

**CITY OF TEMPE AMENDMENTS TO THE  
2012 INTERNATIONAL BUILDING CODE  
ARTICLE II, SECTION 8-200 OF THE  
THE CODE OF THE CITY OF TEMPE, AZ**

**Sec. 202 DEFINITIONS** (Additions to existing list of definitions)

Section 202 is hereby amended as follows:

*Assisted living center.* An assisted living facility that provides resident rooms or residential units to 11 or more residents.

*Assisted living facility.* A residential care institution, including adult foster care, that provides or contracts to provide supervisory care services, personal care services or directed care services on a continuing basis.

*Assisted living home.* An assisted living facility that provides resident rooms to 10 or fewer residents.

*Directed care service.* Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions.

*Dressing room.* A room in which changing clothes or dressing is an intended use, including but not limited to fitting rooms, locker rooms, and shower or bathing rooms where a separate room is not provided for dressing.

*Fraternity and sorority houses.* Any building used in whole or in part as a dwelling consisting of five or more dwelling units or sleeping rooms with more than fifty (50%) percent of the dwelling units or sleeping rooms 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.

*Parking facility.* Any surface parking lot, open or enclosed parking garage whether detached or integral to a building or one or more groups of carport canopies located on one lot or an adjacent lot with a parking agreement.

*Personal care service.* The care of persons who do not require medical care. Personal care involves responsibility for the safety of the residents while inside the building. 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 and administration of medications and treatments.

*Supervisory care service.* General supervision, including daily awareness of resident functioning and continuing needs.

*Public swimming pool.* A swimming pool that is open to the public with or without a fee, including a pool that is operated by a community, municipality, political subdivision, school district, university, college or a commercial establishment whose primary business is the operation of a pool. This includes in-ground, aboveground, and on-ground swimming pools, hot tubs, and spas.

*Semi-public swimming pool.* A swimming pool operated for the residents of lodgings such as hotels, motels, resorts, apartments, condominiums, townhouse complexes, trailer courts, mobile home parks, or similar establishments.

A semipublic pool includes a swimming pool that is operated by a neighborhood or community association for the residents of the community and their guests and a swimming pool at a country club, camp or similar establishment where the primary business of the establishment is not the operation of a swimming pool and where the use of the swimming pool is included in the fee for the primary use of the establishment. This includes in-ground, aboveground, and on-ground swimming pools, hot tubs, and spas.

*Swimming pool.* Any structure intended for swimming or recreational bathing that contains water over 18 inches (430 mm) deep. This includes in-ground, aboveground, and on-ground swimming pools, hot tubs, and spas.

## **Sec. 306 FACTORY GROUP F**

Section 306 is hereby amended as follows:

*Section 306.2 Factory Industrial F-1 Moderate-hazard Occupancy.* Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following: (Use list unchanged except as noted below)

Food processing and commercial kitchens not associated with restaurants, fast food take-out, cafeterias and similar dining facilities.

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

## **Sec. 308 INSTITUTIONAL GROUP I**

Section 308 is hereby amended as follows:

*Section 308.2 Definitions.* The following terms are defined in Chapter 2:

Additions to existing list:

ASSISTED LIVING CENTER  
ASSISTED LIVING FACILITY  
ASSISTED LIVING HOME  
DIRECTED CARE SERVICE

*Section 308.3 Institutional Group I-1.* This occupancy shall include buildings, structures or portions thereof for more than 10 persons who reside on a 24-hour basis in a supervised environment and receive personal care, supervisory care or custodial care. The persons receiving care are capable of self-preservation.

This group shall include, but not be limited to, the following:

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

*Section 308.3.1 Five or fewer persons receiving care.* A facility such as the above with 5 or fewer persons, excluding staff, shall be classified as Group R-3 and shall comply with the *International Residential Code* in accordance with Tempe Building Safety Administrative Code, Section 101.4.2.

*Section 308.3.2 Six to Ten persons receiving care.* A facility such as the above housing at least 6 but not more than 10 persons, excluding staff, shall be classified as a Group R-4 and shall comply with the *International Residential Code* in accordance with Tempe Building Safety Administrative Code, Section 101.4.2 and with Section 425 of this code.

*Section 308.4 Institutional Group I-2.* This occupancy shall include buildings and structures used for medical, custodial or directed care on a 24-hour basis for persons who are incapable of self-preservation. This group shall include, but not be limited to, the following:

Foster care facilities  
Detoxification facilities  
Hospitals  
Nursing facilities (both intermediate-care facilities and skilled nursing facilities)

Psychiatric facilities

*Section 308.4.1* is repealed in its entirety.

