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**ORDINANCE NO.**

**AN ORDINANCE REPEALING AND REPLACING ARTICLE 1 OF CITY CODE CHAPTER 25-12 TO ADOPT THE 2015 INTERNATIONAL BUILDING CODE AND LOCAL AMENDMENTS.**

**BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:**

**PART 1.** Article 1, Division 1 (*Building Code*) of City Code Chapter 25-12 (*Technical Codes*) is repealed and replaced with a new Article 1, Division 1, to read as follows:

**ARTICLE 1. BUILDING CODE.**

**Division 1. International Building Code and Local Amendments**

**§ 25-12-1 BUILDING CODE.**

(A) The 2015 International Building Code published by the International Code Council is adopted and incorporated into this section with deletions and amendments in Subsection (B) and Section 25-12-3 (*Local Amendments to the Building Code*).

(B) The following provisions of the 2015 International Building Code are deleted:

Sec. 101.4.1	Sec 101.4.2	Sec. 101.4.3	Sec. 103
Sec. 104.2.1	Sec. 104.10.1	Sec. 105.1.1	Sec. 105.2
Sec. 105.3.2	Sec. 105.5	Sec. 107.2.5	Sec. 110.3.1
Sec. 110.3.5	Sec. 110.3.7	Sec. 113	Sec. 305.2
Sec. 305.2.2	Sec. 305.2.3	Sec. 308.3.3	Sec. 308.3.4
Sec. 308.4	Sec. 308.4.1.1	Sec. 308.4.2	Sec. 308.6
Sec. 308.6.1	Sec. 308.6.3	Sec. 308.6.4	Sec. 310.3
Sec. 310.5.1	Sec. 403.2.1	Sec. 403.2.1.1	Sec. 403.2.1.2
Sec. 403.3	Sec. 403.5.3.1	Sec. 406.4.4	Sec. 406.5.7
Sec. 414.1.3	Sec. 503.1.1	Sec. 507.3	Sec. 507.4
Sec. 510.4	Sec. 602.4.2	Sec. 705.5	Sec. 714.4.1.2
Sec. 901.5	Sec. 903.2.1.6	Sec. 903.2.8.3	Sec. 903.3.1.1.1

1	Sec. 903.3.1.2.1	Sec. 903.3.5	Sec. 903.3.6	Sec. 904.9
2	Sec. 904.12	Sec. 904.13	Sec. 905.1	Sec. 905.3.4.1
3	Sec. 905.4	Sec. 905.5.3	Sec. 907.2	Sec. 907.2.8.2
4	Sec. 907.2.9.1	Sec. 907.5.2.1.1	Sec. 907.6.6	Sec. 909.5
5	Sec. 909.6.3	Sec. 909.10.2	Sec. 909.12.4	Sec. 909.18.8
6	Sec. 909.20 and subsections		Sec. 912.4	Sec. 912.4.1
7	Table 1004.1.2	Sec. 1006.3.2	Table 1006.3(1)	Table 1006.3(2)
8	Sec. 1007.1.1	Sec. 1008.2.1	Sec. 1009.3	Sec. 1010.1.2
9	Sec. 1010.1.4.3	Sec. 1010.1.9.8	Sec. 1010.1.9.11	Sec. 1020.4
10	Sec. 1027.3	Sec. 1101.2	Sec. 1104.1	Sec. 1106.6
11	Sec. 1107.6.1.2	Sec. 1107.6.2.2.2	Sec. 1107.6.3.2	Sec. 1107.6.3
12	Sec. 1107.6.4.2	Sec. 1110.1	Sec. 1301.1	Sec. 1301.1.1
13	Sec. 1507.8 and subsections		Section 1507.9 and subsections	
14	Sec. 1607.7.2	Sec. 1612 and subsections		Sec. 2902.1
15	Table 2901.1	Sec. 2902.1.1	Sec. 2902.6	Sec. 3102.1
16	Sec. 3109.3	Sec. 3201.1	Sec. 3202.1	Sec. 3202.2.1
17	Sec. 3202.3.3			

18 The city clerk shall file a copy of the 2015 International Building Code with  
19 the official ordinances of the City.

20  
21 **§ 25-12-2 CITATIONS TO THE BUILDING CODE.**

22 In the City Code, "Building Code" means the 2015 International Building Code  
23 adopted by Section 25-12-1 (*Building Code*), as amended by Section 25-12-1 (*Building*  
24 *Code*) Subsection (B) and Section 25-12-3 (*Local Amendments to the Building Code*).  
25

26 **§ 25-12-3 LOCAL AMENDMENTS TO THE BUILDING CODE.**

27 The following provisions are local amendments to the 2015 International Building  
28 Code. Each provision in this section is a substitute for the identically numbered  
29 provision deleted by Section 25-12-1(B) (*Building Code*) or is an addition to the 2015  
30 International Building Code.

1 [A] **101.4.1 Gas.** The provisions of the *International Fuel Gas Code* and the Plumbing  
2 Code shall apply to the installation of gas piping from the point of delivery, gas  
3 appliances, and related accessories as covered in this code. The Plumbing Code  
4 supersedes the International Fuel Gas Code to the extent of conflict. These requirements  
5 apply to gas piping systems extending from the point of delivery to the inlet connections  
6 of appliances and the installation and operation of residential and commercial gas  
7 appliances and related accessories.

8 [A] **101.4.2 Mechanical.** The provisions of the *International Mechanical Code* and the  
9 Mechanical Code shall apply to the installation, alterations, repairs, and replacement of  
10 mechanical systems, including equipment, appliances, fixtures, fittings, and/or  
11 appurtenances, including ventilating, heating, cooling, air conditioning, and refrigeration  
12 systems, incinerators, and other energy related systems. The Mechanical Code  
13 supersedes the International Mechanical Code to the extent of conflict.

14 [A] **101.4.3 Plumbing.** The provisions of the *International Plumbing Code* and the  
15 Plumbing Code shall apply to the installation, alteration, repairs, and replacement of  
16 plumbing systems, including equipment, appliances, fixtures, fittings, and appurtenances,  
17 and where connected to a water or sewage system and all aspects of a medical gas  
18 system. The Plumbing Code supersedes the International Plumbing Code to the extent of  
19 conflict. The provisions of the *International Private Sewage Disposal Code* and the  
20 Plumbing Code shall apply to private sewage disposal systems. The Plumbing Code  
21 supersedes the International Private Sewage Code to the extent of conflict.

## 22 SECTION 103

### 23 BUILDING OFFICIAL

24 [A] **103.1 Building official.** The City Manager shall appoint a *building official* to  
25 administer and interpret this Code. The *building official* may appoint one or more deputy  
26 building officials.

27  
28 [A] **104.2.1 Determination of substantially improved or substantially damaged**  
29 **existing buildings and structures in flood hazard areas.** For applications for  
30 reconstruction, rehabilitation, *repair, alteration, addition* or other improvement of  
31 existing buildings or structures located in *flood hazard areas*, the *building official* shall  
32 examine or cause to be examined the construction documents and shall prepare a finding  
33 with regard to the value of the proposed work. If the work is a *substantial improvement*  
34 as defined in Section 202 (*Definitions*), the proposed work shall comply with Section  
35 1612 (*Flood Loads*) and Appendix G of this Code.

1 [A] **105.1.1 Annual permit.** Instead of an individual *permit* for each *alteration* to an  
2 already *approved* electrical, gas, mechanical or plumbing installation, and minor building  
3 alterations and repairs, the *building official* is authorized to issue an annual *permit* upon  
4 application therefor to any person, firm or corporation regularly employing one or more  
5 qualified tradepersons in the building, structure or on the premises owned or operated by  
6 the applicant for the *permit*.

