due cause.
- 3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.
- 4. Group R, Division 3 occupancies and individual dwelling units and guest rooms within Group R, Division 1 and Group R, Division 2 occupancies. Such occupancies may be provided with a night latch, double keyed dead bolt or security chain, provided such devices are openable from the inside without the use of a tool.

Section 1008.1.9 is hereby repealed.

### Sec. 1019. Number of exits and continuity.

Section 1019.2 is hereby amended as follows:

1019.2. Buildings with one exit. Only one exit shall be required in buildings as described below:

- 1. Buildings described in Table 1019.2, provided that the building has not more than one level below the first story above the grade plane.
- 2. Buildings of R-3 occupancy, except those licensed as an assisted living facility.
- 3. Single-level buildings with the occupied space at the level of exit discharge provided that the story or space complies with Section 1014.1 as a space with one means of egress.

EXCEPTION: R-4 and I-1 occupancies for adult or child care facilities are not permitted to have only one exit.

# Sec. 1024. Exit discharge.

Section 1024.6 is hereby amended as follows:

1024.6. Access to a public way. The exit discharge shall provide a direct and unobstructed access to a public way.

#### **EXCEPTIONS:**

- 1. Where access to a public way cannot be provided, a safe dispersal area shall be provided where all of the following are met:
  - 1. The area shall be of a size to accommodate at least five (5) square feet (0.28 m2) for each person.
  - 2. The area shall be located on the same property at least fifty (50) feet (15 240 mm) away from the building requiring egress.
  - 3. The area shall be permanently maintained and identified as a safe dispersal area.
  - 4. The area shall be provided with a safe and unobstructed path of travel from the building.
- 2. When the provisions of exception 1 cannot be met in E, I-1, R-3 group homes and R-4 occupancies, gates to the public way may be locked provided that all employees have on their person a key to unlock the gate(s) during an emergency."

## Sec. 2403. Temporary tents, canopies and membrane structures.

Section 2403.2 is hereby amended as follows:

2403.2. Approval required. Tents and membrane structures having an area in excess of four hundred (400) square feet (19 m2) and canopies in excess of nine hundred (900) square feet (37 m2) shall not be erected, operated or maintained for any purpose without first obtaining a permit and approval from the fire code official.

#### **EXCEPTIONS:**

- 1. Tents used exclusively for recreational camping purposes.
- 2. Fabric canopies open on all sides which comply with all of the following:
  - 2.1. Individual canopies having a maximum size of seven hundred (700) square feet (65 m2).

- 2.2. The aggregate area of multiple canopies placed side by side without a fire break clearance of twelve (12) feet (3658 mm), not exceeding seven hundred (700) square feet (65 m2) total.
- 2.3. A minimum clearance of twelve (12) feet (3658mm) to all structures and other tents.

# Sec. 3308. Fireworks display.

Section 3308.1 is hereby amended as follows:

3308.1. General. The display of fireworks, including proximate audience displays and pyrotechnic special effects in motion picture, television, theatrical, and group entertainment productions, shall comply with this chapter and NFPA 1123 or NFPA 1126. The indoor use of fireworks and pyrotechnic special-effect materials shall be prohibited."

# Chapter 45. Referenced standards.

Chapter 45 is hereby amended as follows:

## NFPA Standard Referenced