**Sec. 310 RESIDENTIAL GROUP R**

Section 310 is hereby amended as follows:

*Section 310.2 Definitions.* The following terms are defined in Chapter 2:

Addition to existing list:  
ASSISTED LIVING HOME

*Section 310.3 Residential Group R-1.* Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

Boarding houses (transient) with more than 5 occupants  
Congregate living facilities (transient) with more than 5 occupants  
Hotels  
Motels

*Section 310.4 Residential Group R-2.* Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses  
Boarding houses (non-transient) with more than 5 occupants  
Congregate living facilities (non-transient) with more than 5 occupants  
Convents  
Dormitories  
Fraternities and sororities  
Live/work units  
Monasteries  
Vacation timeshare properties

*Section 310.5 Residential Group R-3.* Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I including:

Buildings that do not contain more than two dwelling units as applicable in Tempe Building Safety Administrative Code, Section 101.4.2  
Boarding houses with 5 or fewer occupants subject to the conditions in the Tempe Zoning and Development Code  
Assisted living home that provides accommodation for 5 or fewer persons, of any age, receiving care.  
Congregate living facilities with 5 or fewer occupants subject to the conditions in the Tempe Zoning and Development Code

*Section 310.5.1 Assisted living home.* Assisted living home for 5 or fewer persons, excluding staff, receiving care that are within a single-family dwelling are permitted to comply with the *International Residential Code* in accordance with Tempe Building Safety Administrative Code, Section 101.4.2.

*Section 310.6 Residential Group R-4.* This occupancy shall include buildings, structures or portions thereof for more than 5 but not more than 10 occupants, excluding staff that reside on a 24 hour basis in a supervised residential environment and receive custodial care. The persons receiving care are capable of self-preservation. This group shall include, but not be limited to, the following:

Alcohol and drug centers  
Assisted living facilities  
Assisted living home  
Congregate care facilities  
Convalescent facilities

Group homes  
Halfway houses  
Residential board and custodial care facilities  
Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 except as otherwise provided for in this code or shall comply with the *International Residential Code* in accordance with Tempe Building Safety Administrative Code, Section 101.4.2 and with Section 425 of this code.

#### **Sec. 402 COVERED MALL AND OPEN MALL BUILDINGS**

Section 402 is hereby amended as follows:

*Section 402.5 Automatic sprinkler system.* Covered and open mall buildings and buildings connected shall be protected throughout with an automatic sprinkler system in accordance with Section 903.2.1, which shall comply with the following:

1. No change (N/C)
2. N/C
3. N/C
4. N/C
5. N/C

Exception is repealed in its entirety.

#### **Sec. 403 HIGH-RISE BUILDINGS**

Section 403 is hereby amended as follows:

*Section 403.3 Automatic sprinkler system.* Buildings and structures shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2 and a secondary water supply where required by Section 903.3.5.2.

Exceptions are repealed in their entirety.

#### **Sec. 404 ATRIUMS**

Section 404 is hereby amended as follows:

*Section 404.3 Automatic sprinkler protection.* An approved automatic sprinkler system shall be installed throughout the entire building.

**Exception:** Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the atrium is not required.

#### **Sec. 405 UNDERGROUND BUILDINGS**

Section 405 is hereby amended as follows:

*Section 405.3 Automatic sprinkler system.* The highest level of exit discharge serving the underground portions of the building and all levels below shall be equipped with an automatic sprinkler system installed in accordance with Section 903.2. Water-flow switches and control valves shall be supervised in accordance with Section 903.4.

#### **Sec. 406 MOTOR-VEHICLE-RELATED OCCUPANCIES**

Section 406 is hereby amended as follows:

*Section 406.3.6 Parking lot carport canopies.* A parking lot carport canopy is a non-combustible building comprised of a freestanding roof supported by columns and entirely open on all sides with no enclosures beneath the roof. Parking lot carport canopies shall be used exclusively for the solar protection of parked motor vehicles and shall not be used to shelter any other use.

*Section 406.3.6.1 Construction and height.* Parking lot carport canopies shall not exceed one-story in height, be constructed entirely of non-combustible materials and classified as a minimum Type IIB construction, except that the roof covering may have a flame-spread rating of not more than 25 when tested in accordance with ASTM E 84 or UL 723 or meets the fire propagation performance criteria of NFPA 701. Parking lot carport canopies shall be designed in accordance with the requirements of Chapter 16.

**Exception:** Photovoltaic panels may be placed on the roof of or serve as the roof membrane for a parking lot carport canopy.

Parking lot carport canopies shall have a clear height of not less than 7 feet (2134 mm). Where van accessible shaded parking is required by this Code the clear height shall meet Tempe's accessibility requirements.

*Section 406.3.6.2 Occupancy, Allowable area, Occupancy and Location on property.* Non-combustible parking canopies of a minimum Type IIB construction shall be classified as a Group U occupancy. Parking canopies shall be limited to the allowable area in Section 503 with area modifications as allowed in Section 506. No portion of parking lot carport canopies shall be located closer than 30 feet (9144 mm) to any building or property line. A clear separation of not less than 20 feet (6096 mm) shall be maintained between canopies roof lines on the same property. No canopy shall cover or encroach into any required fire lane or access aisle. Parking lot carport canopies that cannot maintain the required separation between other canopies on the same property may be considered as one canopy provided the combined canopies do not exceed the allowable area.

**Exception:** Parking canopies with a maximum area of 3000 square feet that do not exceed 100 feet in length or 40 feet in width may be located no closer than 5 feet (3048 mm) to any building or property line. A clear separation of not less than 5 feet (3048 mm) shall be maintained between canopies on the same property. Parking lot carport canopies that cannot maintain the required separation between other canopies on the same property may be considered as one canopy provided the combined canopies do not exceed the allowable area, length and/or width. No canopy shall cover or encroach into any required fire lane or access aisle. Parking carport canopies which meet all of the requirements of this exception may be located on the top tier of a parking garage. Parking carport canopies under this exception may be located in any required yard without affecting any of the general building limitations of this Code provided the carport structure is no more than 50 feet (15240 mm) in length and a clear separation of 24 feet (7315 mm) is maintained between any other carport or property line.