7  
8 **105.1.1.1 Authorized scope of work.** Work under the annual permit is limited to the  
9 following:

10  
11 **Building:**

- 12
- 13 1. Work that does not alter a bearing wall or other structural  
14 elements; and
- 15 2. does not require a change to an exit system; and
- 16 3. does not alter fire-resistive construction; and
- 17 4. is performed on a building or structure for which a certificate of  
18 occupancy for the existing occupancy had been issued by the  
19 building official; and
- 20 5. does not alter natural gas piping or medical gas piping systems;  
21 and
- 22 6. does not alter hazardous production material (HPM) supply or  
23 waste piping in areas of the building not currently classified as an  
24 H occupancy; and
- 25 7. does not remove, relocate, replace, or install a backflow prevention  
26 device; and
- 27 8. does not increase the existing square footage of a building; and
- 28 9. otherwise complies with all other applicable provisions of this  
29 title; and
- 30 10. it is performed by licensed contractors as required by the Plumbing  
31 Code, Electrical Code or Mechanical Code.

32  
33 **Electrical:**

- 34
- 35 1. The work is limited to the repair, modification, or installation of  
36 equipment or branch circuits. Work involving sub-panels, panels,

1 electrical service, or other similar work requires permits issued  
2 under Section 80.19 of the Electric Code;

- 3 2. The work is performed by an electrical contractor employee with  
4 the proper license classification or licensed master electrician  
5 employed by the facility, and in accordance with Section 80.40  
6 (Supervision) of the Electric Code;
- 7 3. The facility shall maintain records on all work performed under the  
8 annual permit in accordance with Section 105.1.2 (*Annual permit*  
9 *records*).

10  
11 **Mechanical:**

- 12  
13 1. replacement, modification, or relocation of existing ductwork, fan  
14 coil units, VAV boxes volume dampers, environmental make-up air  
15 systems and related equipment; and
- 16 2. modification of existing hazardous production material (HPM)  
17 supply systems, HPM drain systems and HPM exhaust systems in H  
18 occupancy areas, as defined in the Building Code, and in exterior  
19 areas to accommodate the installation or relocation of equipment.

20  
21 **Plumbing:**

- 22  
23 1. Installation, repair, and replacement of fixtures, traps, shut-off  
24 valves, water distribution piping, drains, building waste piping, vent  
25 stacks and water heaters with a capacity of 100 gallons or less and a  
26 rating of 75,000 BTU or less, provided the work does not require  
27 approval of the Austin Travis County Health Department, the City of  
28 Austin Water Utility, or the Texas Department of Licensing and  
29 Regulation.

30 **[A] 105.2 Work exempt from permit.** Exemptions from *permit* requirements of this  
31 code shall not be deemed to grant authorization for any work to be done in any manner in  
32 violation of the provisions of this code or any other laws or ordinances of this  
33 jurisdiction. *Permits* shall not be required for the following:

34  
35 **Building:**

1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area is not greater than 120 square feet (11 m<sup>2</sup>); provided they are not located within a flood hazard area.
2. Fences not over 7 feet (2134 mm) high; provided they are not located within a flood hazard area.
3. Oil derricks; provided they are not located within a flood hazard area.
4. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids; provided they are not located within a flood hazard area.
5. Water tanks supported directly on grade if the capacity is not greater than 5,000 gallons (18 925 L) and the ratio of height to diameter or width is not greater than 2:1; provided they are not located within a flood hazard area.
6. Sidewalks and driveways not more than 30 inches (762 mm) above adjacent grade, and not over any basement or story below and are not part of an accessible route; provided they are not located within a flood hazard area.
7. Painting, papering, tiling, carpeting, cabinets, counter tops, and similar finish work.
8. Temporary motion picture, television, and theater stage sets and scenery.
9. Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than 24 inches (610 mm) deep, are not greater than 5,000 gallons (18,925 L) and are installed entirely above ground; provided they are not located within a flood hazard area.
10. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems; provided they are not located within a flood hazard area.

11. Swings and other playground equipment accessory to detached one- and two-family dwellings; provided they are not located within a flood hazard area.
12. Window awnings in Group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1,372 mm) from the exterior wall and do not require additional support.
13. Nonfixed and movable fixtures, cases, racks, counters, and partitions not over 5 feet 9 inches (1,753 mm) in height.
14. Repair to gypsum board that is not part of a fire-resistance-rated wall, a shear assembly, or part of a shower or water closet surround; provided it is limited to a maximum of 32 square feet.
15. Emergency removal of water damaged material such as, but not limited to gypsum board, insulation, wood paneling, etc., in order to avoid health hazard issues; a permit is required for the repairs.

**Electrical:**

**Repairs and maintenance:** Minor repair work, including the replacement of lamps or the connection of *approved* portable electrical equipment to *approved* permanently installed receptacles.

**Radio and television transmitting stations:** The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for a power supply and the installations of towers and antennas.

**Temporary testing systems:** A *permit* shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

**Gas:**

1. Portable heating appliance.

2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

**Mechanical:**

1. Portable heating appliance.
2. Portable ventilation equipment.
3. Portable cooling unit.
4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.
5. Replacement of any part that does not alter its approval or make it unsafe.
6. Portable evaporative cooler.
7. Self-contained refrigeration system containing 10 pounds (5 kg) or less of refrigerant and actuated by motors of 1 horsepower (746 W) or less.

**Plumbing:**

1. The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a *permit* shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves, or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

**105.5 Time Limitation on Application; Permit Expiration and Reactivation.** Time limits on permit applications and requirements for permit expiration and reactivation,



1 including a review fee for expired permits, are set forth in City Code Chapter 25-12,  
2 Article 13 (*Administration of Technical Codes*).

3  
4 Exception: Permits issued under Section 105.1.1 (*Annual permit*) are only valid for  
5 a period of 360 days from the date of issuance and cannot be extended.

6  
7 **105.8 Transfer of permit.** The *building official* is authorized to establish a building  
8 permit transfer policy.

9 **[A] 107.2.5 Site plan.** The *construction documents* submitted with the application for  
10 *permit* shall be accompanied by a site plan showing to scale the size and location of new  
11 construction and existing structures on the site, distances from *lot lines*, the established  
12 street grades and the proposed finished grades and, as applicable, *flood hazard areas*,  
13 *floodways*, and *design flood elevations*; and it shall be drawn in accordance with an  
14 accurate boundary line survey. In the case of demolition, the site plan shall show  
15 construction to be demolished and the location and size of existing structures and  
16 construction that are to remain on the site or plot. For a building or structure involving  
17 below-grade construction, the site plan shall show the location of proposed earth  
18 retention system components allowed under Section 3202.1.4 (*Earth Retention System*  
19 *Components*). The *building official* is authorized to waive or modify the requirement for  
20 a site plan when the application for *permit* is for *alteration* or *repair* or when otherwise  
21 warranted.

22 **108.5 Temporary earth retention systems.** Temporary earth retention system  
23 components used to facilitate below-grade construction of a building or structure shall  
24 conform to Sections 1811 (*Earth Retention Systems*) and Section 3202.1.4 (*Earth*  
25 *retention system components*).

26 **109.7 Plan review fees.** An applicant must pay a plan review fee, adopted by separate  
27 ordinance, when plans and specifications are submitted for review under Section 107  
28 (*Submittal Documents*). The *building official* shall compute the building plan review fees  
29 using the total value of all construction work for which the *permit* is issued as well as the  
30 value of all finish work, painting, roofing, electrical, plumbing, heating, air conditioning,  
31 elevators, fire-extinguishing systems, and other permanent equipment. The *building*  
32 *official* shall charge an additional plan review fee if plans are incomplete or changed so  
33 as to require additional plan review. The plan review fees referenced in this section are in  
34 addition to the *permit* fees referenced in Section 109.1 (*Payment of fees*).

35 **110.3.1 Building pre-construction inspection.** This is the first inspection conducted.  
36 The inspector verifies the permits that were issued for work at a site and meets with the

1 contractor or owner at the site to review plans and identify potential issues. The inspector  
2 notifies the contractor of the inspector's work hours and identifies required inspections.

3 **110.3.1.1 Layout Inspection.** A layout inspection shall be made after all foundation  
4 forms have been erected and are in place, but before any concrete is placed.

5 **[A] 110.3.1.2 Footing and foundation inspection.** Footing and foundation inspections  
6 shall be made after excavations for footings are complete and any required reinforcing  
7 steel is in place. For concrete foundations, any required forms shall be in place prior to  
8 inspection. Materials for the foundation shall be on the job, except where concrete is  
9 ready mixed in accordance with ASTM C 94, the concrete need not be on the job.