*Section 406.3.6.4 Automatic sprinkler systems.* Parking lot carport canopies constructed in accordance with all the requirements of this section shall be permitted without automatic sprinkler system protection.

Parking lot canopies which do not comply with all the provisions of this section shall be constructed in accordance with all the other provisions of this code.

*Section 406.6.3 Automatic sprinkler system.* An enclosed parking garage shall be equipped with an automatic sprinkler system in accordance with 903.2.

## **Sec. 410 STAGES AND PLATFORMS**

Section 410 is hereby amended as follows:

*Section 410.7 Automatic sprinkler system.* Stages shall be equipped with an automatic fire-extinguishing system in accordance with Chapter 9. Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the stage. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such stages.

**Exceptions:**

1. Sprinklers are not required under stage areas less than 4 feet (1219 mm) in clear height that are utilized exclusively for storage of tables and chairs, provided the concealed space is separated from the adjacent spaces by not less than two (2) layers of 5/8-inch (15.9 mm) Type X gypsum board.
2. Sprinklers are not required within portable orchestra enclosures on stages.

**Sec. 419 LIVE/WORK UNITS**

Section 419 is hereby amended as follows:

*Section 419.5 Fire protection.* The live/work unit shall be provided with a monitored fire alarm system where required by Section 907.2.9 and an automatic sprinkler system in accordance with Section 903.2.

**Sec. 425 R-4 ASSISTED LIVING HOMES**

Section 425 is hereby amended as follows:

*Section 425.1 Applicability.* The provisions of this section shall apply to a building or part thereof housing at least 6 but not more than 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides licensed care services. Except as specifically required by this division, R-4 occupancies shall meet all applicable provisions of Group R-3.

*Section 425.2 General.* Buildings or portions of buildings classified as R-4 occupancies shall meet all the applicable provisions of Group R-3, may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building, and shall not exceed 2000 square feet above the first story except as provided in Section 506.

*Section 425.3 Special provisions.* R-4 occupancies having more than 2000 square feet of floor area above the first story shall be of not less than one-hour fire-resistive construction throughout.

*Section 425.3.1 Mixed Uses.* R-4 occupancies shall be separated from other uses as provided in Table 508.4.

*Section 425.3.2 Accessibility.* R-4 occupancies shall be provided with at least one accessible route per Chapter 11 of this code. Sleeping rooms and associated toilets shall be accessible.

**Exception:** Existing buildings shall comply with Section 3411. Bathing and toilet facilities need not be made accessible, but shall be provided with grab bars in accordance with Chapter 11 of this code.

*Section 425.3.3 Number of exits.* Every story, basement, or portion thereof shall have not less than two exits.

**Exception:** Basements below and stories above the first floor containing no sleeping rooms may have one means of egress as provided in Chapter 10.

*Section 425.3.4 Distance to exits.* Travel distance shall comply with Chapter 10, except that the maximum travel distance from the center point of any sleeping room to an exit shall not exceed 75 feet.

*Section 425.3.5 Exit Signs/Illumination.* Required exit doors shall be provided with illuminated exit signs in accordance with Section 1011 of this code.

*Section 425.3.6 Emergency escape and rescue.* R-4 occupancies shall comply with the egress requirements of Section 1029, except that Exception 1 to 1029.2 does not apply to R-4 occupancies.

*Section 425.3.7 Delayed egress locks.* In R-4 occupancies, delayed egress locks shall be permitted in accordance with Sections 1008.1.9.7, items 1, 2, 4, 5 and 6.

*Section 425.3.8 Smoke alarms and Carbon monoxide alarms.* All habitable rooms and hallways in R-4 occupancies shall be provided with smoke alarms and, when required, carbon monoxide alarms. The smoke and carbon monoxide alarms shall be installed in accordance with Section 907.2.11 and Section 1211.

*Section 425.3.9 Sprinkler systems.* R-4 occupancies shall be provided with a sprinkler system installed in accordance with Section 903.3.1.3. Sprinkler systems installed under this Section shall be installed throughout, including attached garages. Such systems may not contain unsupervised valves between the domestic water riser control valve and the sprinklers.

## **Sec. 501 GENERAL**

Section 501 is hereby amended as follows:

*Section 501.2 Premises identification.* Approved numbers or addresses shall be provided for new or existing buildings in accordance with the Tempe Zoning and Development Code, Section 4-903 A and Tempe Building Safety Administrative Code, Section 112. Address numbers shall be maintained.

## **Sec. 509 INCIDENTAL USES**

Section 509 is hereby amended as follows:

Section 509.4.2.1 is repealed in its entirety.

## **Sec. 603 COMBUSTIBLE MATERIAL IN TYPE I AND II CONSTRUCTION**

Section 603 is hereby amended as follows:

*Section 603.1.3 Electrical.* The use of electrical wiring methods with combustible insulation, tubing, raceways and related components shall be permitted when installed in accordance with the limitations of the Tempe Electrical Code.

## **Sec. 706 FIRE WALLS**

Section 706 is hereby amended as follows:

**TABLE 706.4  
FIRE WALL FIRE-RESISTANCE RATINGS<sup>c</sup>**

<b>GROUP</b>	<b>FIRE-RESISTANCE RATING (hours)</b>
<b>A, B, E, H-4, I, R-1, R-2, U</b>	<b>3<sup>a</sup></b>
<b>F-1, H-3<sup>b</sup>, H-5, M, S-1</b>	<b>3</b>
<b>H-1, H-2</b>	<b>4<sup>b</sup></b>
<b>F-2, S-2, R-3, R-4</b>	<b>2</b>

a. Walls shall be not less than 2-hour fire-resistance rated where separating buildings of Type II or V construction.

b. For Group H-1, H-2 or H-3 buildings also see Sections 415.4 and 415.5.

- c. For the purpose of this provision, occupancy changes between Group B, F-1, M or S-1 occupancies built under a legacy code will not require a change to an existing fire (area separation) wall.

## [F] Sec. 903 AUTOMATIC SPRINKLER SYSTEMS

**Sections 903.2.1 through 903.2.12 are repealed in their entirety and replaced with amended 903.2.1 through 903.2.12.**

[F] *Section 903.2 Where required.* Approved automatic sprinkler systems in new buildings, structures, and other locations shall be provided in the locations described in Sections 903.2.1 through 903.2.12.

**Exception:** Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 or not less than 2-hour horizontal assemblies constructed in accordance with Section 712, or both.

[F] *Section 903.2.1 New buildings or structures.* All areas of new buildings, 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. Group R-3 occupancies of 5,000 square feet or less and other occupancies, buildings or structures accessory to R-3 occupancies constructed using this code or the International Residential Code.
2. Individual Group R-3 townhouse units of 5,000 square feet or less and other occupancies accessory to R-3 townhouse when constructed and separated in compliance with the International Residential Code.
3. Detached non-combustible parking lot carports in accordance with Section 406.3.6.
4. In other than H occupancies, detached non-residential buildings of 1,000 square feet or less in floor area.
5. Detached non-combustible canopies less than 5,000 square feet in roof area used exclusively for vehicle fuel dispensing stations provided the fire separation distance required by Table 602 is maintained from property lines or other buildings.
6. Non-combustible (columns, beams and roof members) shade canopies less than 5,000 square feet; not closer than 5 feet to any building, property line or other shade canopy; and shading one of the following: vehicles for sale at a dealership, vehicle-washing or drying facilities, playground equipment, or outdoor eating areas without cooking.
7. Shade canopies less than 2000 square feet; not closer than 5 feet to any property line or other shade canopy; with a non-combustible frame and a roof membrane meeting the fire propagation performance criteria of NFPA 701 or has a flame spread index not greater than 25 when tested in accordance with ASTM E 84 or UL 723; shading one of the following: vehicles for sale at a dealership, vehicle-washing or drying facilities, playground equipment, outdoor eating areas without cooking or similar uses.
8. Combustible shade canopies less than 1,000 square feet; not closer than 10 feet to any building, property line or other shade canopy; and shading one of the following: vehicles for sale at a dealership, vehicle-washing or drying facilities, playground equipment, or outdoor eating areas without cooking.
9. Shipping containers used for non- hazardous storage purposes and not closer than 5 feet to



any building, property line or other container.

10. Exterior roof overhangs or awnings of Type I, II or III construction with no combustible storage beneath.
11. Exterior covered/enclosed walkways of Type I, II or III construction with enclosing walls that are at least 50 percent open and complying with Section 3104 of this code.
12. Temporary covered walkways for the protection of pedestrians during construction, remodeling and demolition activities.
13. Factory built buildings utilized as temporary sales offices or construction offices.
14. Shade structures (attached or detached) located no closer than 5 feet to a property line, constructed of steel columns, beams and roof members where the roof shall be at least 65% open to the sky with roof members that are evenly spaced across the entire area of the structure.

[F] *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**

<b>Location</b>	<b>Occupancy Hazard Classification</b>
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

[F] *Section 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 5000 square feet shall be retrofit with a fire sprinkler system.

**TABLE 903.2.3 EXISTING BUILDING HAZARD LEVELS**

<b>Hazard Level</b>	<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 , E
4	B, F-1, M, S-1
5 (lowest)	F-2, S-2, U, R-3

Notes: Occupancies are as defined in this Code.

When a change of occupancy of 5000 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.

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.

[F] *Section 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:**

1. 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 1000 square feet.
2. Additions to existing non-sprinklered Group R-3 occupancy or other buildings or structures accessory to R-3 occupancies where the addition area is 5000 square feet or less.

The above exceptions do not supersede other requirements of this Chapter or the Tempe Fire Code.

[F] *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 or more floors shall have additional sprinkler heads installed within such chutes at alternate floors. Chute sprinklers shall be accessible for servicing.

[F] *Section 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.

[F] *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 10 inches (254 mm).

[F] *Section 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.

[F] *Section 903.2.9 Other required suppression systems.* In addition to the requirements of Section 903.2, the provisions indicated in Table 903.2.9 also require the installation of a suppression system for certain buildings and areas.