10 **[A] 110.3.5 Lath, gypsum board and gypsum panel product inspection.** Lath, gypsum  
11 board and gypsum panel product inspections shall be made after lathing, gypsum board  
12 and gypsum panel products, interior and exterior, are in place, but before any plastering is  
13 applied or gypsum board and gypsum panel product joints and fasteners are taped and  
14 finished.

15 Exception: Gypsum board and gypsum panel products that are not part of a fire-  
16 resistance-rated assembly, a shear assembly, or part of a shower or water closet  
17 surround; provided it is limited to a maximum of 32 square feet.

18 **110.3.7 Energy efficiency inspections.** Inspections shall be made to determine  
19 compliance with the energy efficiency requirements of the Energy Code, as adopted by  
20 Chapter 25-12, Article 12 (*Energy Code*), and shall include, but not be limited to,  
21 inspections for: envelope insulation R- and U-values, fenestration U-value, duct system  
22 R-value, and HVAC and water-heating equipment efficiency.

23 **111.5 Maintenance of records.** The building owner, or the owner's authorized agent,  
24 must maintain a copy of the certificate of occupancy on the premises and provide it to an  
25 authorized official on request.

26 **112.3 Authority to disconnect service utilities.** The *building official* shall have the  
27 authority to authorize disconnection of utility service to the building, structure or service  
28 system regulated by this code and the codes referenced under this section.

29  
30 **112.3.1 Circumstances for which utilities may be disconnected.** The *building official*  
31 may authorize the disconnection of utilities if the *building official* determines that:

- 32 1. disconnection is necessary to eliminate an immediate hazard to life or  
33 property;
- 34 2. an owner or occupant is in violation of a stop work order;

3. electrical work has been installed without a permit;
4. plumbing or gas piping has been installed without a permit; or
5. development does not comply with Title 25 (*Land Development*).

**112.3.2 Notice.** This section prescribes notice requirements for disconnection of utilities.

**112.3.2.1 Disconnection because of an immediate threat to life or property.** If disconnection of utilities is necessary to eliminate an immediate hazard to life, the *building official* shall notify the serving utility and whenever possible, the owner and occupant of the building, structure, or service system of the decision prior to taking any action. If not notified prior to disconnecting, the owner or occupant of the building, structure or service system shall be notified in writing, by certified mail, return receipt requested, as soon as practical thereafter.

**112.3.2.2 Disconnection for a reason other than an immediate threat to life or property.** If the disconnection of utilities is for a reason other than to eliminate an immediate hazard to life, the *building official* shall give notice according to this section. Notice shall first be provided for the violation in accordance with the applicable section of City Code Title 25 (*Land Development*). The notice of violation shall include a statement that the *building official* may authorize the disconnection of utilities if the violation is not cured within the timeframe established in the notice of violation. If the owner or occupant fails to comply with the notice of violation, the *building official* may issue a notice to the owner and occupant stating that utilities to the property will be disconnected not less than one week after the date that the notice is mailed. The notice must identify each utility that will be disconnected.

## **SECTION 113 BUILDING AND FIRE CODE BOARD OF APPEALS**

Regulations regarding the Building and Fire Code Board of Appeals are found in Chapter 2-1 of the City Code.

## **SECTION 202 DEFINITIONS**

**The following definitions are amended as follows:**

**[BS] BASE FLOOD.** A *flood* having a 1-percent chance of being equaled or exceeded in any given year (100-year flood).

**[BS] DESIGN FLOOD.** The *flood* associated with an area with a flood plain subject to a 1-percent or greater chance of flooding in any year (100-year flood) based on projected full development in accordance with the City of Austin Drainage Criteria Manual.

1 **[BS] DESIGN FLOOD ELEVATION.** The elevation of the “design flood” relative to  
2 the City of Austin vertical datum standard.

3 **[BS] FLOOD HAZARD AREA.** The greater of the following two areas:

- 4 1. An area within a flood plain subject to a 1-percent or greater chance of  
5 flooding in any year (100-year flood); or
- 6 2. An area with a flood plain subject to a 1-percent or greater chance of  
7 flooding in any year (100-year flood) based on projected full development in  
8 accordance with the City of Austin Drainage Criteria Manual.

9 **[BS] FLOODWAY.** The channel of the river, creek or other watercourse and the  
10 adjacent land areas that must be reserved in order to discharge the base flood without  
11 cumulatively increasing the water surface elevation more than a designated height. An  
12 area with a flood plain subject to a 4-percent or greater chance of flooding in any year  
13 (25-year flood) based on projected full development in accordance with the City of  
14 Austin Drainage Criteria Manual.

15 **START OF CONSTRUCTION.** The date of permit issuance for new construction and  
16 *substantial improvements to existing structures*, provided the actual start of construction,  
17 *repair*, reconstruction, rehabilitation, *addition*, placement, or other improvement is within  
18 180 days after the date of issuance. The actual start of construction means the first  
19 placement of permanent construction of a building (including a manufactured home) on a  
20 site, such as the pouring of a slab or footings, installation of pilings, or construction of  
21 columns. Permanent construction does not include land preparation (such as clearing,  
22 excavation, grading, or filling), the installation of streets or walkways, excavation for a  
23 *basement*, footings, piers or foundations, the erection of temporary forms, or the  
24 installation of accessory buildings such as garages or sheds not occupied as dwelling  
25 units or not part of the main building. For a *substantial improvement*, the actual “start of  
26 construction” means the first *alteration* of any wall, ceiling, floor or other structural part  
27 of a building, whether or not that *alteration* affects the external dimensions of the  
28 building.

29 **SUBSTANTIAL IMPROVEMENT.** For the purpose of determining compliance with  
30 the flood hazard management provisions of this code, “substantial improvement” means  
31 any combination of *repair*, reconstruction, rehabilitation, *alteration*, *addition* or other  
32 improvement of a building or structure during the immediate 10-year period, the cost of  
33 which cumulatively equals or exceed 50 percent of the market value of the structure  
34 before the improvement or repair is started or, if the structure has been damaged and is  
35 being restored, before the damage occurred. If the structure has sustained *substantial*

1 *damage, any repairs* are considered substantial improvement regardless of the actual  
2 *repair* work performed. The term does not, however, include either of the following:

- 3
- 4 1. Any project for improvement of a building required to correct existing  
5 health, sanitary or safety code violations identified by the *building official*  
6 and that are the minimum necessary to assure safe living conditions.
  - 7
  - 8 2. Any alteration of a historic structure, provided that the alteration will not  
9 preclude the structure's continued designation as a historic structure; for the  
10 purpose of this exclusion, a historic building is a building that is:
    - 11
    - 12 2.1. Listed or preliminarily determined to be eligible for listing in the  
13 National Register of Historic Places; or
    - 14
    - 15 2.2. Determined by the Secretary of the U.S. Department of Interior as  
16 contributing to the historical significance of a registered historic  
17 district or a district preliminarily determined to qualify as an historic  
18 district; or
    - 19
    - 20 2.3. Designated as historic under a State of Texas or local historic  
21 preservation program that is approved by the Department of Interior.
    - 22

23 **202.1 Supplemental Definitions.** The definitions in this subsection apply throughout this  
24 code and amend or supplement the definitions in Section 202 (*General Definitions*) in the  
25 2015 International Building Code, as published:

26 **BALCONY, EXTERIOR.** An exterior floor projected from and supported by a  
27 structure without additional independent supports.

28 **BED AND BREAKFAST.** A private residence having a limited number of sleeping  
29 rooms which are available for transient guests who have paid for accommodations. For  
30 the different classifications of Bed and Breakfast, refer to LDC 25-2-781 (*Bed and*  
31 *Breakfast Residential Use Structures Classified*).

32 **CHILD CARE FACILITIES.** Facilities that provide care to more than five children,  
33 2 ½ years of age or less.

34 **DECK.** An exterior floor supported on at least two opposing sides by an adjacent  
35 structure, and/or post, piers or other independent supports.