**[F] TABLE 903.2.9**

## ADDITIONAL REQUIRED SUPPRESSION SYSTEMS

SECTION	SUBJECT
402.5	Covered malls
403.3	High-rise buildings
404.3	Atriums
405.3	Underground structures
407.6	Group I-2
410.7	Stages
411.4	Special amusement buildings
412.4.6, 412.4.6.1, 412.6.5	Aircraft hangars
415.10.11	Group H-2
416.5	Flammable finishes
417.4	Drying rooms
507	Unlimited area buildings
509.4	Incidental accessory occupancies
1028.6.2.3	Smoke-protected assembly seating
IFC	Sprinkler system requirements as set forth in Section 903.2.11.6 of the International Fire Code

[F] *Section 903.2.10. New shell buildings with unknown occupancy type or hazard classification.* In new shell buildings constructed with an interior ceiling/deck height exceeding twenty (20) feet and where the occupancy or hazard classification is unknown, the minimum fire sprinkler design criteria shall be .495/2000 sq. ft.

[F] *Section 903.2.11 Fraternities and Sororities.* Any building used as a fraternity or sorority house as defined in Section 202 of this code, shall be equipped with an approved automatic fire sprinkler system.

[F] *Section 903.2.12 Occupancies which permit smoking.* In occupancies which permit the smoking of a lit pipe, cigar, cigarette, plants, herbs or other forms of smoking materials shall have an automatic sprinkler system installed within the building or tenant space it occupies.

[F] *Section 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 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.

[F] *Section 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 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.

## [F] Sec. 907 FIRE ALARM AND DETECTION SYSTEMS

Section 907 is hereby amended as follows:

[F] *Section 907.2.11.4 Power source.* In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

### Exceptions:

1. Smoke alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system.
2. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power or where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.
3. Where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, hard-wiring of smoke alarms in existing areas shall not be required unless there is an attic, crawl space or basement available which could provide access for hard wiring without the removal of interior finishes.

[F] *Section 907.2.11.5 Alterations, repairs and additions.* When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

**Exceptions:**

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems are exempt from the requirements of this section.

**Sec. 915 EMERGENCY RESPONDER RADIO COVERAGE**

Section 915 is hereby amended as follows:

[F] *Section 915.1 General.* Emergency responder radio coverage shall be provided in all new buildings in accordance with Tempe City Code Chapter 9, Article II Section 9-21 and Tempe Fire Code, Section 510.

**Sec. 916 FIREFIGHTER BREATHING AIR SYSTEMS**

Section 916 is hereby amended as follows:

[F] *Section 916.1 Scope.* The design, installation and maintenance of firefighter breathing air systems shall be in accordance with the Tempe Fire Code, Sections 915.2 through 915.14.

**Sec. 1003 GENERAL MEANS OF EGRESS**

Section 1003 is hereby amended as follows:

*Section 1003.5 Elevation change.* Where changes in elevation of less than 12 inches (305 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1010 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

**Exceptions:**

1. A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2, R-3, S and U at exterior doors not required to be accessible by Chapter 11, provided the door, other than an exterior storm or screen door, does not swing over the step.
2. N/C
3. N/C

Throughout a story in a Group I-2 occupancy, any change in elevation in portions of the exit access that serve

nonambulatory persons shall be by means of a ramp or sloped walkway.

**Sec. 1015 EXIT AND EXIT ACCESS DOORWAYS**

Section 1015 is hereby amended as follows:

*Section 1015.2.2 Three or more exits or exit access doorways.* Where access to three or more exits is required, at least two exit doors or exit access doorways shall be arranged in accordance with the provisions of Section 1015.2.1.

Additional required exit doors or exit access doorways shall be spaced so a minimum distance of one-fourth of the length of the maximum overall diagonal dimension of the area served is maintained between any other required exit door or exit access doorway.

**Sec. 1021 NUMBER OF EXITS AND CONTINUITY**

Section 1021 is hereby amended as follows:

**TABLE 1021.2.2  
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
First story or basement	A, B <sup>b</sup> , E, F <sup>b</sup> , M, U, S <sup>b</sup>	49 occupants	75 feet
	H-2, H-3	3 occupants	25 feet
	H-4, H-5, I, R-1, R-2 <sup>a,c</sup> , R-4 <sup>d</sup>	10 occupants	75 feet
	S <sup>a</sup>	29 occupants	100 feet
Second story	B <sup>b</sup> , F, M, S <sup>a</sup>	29 occupants	75 feet
Third story	NP	NA	NA

For SI: 1 foot = 304.8 mm.

NP – Not Permitted

NA – Not Applicable

- a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
- b. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
- c. This table is used for R-2 occupancies consisting of sleeping units. For R-2 occupancies consisting of dwelling units, use Table 1021.2(1)
- d. R-4 occupancies for Assisted living facilities or Assisted living homes are not permitted to have only one exit.

**Sec. 1024 LUMINOUS EGRESS PATH MARKINGS**

Section 1024 is hereby amended as follows:

*Section 1024.1 General.* Approved luminous egress path markings delineating the exit path shall be provided in high-rise buildings in accordance with Sections 1024.1 through 1024.5.

**Exceptions:** Luminous egress path markings shall not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1027.1, Exception 1.