1 **REGULATORY FLOOD DATUM.** An established plane of reference from which  
2 elevations and depth of flooding may be determined for specific locations of the  
3 floodplain. It is the water level of the design flood plus a freeboard factor of one foot.  
4 Design flood plus freeboard equals Regulatory Flood Datum.

5 202.1.2 **Deleted Definitions.** The following definitions are deleted from Section 202  
6 (*General Definitions*) in the 2015 International Building Code, as published:

- 7 1. **FLOOD HAZARD AREA SUBJECT TO HIGH VELOCITY WAVE**  
8 **ACTION.**
- 9 2. **FOSTER CARE FACILITIES.**

10 **305.2 Group E, day care facilities.** This group includes buildings and structures or  
11 portions thereof occupied by more than six children older than 2 ½ years of age who  
12 receive educational, supervision, or *personal care services* for fewer than 24 hours per  
13 day.

14 **305.2.2 Six or fewer children.** A facility having six or fewer children receiving such  
15 day care shall be classified as part of the primary occupancy.

16 **305.2.3 Six or fewer children in a dwelling unit.** A facility such as the above within a  
17 dwelling unit and having six or fewer children receiving such day care shall be classified  
18 as a Group R-3 occupancy or shall comply with the *International Residential Code*.

19 **308.3.3 Seven to 16 persons receiving custodial care.** A facility housing not fewer than  
20 seven and not more than 16 persons receiving custodial care shall be classified as Group  
21 R-4.

22 **308.3.4 Six or fewer persons receiving custodial care.** A facility with six or fewer  
23 persons receiving custodial care shall be classified as Group R-3 or shall comply with the  
24 *International Residential Code* provided an *automatic sprinkler system* is installed in  
25 accordance with Section 903.3.1.3 or Section P2904 of the *International Residential*  
26 *Code* as published.

27 **308.4 Institutional Group I-2.** Institutional I-2 occupancy shall include buildings and  
28 structures used for *medical care* on a 24-hour basis for more than six persons who are  
29 *incapable of self-preservation*. This group shall include, but not be limited to, the  
30 following:

- 31 *Detoxification facilities*
- 32 *Hospitals*
- 33 *Nursing homes*
- 34 *Psychiatric hospitals*

1 **308.4.1.1 Condition 1.** This occupancy condition shall include facilities that provide  
2 nursing and medical care but do not provide emergency care, surgery, obstetrics or in-  
3 patient stabilization units for psychiatric or detoxification.  
4

5 **308.4.2 Six or fewer persons receiving medical care.** A facility with six or fewer  
6 persons receiving medical care shall be classified as Group R-3 or shall comply with the  
7 *International Residential Code* provided an *automatic sprinkler system* is installed in  
8 accordance with Section 903.3.1.3 or Section P2904 of the *International Residential*  
9 *Code* as published.  
10

11 **308.6 Institutional Group I-4, day care facilities.** Institutional Group I-4 shall include  
12 buildings and structures occupied by more than six persons of any age who receive  
13 *custodial care* for fewer than 24 hours per day by persons other than parents or guardians,  
14 relative by blood, marriage, or adoption, and in a place other than the home of the person  
15 cared for. This group shall include, but not be limited to, the following:

16       Adult day care

17       Child day care

18 **308.6.1 Classification as Group E.** A child care facility that provides care for more than  
19 six but no more than 100 children 2 ½ years or less of age, where the rooms in which the  
20 children are cared for are located on a *level of exit discharge* serving such rooms and each  
21 of these child care rooms has an *exit* door directly to the exterior, shall be classified as  
22 Group E.

23 **308.6.3 Six of fewer persons receiving care.** A facility having six or fewer persons  
24 receiving custodial care shall be classified as part of the primary occupancy.

25 **308.6.4 Six or fewer persons receiving care in a dwelling unit.** A facility such as the  
26 above within a dwelling unit and having six or fewer persons receiving *custodial care*  
27 shall be classified as a Group R-3 occupancy or shall comply with the *International*  
28 *Residential Code*, provided an automatic sprinkler system is installed in accordance with  
29 Section 903.3.1.3 (*NFPA 13D sprinkler systems*) or with Section P2904 of the 2015  
30 *International Residential Code* as published.

31 **310.3 Residential Group R-1.** Residential occupancies containing *sleeping units* where  
32 the occupants are primarily *transient* in nature, including:

33       *Boarding houses (transient)* with more than 10 occupants

34       *Congregate living facilities (transient)* with more than 10 occupants

1 Hotels (*transient*)

2 Motels (*transient*)

3 *Bed and Breakfasts*

4 **Exception:** Compliance with Section 903.2.8 (*Group R*) is not required for a  
5 single structure Group R-1 Bed and Breakfast occupancy (*see City Code Section*  
6 *25-2-781*) when the owner resides within the Bed and Breakfast occupancy and  
7 provided that:

- 8 1. The structure is a detached single family home that was legally  
9 constructed and occupied as a single family residence prior to January  
10 1, 2006,
- 11 2. The total number of sleeping rooms has not been increased after  
12 January 1, 2006,
- 13 3. The residence is protected by a monitored residential style  
14 fire/security system with an appropriate automatic smoke detection  
15 system installed throughout the residence with occupant notification  
16 devices in accordance with Section 907.5(*Occupant notification*  
17 *systems*), and
- 18 4. The residential style fire/security system must be inspected, tested and  
19 maintained in accordance with Section 907.8 (*Inspection, testing and*  
20 *maintenance.*)

21 **310.5.1 Care facilities within a dwelling.** Care facilities for six or fewer persons  
22 receiving care that are within a single-family dwelling are permitted to comply with the  
23 *International Residential Code*, provided an *automatic sprinkler system* is installed in  
24 accordance with Section 903.3.1.3 (*NFPA 13D sprinkler systems*) or with Section P2904  
25 of the 2015 *International Residential Code* as published.

26 **Exception:** Compliance with Section 903.3.1.3 (*NFPA 13D sprinkler systems*) is  
27 not required for adult care and child care facilities that are within the proprietor's  
28 single-family home; provided that the home was permitted prior to October 1,  
29 2010.

30 **403.2.1 Reduction in fire-resistance rating.** The fire-resistance- rating reductions listed  
31 in Section 403.2.1.1 (*Type of construction*) shall be allowed in buildings that have  
32 sprinkler control valves equipped with supervisory initiating devices and water-flow  
33 initiating devices for each floor.



1 **403.2.1.1 Type of construction.** The following reductions in the minimum construction  
2 type allowed in Table 601 shall be allowed as provided in Section 403.2.1 (*Reduction in*  
3 *fire-resistance rating*):

- 4 1. Type 1A construction shall be allowed to be reduced to Type IB, except in  
5 buildings over 12 stories or over 160 feet high.

6 **Exception:** The required *fire-resistance rating* of columns supporting  
7 floors shall not be permitted to be reduced.

- 8  
9 2. In other than Groups F-1, M, and S-1 Type IB construction shall be allowed  
10 to be reduced to Type IIA.  
11 3. The height and area limitations of the reduced construction type shall be  
12 allowed to be the same as for the original construction type.

13 **403.3 Automatic sprinkler system.** Buildings and structures shall be equipped  
14 throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1  
15 (*NFPA 13 sprinkler system*) and a secondary water supply where required by Section  
16 403.3.3 (*Secondary water supply*).

17  
18 **Exception:** An *automatic sprinkler system* shall not be required in spaces or areas  
19 of:

- 20  
21 1. Stand-alone open parking garages in accordance with Section 406.5  
22 (*Open parking garages*).  
23  
24 2. Telecommunications equipment buildings used exclusively for  
25 telecommunications equipment, associated electrical power  
26 distribution equipment, batteries and standby engines, provided that  
27 those spaces or areas are equipped throughout with an automatic fire  
28 detection system in accordance with Section 907.2 (*Where required –*  
29 *new buildings and structures*) and are separated from the remainder of  
30 the building by not less than 1-hour fire barriers constructed in  
31 accordance with Section 707 (*Fire Barriers*) or not less than 2-hour  
32 horizontal assemblies constructed in accordance with Section 711  
33 (*Horizontal Assemblies*), or both.  
34

35 **403.5.3.1 Stairway communications system.** A telephone or other two-way  
36 communications system connected to an approved constantly attended station shall be

1 provided at not less than every floor in each required stairway if the doors to the stairway  
2 are capable of being locked.