**Sec. 1101. GENERAL.**

Section 1101 is hereby amended as follows:

*Section 1101.2. Design.* Buildings and facilities shall be designed and constructed to be accessible in accordance with the this code, ICC A117.1, and Arizona Revised Statutes, Title 41, Chapter 9, Article 8, Public Accommodation and Services, The Arizonans with Disabilities Act, R 10-3-401 through R 10-3-404, which includes 28 CFR Part 35 and 28 CFR 36 and the ADA 2010 Standards for Accessible Design.

Where provisions may conflict between the different codes, the provision that provides the greatest degree of accessibility shall be used for any given building, facility or element.

**Sec. 1102 DEFINITIONS**

Section 1102 is hereby amended as follows:

*Section 1102.1 Definitions.* The following terms are defined in Chapter 2:

Addition to existing list:

DRESSING ROOM

**Sec. 1603 CONSTRUCTION DOCUMENTS**

Section 1603 is hereby amended as follows:

*Section 1603.1.10 Floor and roof design live loads posted.* Where the live loads for which each floor or portion thereof of a commercial or industrial building is or has been designed to exceed 50 psf (2.40 kN/m<sup>2</sup>), such design live loads shall be conspicuously posted by the owner in that part of each story in which they apply, using durable signs. It shall be unlawful to remove or deface such notices.

*Section 1603.1.11 Issuance of certificate of occupancy.* A certificate of occupancy required by Section 107 shall not be issued until the floor load signs, required by Section 1603.1.10, have been installed.

*Section 1603.1.12 Restrictions on loading.* It shall be unlawful to place, or cause or permit to be placed, on any floor or roof of a building, structure or portion thereof, a load greater than is permitted by this code.

**Sec. 1607. LIVE LOADS.**

Section 1607 is hereby amended as follows:

**Table 1607.1  
MINIMUM UNIFORMLY DISTRIBUTED LOADS AND MINIMUM  
CONCENTRATED LIVE LOADS.**

**Table 1607.1 is unchanged except for the following:**

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
25. Residential One- and two-family dwellings		-
Uninhabitable attics with limited storage <sup>i, j, k</sup>	40	
Habitable attics and sleeping areas	40	

**Sec. 1609. WIND LOADS.**

Section 1609 is hereby amended as follows:

*Section 1609.1.1 Determination of wind loads.* Wind loads on every building or structure shall be determined in accordance with Chapter 26 to 30 of ASCE 7 or provisions of the alternate all-heights method in Section 1609.6. The type of opening protection required, the ultimate design wind speed,  $V_{ult}$ , and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7, but not less than 90 mph 3-second gust, Exposure C. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.

**Exceptions:**

1. Subject to the limitations of Section 1609.1.1.1, the provisions of ICC-600 shall be permitted for applicable Group R-2 and R-3 buildings.
2. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of the AF&PA WFCM.
3. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of AISI S230.
4. Designs using NAAMM FP 1001.
5. Designs using TIA-222 for antenna-supporting structures and antennas.
6. Wind tunnel tests in accordance with Section 6.6 of ASCE 7, subject to the limitations in Section 1609.1.1.2.

*Section 1609.4.3 Exposure C:* Exposure C shall apply for all cases where Exposure B or D does not apply. To use Exposure B, the registered design professional shall provide evidence within the design calculations that Exposure B would apply to the project site.

**Sec. 2902 MINIMUM PLUMBING FACILITIES**

Section 2902 is hereby amended as follows:

**TABLE 2902.1  
MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES <sup>a</sup>  
(See Sections 2902.2 and 2902.3)**

Table is unchanged except as noted below

No.	CLASSIFICATION	USE GROUP	DESCRIPTION	WATER CLOSETS (SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE FOR URINALS)		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS <sup>e, f,</sup> <sup>g, h</sup> (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER <sup>i</sup>
				MALE	FEMALE	MALE	FEMALE			
1	Assembly	A-2 <sup>d</sup>	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
2	Business (see Sections 2902.2, 2902.4, 2902.4.1 and 2902.6)	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	Where Separate Facilities are required by Section 2902.2 1 per 100	1 service sink

No.	CLASSIFICATION	USE GROUP	DESCRIPTION	WATER CLOSETS (SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE FOR URINALS)	LAVATORIES	BATHTUBS OR SHOWERS	DRINKING FOUNTAINS <sup>e, f,</sup> <sub>g, h</sub> (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER <sup>i</sup>
6	Mercantile (see Section 2902.2, 2902.5 and 2902.6)	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500	1 per 750	—	Where Separate Facilities are required by Section 2902.2 1 per 1,000	1 service sink

- a. N/C
- b. N/C
- c. N/C
- d. N/C
- e. N/C

- f. In other than I-1 Residential care, I-3 Reformatories, detention centers and correctional centers, I-4 Adult day care and child care, R-2 Dormitories, fraternities, sororities and boarding houses, R-3 Congregate living facilities with 16 or fewer persons, and R-4 Residential care/assisted living facilities, drinking fountains are not required for an occupant load of 25 or fewer.
- g. Drinking fountains will not be required in individual tenant spaces or single tenant buildings of Group B, F-1, F-2, S-1 or S-2 occupancies where an accessible break room sink is provided within the tenant space or building.
- h. Occupancies that provide food and/or beverage service to patrons do not need to provide drinking fountains.
- i. Where each tenant space has access to a centrally located service sink on the floor it occupies, individual tenant service sinks will not be required.

*Section 2902.2 Separate facilities.* Where plumbing fixtures are required, separate facilities shall be provided for each sex.