3 **Exception:** The stairway communication system is not required in high rise  
4 buildings when all the following conditions are met;

- 5 1. Area of refuge communication system terminal, installed and  
6 maintained per International Building Code Sec. 1009.6.5 (Two-way  
7 communication), is located immediately adjacent to each floor level  
8 landing.
- 9 2. The area of refuge communication terminal is connected to an  
10 approved constantly attended station.
- 11 3. The door between the stair and the vestibule (area of refuge) cannot be  
12 locked.
- 13 4. An approved sign is provided at each floor level landing inside the  
14 stairwell.

15 **406.4.4 Ramps.** Vehicle ramps shall not serve as an exit element unless pedestrian  
16 facilities are provided. Such pedestrian facilities shall meet the minimum exit width  
17 requirements of Section 1005, exclusive of parking spaces and vehicle circulation aisles.  
18 The minimum width and depth of parking spaces and vehicle circulation aisles shall be in  
19 accordance with the Austin Transportation Criteria Manual, Table 9-1 or Table 9-2  
20 (residential and low-use garages only). Vehicle ramps that serve as an exit element shall  
21 not exceed a slope of 1:18 (12.5 percent). Vehicle ramps that serve as part of an  
22 accessible route shall not exceed a slope of 1:20 (5% percent).

23  
24 **406.5.7 Means of egress.** Where persons other than parking attendants are permitted,  
25 open parking garages shall meet the means of egress requirements of Chapter 10 (*Means*  
26 *of Egress*). Lifts shall be permitted to be installed for use of employees only, provided  
27 they are completely enclosed by noncombustible materials.

28  
29 **414.1.3 Information required.** Separate floor plans shall be submitted for buildings and  
30 structures with an occupancy in Group H, identifying the locations of anticipated contents  
31 and processes, to reflect the nature of each occupied portion of every building and  
32 structure. The floor plan shall identify the hazards associated with the contents and  
33 processes. A report identifying hazardous materials including, but not limited to,  
34 materials representing hazards that are classified in Group H to be stored or used, shall be  
35 submitted and the methods of protection from such hazards shall be indicated on the  
36 construction documents. The *building official* or fire marshal may also require a technical

1 opinion that addresses the adequacy of the protective measures provided. The opinion  
2 and report shall be prepared by a qualified individual, firm or corporation approved by  
3 the *building official* and fire marshal, and shall be provided without charge to the City of  
4 Austin.

## 5 6 **SECTION 427 OCCUPIED ROOFS**

7 **427.1 Applicability.** The provisions of Sections 427.1 through 427.6 shall apply to all  
8 parts of buildings and structures that contain any occupancies located on the roof area of  
9 the building or structure.

10 **427.2 Allowable occupancies.** The proposed occupancy for a roof shall be allowed only  
11 if the same occupancy is allowed in the floor below the roof. Assembly occupancies on  
12 roofs must comply with Section 903.2.1.6 (*Assembly occupancies on roofs*).

13 **427.3 Construction requirements.** Roofs approved for rooftop occupancy shall have a  
14 minimum fire resistance of one-hour or the fire resistance required for the building,  
15 whichever is greater. Occupied roofs shall be treated as a story for the following  
16 construction related purposes.

- 17 1. for determining the required construction type and minimum fire resistance  
18 rating for the roof structure.
- 19 2. for calculating occupant load and building height as they relate to exiting  
20 requirements of Chapter 10 and thresholds for fire safety features required  
21 by Sections 903 (*Automatic Sprinkler Systems*), Section 905 (*Standpipe*  
22 *Systems*), and 907 (*Fire Alarm and Detection Systems*).

23 **Exception:** The occupant load of an occupied roof that complies with  
24 this section shall not contribute to the occupant load of the fire area  
25 below for the purposes of requiring automatic sprinkler and/or fire  
26 alarm protection provided that:

- 27 a) All openings from below are protected with fire resistive  
28 assemblies, and
  - 29 b) The occupied roof has code compliant exits independent  
30 of the building or buildings below.
- 31 3. For the location and installation of toilet facilities.

32 **427.4 Fall protection.** Occupied rooftops shall be provided with guards compliant with  
33 Section 1013 (*Guards*).

1 **427.5 Interstitial spaces.** When decks or other walking surfaces are constructed above a  
2 roof to facilitate rooftop occupancy, the space between the roof/ceiling assembly and the  
3 deck or surface shall be constructed in a manner that precludes the accumulation of  
4 material between the roof/ceiling assembly and the deck or walking surface and that  
5 prevents the introduction of ignition sources to the space.

6 **427.6 Coverings above or around the occupants of an occupied rooftop.** A rooftop  
7 equipped with a horizontal or vertical covering or coverings, including weather  
8 protection, such as a roof or a tent or membrane structure that exceeds the limitations of  
9 Chapter 24 (*Flammable Finishes*) of the Fire Code shall be considered an additional story  
10 and shall comply with the construction and occupancy requirements of the City Code as a  
11 floor.

12 **Exceptions:**

- 13 1. Small roof coverings may be approved for weather protection of  
14 restrooms and beverage preparation areas such as bars without  
15 requiring the rooftop to comply with all of the requirements of this  
16 code for a story or floor. Such coverings shall comply with the  
17 Building Code as to construction materials and fire resistance. The  
18 area of such coverings shall be limited to the minimum area required  
19 to comply with sanitation and health safety regulations.
- 20 2. An open noncombustible trellis or similar overhead shading device  
21 complying with the structural requirements of this code shall not be  
22 considered as a covering or roof provided that the trellis or shade  
23 has an evenly distributed net free area of 50 percent or greater.

24 **503.1.1 Special industrial occupancies.** In other than H occupancies, Buildings and  
25 structures designed to house special industrial processes that require large areas and  
26 unusual *building heights* to accommodate craneways or special machinery and  
27 equipment, including, among others, rolling mills; structural metal fabrication shops and  
28 foundries; or the production and distribution of electric, gas or steam power, shall be  
29 exempt from the *building height*, number of stories and *building area* limitations  
30 specified in Sections 504 (*Building Height and Number of Stories*) and 506 (*Building*  
31 *Area*).

32 **507.4 Sprinklered, one story.** The area of a Group A-4 building no than one *story*  
33 *above grade plane* of other than Type V construction, or the area of a Group B, F, M or S  
34 building no more than one story above grade plane of any construction type, shall not be  
35 limited where the building is provided with an *automatic sprinkler system* throughout in

1 accordance with Section 903.3.1.1 (*NFPA 13 sprinkler systems*), and is surrounded and  
2 adjoined by public ways or yards not less than 60 feet (18,288 mm) in width.

3 **Exceptions:**

- 4 1. Buildings and structures of Type I and II construction for rack storage  
5 facilities which do not have access by the public shall not be limited  
6 in height provided that such buildings conform to the requirements of  
7 Sections 507.4 (*Sprinklered, one story*) and 903.3.1.1 (*NFPA 13*  
8 *sprinkler systems*) and Chapter 32 (*High-Piled Combustible Storage*)  
9 of the *International Fire Code*.
- 10 2. The *automatic sprinkler system* shall not be required in the areas  
11 occupied for indoor participant sports, such as tennis, skating,  
12 swimming, and equestrian activities in occupancies in Group A-4  
13 provided that all of the following criteria are met:
- 14 2.1. Exit doors directly to the outside are provided for occupants of  
15 the participant sports areas;
- 16 2.2. The building is equipped with a *fire alarm system* with *manual*  
17 *fire alarm boxes* installed in accordance with Section 907 (*Fire*  
18 *Alarm and Detection Systems*); and
- 19 2.3. Accessory and ancillary spaces shall be fully protected in  
20 accordance with NFPA 13.