**Exception:**

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. In other than I-1, I-3, I-4, R-2, R-3 and R-4 occupancies, separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 25 or less.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or less.

*Section 2902.3.2 Location of toilet facilities in occupancies other than mall buildings.* In occupancies other than covered and open mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities and the path of travel to such facilities shall not exceed a distance of 500 feet (152 400 mm). The required public and employee toilet facilities may not be located in a building under different ownership or in a tenant space under different tenant control.

**Exception:** The location and maximum travel distance to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum travel distance are approved.

**Sec. 3103 TEMPORARY STRUCTURES**

Section 3103 is hereby amended as follows:

*Section 3103.1.1 Permit required.* Temporary structures that cover an area greater than 400 square feet (18.58 m2), including connecting areas or spaces with a common means of egress or entrance which are used or intended to be used for the gathering together of 50 or more persons, shall not be erected, operated or



maintained for any purpose without obtaining a permit from the building official.

**Sec. 3107. SIGNS.**

Section 3107 is hereby amended as follows:

*Section 3107.1 General.* Signs shall be permitted, designed, constructed and maintained in accordance with the City of Tempe Zoning and Development Code.

**Sec. 3109. SWIMMING POOL ENCLOSURE AND SAFETY DEVICES.**

Section 3109 is hereby amended as follows:

*Section 3109.2 Definition.* The following term is defined in Chapter 2:

**PUBLIC SWIMMING POOLS**

**SEMI-PUBLIC SWIMMING POOLS**

**SWIMMING POOLS**

*Section 3109.3 Public and semi-public swimming pools.* Public and semi-public swimming pools shall be completely enclosed by a fence or a screen enclosure. The fence or screen enclosure shall comply with Sections 3109.4.1 through 3109.4.1.6. Access doors or gates in the fence or screen enclosure shall comply with Section 3109.4.1.7. Where a swimming pool is regulated by the Maricopa County Environmental Health Code, the fencing, doors, gates or screen enclosure shall comply with Chapter VI, Section 6, of that code.

*Section 3109.4 Residential swimming pools.* Residential swimming pools shall comply with Sections 3109.4.1 through 3109.4.3.

**Exception:**

1. A swimming pool with a power safety cover or spas or hot tubs with a safety cover complying with ASTM F 1346.
2. Where the premises upon which a swimming pool, spa, or hot tub is located adjoins that body of water recorded as Tract S of The Lakes, an enclosure parallel to the bank is not required; provided, that an abutting enclosure, conforming to AG105, extends horizontally to the lakeside edge of the lake bank or beyond. For purposes of this exception, the word abutting shall mean terminating at the point of contact with the lakeside edge of the bank.

*Section 3109.4.1. Barrier height and clearances.* The top of the barrier shall be at least 5 feet (1525 mm) above grade measured on the side of the barrier that faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier that faces away from the swimming pool. Where the top of the pool structure is above grade, such as an aboveground pool, the barrier may be at ground level, such as the pool structure, or mounted on the top of the pool structure.

Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm). Any barrier shall be at least 24 (610 mm) inches from the water's edge.

*Section 3109.4.1.5 Chain link dimensions.* Mesh size for chain link fences shall be not greater than 1-3/4 inches (44 mm) measured horizontally.

*Section 3109.4.1.7 Gates.* Access doors or gates shall comply with the requirements of Sections 3109.4.1 through 3109.4.1.6 and shall be equipped to accommodate a locking device. Pedestrian access doors or gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Doors or gates other than pedestrian access doors or gates shall have a self-latching device. Release mechanisms shall

be in accordance with Sections 1008.1.9 and 1109.13. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the door or gate, the release mechanism shall be located on the pool side of the door or gate at least 5 inches (127 mm) below the top of the door or gate, and the door or gate and barrier shall have no opening greater than 1/2 inch (12.7 mm) within 24 inches (610 mm) of the release mechanism. When access doors or gates are secured by a padlock or similar device which requires a key, electric opener or integral combination the latch can be at any height.

*Section 3109.4.1.8 Dwelling wall as a barrier.* Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. Doors with direct access to the pool through that wall shall meet Section 3109.4.1.7 or be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed and labeled in accordance with UL 2017. In dwellings not required to be Accessible units, Type A units or Type B units, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings required to be Accessible units, Type A units or Type B units, the deactivation switch shall be located at 54 inches (1372 mm) maximum and 48 inches (1219 mm) minimum above the threshold of the door.
2. Emergency escape or rescue openings from sleeping rooms with access to the swimming pool or other contained body of water which meets the definition of a swimming pool shall be equipped with a latching device not less than fifty-four (54) (1372 mm) inches above finished floor. Emergency escape and rescue openings shall be operational from the inside as required by the building codes. All other openable dwelling unit windows with access to a swimming pool hot tub or spa shall be equipped with a keyed lock that prevents opening the window more than four (4) (102 mm) inches, or a latching device located not less than fifty-four (54) (1372 mm) inches above finished floor.
3. The pool shall be equipped with a power safety cover that complies with ASTM F 1346.
4. Other means of protection, such as self-closing doors with self-latching devices, which are approved, shall be accepted so long as the degree of protection afforded is not less than the protection afforded by Section 3109.4.1.8, Item 1 or 2.