21 **510.4 Parking beneath Group R.** Where a maximum *one-story above grade plane*  
22 Group S-2 parking garage, enclosed or open, or combination thereof, of Type I  
23 construction, with grade entrance, is provided under a building of Group R, the number  
24 of stories to be used in determining the minimum type of construction shall be measured  
25 from the floor above such a parking area. The floor assembly between the parking garage  
26 and the Group R above shall comply with the type of construction required for the  
27 parking garage and shall also provide a fire-resistance rating not less than 3 hours.

28 **602.4.2 Cross-laminated timber in exterior walls.** *Cross-laminated timber* complying  
29 with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour  
30 rating or less, provided the exterior surface of the cross-laminated timber is protected by  
31 one of the following.

- 32 1. Type X Gypsum board not less than ½ inch (12.7 mm) thick; or  
33 2. A noncombustible material.

1 **705.5 Fire-resistance ratings.** *Exterior walls* shall be fire-resistance rated in accordance  
2 with Tables 601 and 602 and this section. The required *fire-resistance rating of exterior*  
3 *walls* with a *fire separation distance* of greater than 10 feet (3048 mm) shall be rated for  
4 exposure to fire from the inside. The required *fire-resistance rating of exterior walls*  
5 with a *fire separation distance* of less than or equal to 10 feet (3048 mm) shall be rated  
6 for exposure to fire from both sides. Exterior walls of Type III construction shall be rated  
7 for exposure from both sides, when required by Tables 601 and 602 and this section,  
8 regardless of separation distance.

9 **714.4.1.2 Through-penetration firestop system.** *Through penetrations* shall be  
10 protected by an *approved through-penetration firestop system* installed and tested in  
11 accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential  
12 of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less  
13 than 1 hour but not less than the required rating of the floor penetrated.

14  
15 **Exceptions:**

- 16  
17 1. Floor penetrations contained and located within the cavity of a wall  
18 above the floor or below the floor do not require a T rating.
- 19  
20 2. Floor penetrations by floor drains, tub drains or shower drains  
21 contained and located within the concealed space of a horizontal  
22 assembly do not require a T rating.
- 23  
24 3. Floor penetrations of maximum 4-inch (102 mm) nominal diameter  
25 penetrating directly into metal-enclosed electrical power switchgear  
26 do not require a T rating.
- 27  
28 4. Penetrations by non-ferrous conduits or pipes up to 4 inches (101.6  
29 mm) in diameter with the annular space protected with materials that  
30 have been demonstrated to prevent the passage of flame and hot  
31 gasses when the penetrations and penetrating materials are completely  
32 contained within a fire resistive assembly consisting of an approved  
33 fire rated wall assembly connected to an approved fire rated  
34 floor/ceiling assembly by an approved joint.
- 35

36 **901.5 Installation acceptance testing.** Fire detection and alarm systems, fire-  
37 extinguishing systems, fire hydrant systems, fire standpipe systems, fire pump systems,  
38 private fire service mains and all other *fire protection systems* and appurtenances thereto  
39 shall be subject to acceptance tests as contained in the installation standards and as

1 approved by the fire department. The fire department emergency prevention division  
2 shall be notified before any required acceptance testing.

3 **903.2.1.6 Assembly occupancies on roofs.** Where an occupied roof has an assembly  
4 occupancy with an *occupant load* exceeding 100 for Group A-2 and 300 for other Group  
5 A occupancies, all floors between the occupied roof and the level of exit discharge shall  
6 be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1  
7 (*NFPA 13 sprinkler systems*).

8 **903.2.8.3 Group R-4 Condition 2.** An *automatic sprinkler system* installed in  
9 accordance with Section 903.3.1.2 (*NFPA 13R sprinkler systems*) shall be permitted in  
10 Group R-4 Condition 2 occupancies.

11  
12 **903.3.1.1.1 Exempt locations.** When approved, automatic sprinklers shall not be  
13 required in the following rooms or areas where such rooms or areas are protected with an  
14 *approved* automatic fire detection system in accordance with Section 907.2 that will  
15 respond to visible or invisible particles of combustion. Sprinklers shall not be omitted  
16 from a room merely because it is damp, of fire-resistance-rated construction or contains  
17 electrical equipment.

- 18  
19 1. A room where the application of water, or flame and water, constitutes a  
20 serious life or fire hazard.
- 21  
22 2. Transformer rooms owned and operated by an electric utility, and separated  
23 from the remainder of the building by walls and floor/ceiling or roof/ceiling  
24 assemblies having a *fire-resistance rating* of not less than 2 hours. The  
25 automatic fire detection system for exempt locations is not required.
- 26  
27 3. Rooms or areas that are of noncombustible construction with wholly  
28 noncombustible contents.
- 29  
30 4. Fire service access elevator machine rooms and machinery spaces.
- 31  
32 5. Machine rooms, machinery spaces, control rooms and control spaces  
33 associated with occupant evacuation elevators designed in accordance with  
34 Section 3008 (*Occupant Evacuation Elevators*).
- 35  
36

37 **903.3.1.2.1 Balconies and decks.** Sprinkler protection shall be provided for exterior  
38 balconies, decks and ground floor patios of dwelling units and sleeping units where the

1 building is of Type V construction or of Type III construction if the balcony or deck is  
2 framed with wood, provided there is a roof or deck above. Sidewall sprinklers that are  
3 used to protect such areas shall be permitted to be located such that their deflectors are  
4 within 1 inch (25 mm) to 6 inches (152 mm) below the structural members and a  
5 maximum distance of 14 inches (356 mm) below the deck of the exterior balconies and  
6 decks that are constructed of open wood joist construction.

7 **903.3.1.2.3 Balcony closets.** Sprinkler protection shall be provided for all balcony  
8 closets.

9 **Section 903.3.5 Water supplies.** Water supplies for *automatic sprinkler systems* shall  
10 comply with this section and the standards referenced in Section 903.3.1 (*Standards*).  
11 Fire hydrant flow tests shall be in accordance with the Fire Code Section 507.4.  
12 Protection of potable water supplies shall be in accordance with the Fire Code Section  
13 507.6.

14  
15 **903.3.5.3 Water supplies designed for automatic sprinkler systems** shall provide a safety  
16 factor of ten (10) pounds per square inch gauge (PSIG) or ten (10) percent of the  
17 minimum required residual pressure, whichever is greater. The safety factor shall be  
18 based on the calculated system design flow and pressure.

19  
20 **Exception:** A safety factor less than those defined in this Section may be approved  
21 by the fire chief only if historical water supply data is available to demonstrate that  
22 reasonable expected fluctuations will not cause the water supply to fall below the  
23 system demand.

24  
25 **903.3.5.4 Hose Stream Demand.** The minimum calculated hose stream demand for Type  
26 V-B and Type V-A construction, as defined in the Building Code, shall be a minimum of  
27 250 Gallons Per Minute (GPM).

28  
29 **903.3.6 Hose threads.** Fire hose threads and fittings used in connection with *automatic*  
30 *sprinkler systems* shall be approved and shall be National Standard Hose Thread.

31 **903.3.9 Sprinkler System Flexible Hoses.** Flexible hoses used in automatic sprinkler  
32 systems shall be limited in length to a maximum of 6 feet. The extinguishing agent shall  
33 pass through a maximum of one 6 foot section before discharging from the sprinkler  
34 orifice (head). Approval of shop drawing submittals shall be required for all uses of  
35 flexible hose sprinkler piping and where more than one (1) flexible hose sprinkler drop is  
36 used in a remodel application the adequacy of the water supply shall be verified by  
37 hydraulic calculations.



1 **904.9 Halon systems.** Halogenated extinguishing systems shall be installed, maintained,  
2 and periodically inspected and tested in accordance with NFPA 12A and their listing.  
3 The conditions of approval of all Halon automatic fire-extinguishing systems shall  
4 include (i) a demonstration of need acceptable to the fire chief detailing a critical need for  
5 the system such as a direct effect on life safety that cannot be adequately addressed by  
6 other types of suppression systems, and (ii) an approved method of testing that does not  
7 include the intentional release of Halon gas.

8 **904.12 Commercial cooking systems.** The automatic fire-extinguishing system for  
9 commercial cooking systems shall be of a type recognized for protection of commercial  
10 cooking equipment and exhaust systems of the type and arrangement protected. Each pre-  
11 engineered automatic dry- and wet-chemical extinguishing system shall be tested in  
12 accordance with UL 300 and listed and labeled for its intended application. Other types  
13 of extinguishing systems shall be listed and labeled for specific use as protection for  
14 commercial cooking operations. The system shall be installed in accordance with this  
15 code, its listing and the manufacturer's installation instructions. Automatic fire  
16 suppression systems of the following types shall be installed in accordance with the  
17 referenced standard indicated, as follows:

- 18 1. Carbon-dioxide extinguishing systems, NFPA 12.
- 19 2. Automatic sprinkler system, NFPA 13.
- 20 3. Foam-water sprinkler system or foam-water spray systems, NFPA 16.
- 21 4. Dry-chemical extinguishing systems, NFPA 17.
- 22 5. Wet-chemical extinguishing systems, NFPA 17A.

23 **Exception 1:** Factory-built commercial cooking recirculating systems that are  
24 tested in accordance with UL 710B, and listed, labeled and installed in accordance  
25 with Section 303.1 of the Mechanical Code.

26 **Exception 2:** With the concurrence of the *Building Official*, commercial cooking  
27 equipment used intermittently for periods which total less than 6 hours per week  
28 may be served by a Type II ventilation hood without fixed fire suppression. A  
29 portable fire extinguisher rated for commercial cooking applications shall be  
30 provided.

31 **904.13 Domestic cooking systems in Group I-2 Condition 1.** In Group I-2 Condition 1  
32 occupancies where cooking facilities are installed in accordance with Section 407.2.6  
33 (*Nursing home cooking facilities*) of this code, the domestic cooking hood provided over  
34 the cooktop or range shall be equipped with an automatic fire-extinguishing system of a

1 type recognized for protection of domestic cooking equipment. Preengineered automatic  
2 extinguishing systems shall be tested in accordance with UL 300A and listed and labeled  
3 for the intended application. The system shall be installed in accordance with this code,  
4 its listing and the manufacturer's instructions.

5  
6 **Exception:** I-2 Foster Care facilities providing care for 6 or fewer children 2.5  
7 years of age or younger.  
8

9 **905.1 General.** Standpipe systems shall be provided in new buildings and structures in  
10 accordance with this Section. Fire hose threads used in connection with new fire  
11 standpipe systems shall be approved and shall be National Standard Hose Thread. Except  
12 as otherwise approved by the fire chief, existing standpipe fire hose threads shall be  
13 national standard hose thread. The location of fire department hose connections shall be  
14 approved. In buildings used for high-piled combustible storage, fire protection shall be in  
15 accordance with *International Fire Code*.

16 **905.1.1 Hose.** With the concurrence of the *Building Official*, hoses need not be installed  
17 or maintained on standpipes of any class when the occupancy does not provide training in  
18 the use of standpipe hose and the employees, residents, or other regular occupants of the  
19 occupancy are trained/instructed to evacuate and evacuation drills are conducted at  
20 intervals agreed on by the owner/agent and the Fire Department.

21 **905.3.4.1 Hose and cabinet.** If hose is installed, the 1½-inch (38 mm) hose connections  
22 shall be equipped with sufficient lengths of 1½-inch (38 mm) hose to provide fire  
23 protection for the stage area. Hose connections shall be equipped with an approved  
24 adjustable fog nozzle and be mounted in a cabinet or on a rack.

25 **905.4 Location of Class I standpipe hose connections.** Class I standpipe hose  
26 connections shall be provided in all of the following locations:

- 27 1. In every required *interior exit stairway*, a hose connection shall be provided  
28 for each story above and below grade. Hose connections shall be located at  
29 an intermediate landing between stories, unless otherwise *approved* by the  
30 fire code official.
- 31 2. On each side of the wall adjacent to the *exit* opening of a *horizontal exit*.

32 **Exception:** Where floor areas adjacent to a *horizontal exit* are  
33 reachable from an *interior exit stairway* hose connection by a 30-foot  
34 (9144 mm) hose stream from a nozzle attached to 100 feet (30 480

1 mm) of hose, a hose connection shall not be required at the *horizontal*  
2 *exit*.

- 3 3. In every *exit* passageway, at the entrance from the *exit* passageway to other  
4 areas of a building.

5 **Exception:** Where floor areas adjacent to an *exit* passageway are  
6 reachable from an *interior exit stairway* hose connection by a 30-foot  
7 (9144 mm) hose stream from a nozzle attached to 100 feet (30 480  
8 mm) of hose, a hose connection shall not be required at the entrance  
9 from the *exit* passageway to other areas of the building.

- 10 4. In covered mall buildings, adjacent to each exterior public entrance to the  
11 mall and adjacent to each entrance from an exit passageway or exit corridor  
12 to the mall. In open mall buildings, adjacent to each public entrance to the  
13 mall at the perimeter line and adjacent to each entrance from an exit  
14 passageway or exit corridor to the mall.

- 15 5. Where the roof has a slope less than four units vertical in 12 units horizontal  
16 (33.3-percent slope), a hose connection shall be located to serve the roof or  
17 at the highest landing of a stairway with stair access to the roof provided in  
18 accordance with Section 1011.12 (*Stairway to roof*). An additional hose  
19 connection shall be provided at the top of the most hydraulically remote  
20 standpipe for testing purposes.

- 21 6. Where the most remote portion of a nonsprinklered floor or *story* is more  
22 than 150 feet (45 720 mm) from a hose connection or the most remote  
23 portion of a sprinklered floor or *story* is more than 200 feet (60 960 mm)  
24 from a hose connection, the fire code official is authorized to require that  
25 additional hose connections be provided in *approved* locations.

26 **905.5.3 Class II system hose.** If installed, the minimum diameter for standpipe hose  
27 shall be 1½-inch (38 mm) and such hose shall be listed for this service.

28 **907.2 Where required - new buildings and structures.** An *approved* manual,  
29 automatic or manual and automatic fire alarm system installed in accordance with the  
30 provisions of this code and NFPA 72 shall be provided in new buildings and structures in  
31 accordance with Sections 907.2.1 (*Group A*) through 907.2.23 (*Battery rooms*) and  
32 provide occupant notification in accordance with Section 907.5 (*Occupant notification*  
33 *systems*), unless other requirements are provided by another section of this code. The fire  
34 alarm control panel or a full function remote annunciator shall be installed at the main  
35 entrance for use by fire department personnel.

1 A minimum of one manual fire alarm box shall be provided in an approved location to  
2 initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or  
3 water-flow detection devices. The automatic fire detectors shall be smoke detectors.  
4 Where other sections of this code allow elimination of fire alarm boxes due to sprinklers,  
5 a single fire alarm box shall be installed. The manual fire alarm box is required to provide  
6 a means for fire watch personnel to initiate an alarm during a sprinkler system  
7 impairment event. The manual fire alarm box may be located in an area that is accessible  
8 to the public. The manual fire alarm box is required to provide a means for fire watch  
9 personnel to initiate an impairment.

10 **Exceptions:**

- 11 1. The manual fire alarm box is not required for fire alarm systems  
12 dedicated to elevator recall control and supervisory service.
- 13 2. Automatic heat detection required by this section shall not be required  
14 if automatic sprinkler protection installed in accordance with Section  
15 903.3.1.1 (*NFPA 13 sprinkler systems*) or 903.3.1.2 (*NFPA 13R*  
16 *sprinkler systems*) is provided and connected to the building fire  
17 alarm system.
- 18 3. Where ambient conditions prohibit installation of automatic smoke  
19 detection, other approved automatic fire detection may be allowed.
- 20 4. Duct smoke detectors installed in accordance with applicable  
21 mechanical code requirements for stand-alone operation, located in  
22 separate lease\_spaces, occupied or vacant, of shell buildings need not  
23 be connected to the fire alarm control panels (FACP) where the ~~only~~  
24 FACP is only required for the sprinkler monitoring system.

25 **907.2.1.3 Electrical Shunt for Amplified Sound Conditions.** For venues with  
26 amplified music or sound systems, in Group A occupancies having an occupant load of  
27 300 or more, electrical shunts shall be provided to de-energize the music or sound  
28 systems upon alarm activation as necessary to demonstrate compliance with the audibility  
29 requirements of NFPA 72.