*Section 3109.4.2 Indoor swimming pools.* Walls surrounding indoor swimming pools shall comply with Section 3109.4.1.8

*Section 3109.4.4 Prerequisites to issuance of building permit.* A building permit shall not be issued for any swimming pool, spa or hot tub unless the plans for such pool provide for an enclosure as required by this article.

*Section 3109.4.5 Final inspection and approval.* No swimming pool, spa or hot tub shall be filled in whole or in part with water unless the pool enclosure has been installed in accordance with this article and approved by the deputy community development director/building safety or authorized representative.

## **Sec. 3111 SOLAR VOLTAIC PANELS/MODULES**

Section 3111 is hereby amended as follows:

[F] (605.11) *Section 3111.1 Solar photovoltaic power systems.* Solar photovoltaic power systems shall be installed in accordance with this code, the International Fire Code, Sections 605.11.1 through 605.11.4, and National Electrical Code.

**Exception:** Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of this section.

[F] (605.11.1) *Section 3111.2 Marking.* Marking is required on interior and exterior direct-current (DC) conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes and disconnects.

[F] (605.11.1.1) *Section 3111.2.1 Materials.* The materials used for marking shall be reflective, weather resistant and suitable for the environment. Marking as required in Sections 3111.2.2 through 3111.2.4 shall have all letters capitalized with a minimum height of 3/8 inch (9.5 mm) white on red background.

[F] (605.11.1.2) *Section 3111.2.2 Marking content.* The marking shall contain the words “WARNING: PHOTOVOLTAIC POWER SOURCE.”

[F] (605.11.1.3) *Section 3111.2.3 Main service disconnect.* The marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated.

[F] (605.11.1.4) *Section 3111.2.4 Location of marking.* Marking shall be placed on interior and exterior DC conduit, raceways, enclosures and cable assemblies every 10 feet (3048 mm), within 1 foot (305 mm) of turns or bends and within 1 foot (305 mm) above and below penetrations of roof/ceiling assemblies, walls or barriers.

[F] (605.11.2) *Section 3111.3 Locations of DC conductors.* Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of load bearing members.

[F] (605.11.3) *Section 3111.4 Access and pathways.* Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 3111.5 through 3111.7.3.

**Exceptions:**

1. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.
2. Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

[F] (605.11.3.1) *Section 3111.5 Roof access points.* Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors, and located at strong points of building construction in locations where the access point does not conflict with overhead obstructions such as tree limbs, wires, or signs.

[F] (605.11.3.2) *Section 3111.6 Residential systems for one-and two family dwellings.* Access to residential systems for one-and two family dwellings shall be provided in accordance with Sections 3111.6.1 through 3111.6.4.

[F] (605.11.3.2.1) *Section 3111.6.1 Residential buildings with hip roof layouts.* Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.

**Exception:** These requirements shall not apply to roofs with slopes of two units vertical in 12

units horizontal (2:12) or less.

[F] (605.11.3.2.2) *Section 3111.6.2 Residential buildings with a single ridge.* Panels/modules installed on residential buildings with a single ridge shall be located in a manner that provides two, 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels/modules are located.

**Exception:** This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

[F] (605.11.3.2.3) *Section 3111.6.3 Residential buildings with roof hips and valleys.* Panels/modules installed on residential buildings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

**Exception:** This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

[F] (605.11.3.2.4) *Section 3111.6.4 Residential building smoke ventilation.* Panels/modules installed on residential buildings shall be located no higher than 3 feet (914 mm) below the ridge in order to allow for fire department smoke ventilation operations.

[F] (605.11.3.3) *Section 3111.7 Other than residential buildings.* Access to systems for occupancies other than one-and two family dwellings shall be provided in accordance with Sections 3111.7.1 through 3111.7.3.

**Exception:** Where it is determined by the *fire code official* that the roof configuration is similar to that of a one-or two family dwelling, the residential access and ventilation requirements in Sections 605.11.3.2.1 through 605.11.3.2.4 shall be permitted to be used.

[F] (605.11.3.3.1) *Section 3111.7.1 Access.* There shall be a minimum 6-foot-wide (1829 mm) clear perimeter around the edges of the roof.

**Exception:** Where either axis of the building is 250 feet (76 200 mm) or less, there shall be a minimum 4-foot-wide (1290 mm) clear perimeter around the edges of the roof.

[F] (605.11.3.3.2) *Section 3111.7.2 Pathways.* The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting the live load of fire fighters accessing the roof.
2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.
3. Shall be a straight line not less than 4 feet (1290 mm) clear to skylights or ventilation hatches.
4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.
5. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

[F] (605.11.3.3.3) *Section 3111.7.3 Smoke ventilation.* The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.
2. Smoke ventilation options between array sections shall be one of the following:

- 2.1. A pathway 8 feet (2438 mm) or greater in width.
- 2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or smoke and heat vents.
- 2.3. A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) “venting cutouts” every 20 feet (6096 mm) on alternating sides of the pathway.

[F] (605.11.4) *Section 3111.8 Ground-mounted photovoltaic arrays.* Ground-mounted photovoltaic arrays shall comply with Sections 3111.1 through 3111.3 and this section. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays. A clear, brush-free area of 10 feet (3048 mm) shall be required for ground-mounted photovoltaic arrays.