30 **907.2.3.1. Common Areas Within Day Care and Child Care Facility Occupancies.**  
31 Group E day care occupancies shall be provided a fire alarm system as required by  
32 sections 907.2.6.4 (*Common Areas within Day Care Occupancies*) and 907.2.3 (*Group*  
33 *E*).

34 **907.2.6.4 Common Areas within Day Care Occupancies.** Day care occupancies shall  
35 be protected by a fire alarm system which monitors smoke detectors installed in

1 accordance with this section, the listing of the detectors and NFPA 72. Detectors must be  
2 placed on each story in front of doors to the stairways and at no greater spacing than the  
3 detector's listed spacing in the corridors of all floors containing the day care facility.  
4 Detectors must also be installed in lounges, recreation areas and sleeping rooms in the  
5 day care occupancy and as required by the Building Code. Alarms shall be visible and  
6 audible throughout the day care facility.

7 **Exceptions:**

- 8 1. Day cares housed within a single room.
- 9 2. A Group E day care housed within and serving the students of an E  
10 occupancy, such as an after school program, summer program, or  
11 similar function, are permitted to comply with the alarm and detection  
12 requirements of section 907.2.3 (*Group E*).
- 13 3. Day cares serving less than 12 children when operated within the  
14 single family residence of the day care operator, provided that the  
15 dwelling is protected with interconnected hard wired smoke alarms  
16 located as required by this section and powered as required for a new  
17 home in accordance with the International Residential Code and  
18 NFPA 72. When such residential day cares serve hearing impaired  
19 children, parents, or guardians, the interconnected single station  
20 smoke alarms shall be listed for visual alarm service.
- 21 4. Single story day care occupancies serving 30 or fewer children with  
22 multiple remote at grade exits as defined by the Building Code may be  
23 provided with a smoke detection system complying with the State of  
24 Texas licensing standards provided that the operation of any detection  
25 device will cause the operation of an alarm device within every area  
26 listed above. When such small day cares serve hearing impaired  
27 children, parents, or guardians, the alarm signals shall be produced by  
28 devices listed for visual alarm service.

29 **907.2.8.2 Automatic smoke detection system.** An automatic smoke detection system  
30 that activates the occupant notification system in accordance with Section 907.5  
31 (*Occupant notification systems*) shall be installed throughout all group R-1 occupancies.  
32 Listed system-type automatic detectors shall be installed within interior corridors serving  
33 sleeping units and unseparated areas such as recreational rooms, laundry rooms, and  
34 similar areas served by interior corridors providing access to and egress from sleeping  
35 units.

1           **Exception:** An automatic smoke detection system is not required in buildings that  
2 do not have interior corridors serving sleeping units and where each sleeping unit  
3 has a means of egress door opening directly to an exit or to an exterior exit access,  
4 an egress balcony or similar exit access that leads directly to an exit.

5           **907.2.9.1 Manual and automatic fire alarm system.** A manual and automatic fire alarm  
6 system that activates the occupant notification system in accordance with 907.5  
7 (*Occupant notification systems*) shall be installed in Group R-2 occupancies where any of  
8 the following apply:

- 9           1.     Any *dwelling unit* or *sleeping unit* is located three or more stories above the  
10 lowest *level of exit discharge*.
- 11           2.     Any *dwelling unit* or *sleeping unit* is located more than one story below the  
12 highest *level of exit discharge* of *exits* serving the *dwelling unit* or *sleeping*  
13 *unit*.
- 14           3.     The building contains more than 16 *dwelling units* or *sleeping units*.

15 Listed system-type automatic detectors shall be installed within interior corridors serving  
16 as the primary access and egress for dwelling units, and unseparated common areas such  
17 as recreational room, laundry rooms and similar areas.

18           **Exceptions:**

- 19           1.     A fire alarm system is not required in buildings not more than two  
20 stories in height where all *dwelling units* or *sleeping units* and  
21 contiguous *attic* and crawl spaces are separated from each other and  
22 public or common areas by at least 1-hour *fire partitions* and each  
23 *dwelling unit* or *sleeping unit* has an *exit* directly to a *public way*,  
24 *egress court* or *yard*.
- 25           2.     Manual fire alarm boxes are not required throughout the building  
26 when all the following conditions are met:
- 27           2.1.    The building is equipped throughout with an automatic  
28 sprinkler system in accordance with Section 903.3.1.1 (*NFPA*  
29 *13 sprinkler systems*) or Section 903.3.1.2 (*NFPA 13R sprinkler*  
30 *systems*);
- 31           2.2.    The notification appliances will automatically activate  
32 throughout the notification zones upon sprinkler water flow;  
33 and

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3. A separate 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 903.3.1.1 (*NFPA 13 sprinkler systems*) or 903.3.1.2 (*NFPA 13R sprinkler systems*), provided that sprinkler system activation results in a local alarm designed to notify all occupants and *dwelling units* have a means of egress door opening directly to an exterior exit access that leads directly to the exists or are served by open ended *corridors* as defined in Section 202 (*Definitions*) and designed in accordance with Section 1027.6 (*Exterior exit stairway and ramp protection*), exception 3.

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**907.5.2.1.1 Average sound pressure.** The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of not less than 60 seconds, whichever is greater, in every occupiable space and occupiable balcony within the building.

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**907.6.2.1 Protection of fire alarm control unit and notification power supplies.** In areas that are not continuously occupied, a single smoke detector shall be provided at the location of each fire alarm control unit, notification appliance circuit power extenders, and supervising station transmitting equipment.

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**Exceptions:**

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1. Where ambient conditions prohibit installation of automatic smoke detection, when approved, a heat detector shall be permitted.

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**907.6.6 Monitoring.** Fire alarm systems required by this chapter or by the International Fire Code shall be monitored by an approved supervising station in accordance with NFPA 72, or by a local alarm which gives audible and visual signals at a constantly attended location. Reporting procedures and personnel training records for local alarm systems monitored at a constantly attended location shall be maintained for review and approval by the Fire Department.

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**Exception:** Supervisory service is not required for:

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1. Single- and multiple-station smoke alarms required by Section 907.2.11 (*Single- and multiple-station smoke alarms*).
  2. Automatic sprinkler systems in one- and two-family dwellings.

1 **907.6.7 Annunciation and control.** The main fire alarm control panel or an full function  
2 remote annunciator shall be install at the main entrance or at an approved location near  
3 the main entrance of buildings with fire alarm systems.

4 **909.5 Smoke barrier construction.** *Smoke barriers* required for passive smoke control  
5 and a smoke control system using the pressurization method shall comply with Section  
6 709 (*Smoke Barriers*). Smoke barriers shall be constructed and sealed to limit leakage  
7 areas exclusive of protected openings. The maximum allowable leakage area shall be the  
8 aggregate area calculated using the following leakage area ratios:

- 9 1. Exterior Walls  $A/A_w = 0.00035$  (includes construction cracks, and cracks  
10 around windows and doors)
- 11 2. Stairwell walls:  $A/A_w = 0.00035$  (includes construction cracks but not cracks  
12 around windows or doors)
- 13 3. Elevator shaft walls:  $A/A_w = 0.0018$  (includes construction cracks but not  
14 cracks around doors)
- 15 4. Floors:  $A/A_F = 0.00017$  (includes construction cracks and gaps around  
16 penetrations)

17 where:

18  $A =$  Total leakage area, square feet ( $m^2$ )

19  $A_F =$  Unit floor or roof area of barrier, square feet ( $m^2$ )

20  $A_w =$  Unit wall area of barrier, square feet ( $m^2$ )

21 The leakage area ratios shown do not include openings due to gaps around doors and  
22 operable windows. The total leakage area of the *smoke barrier* shall be determined in  
23 accordance with Section 909.5.1 (*Total leakage area*) and tested in accordance with  
24 Section 909.5.2 (*Testing of leakage area*).

25 **909.6.3 Pressurized stairways and elevator hoistways.** Where stairways or elevator  
26 hoistways are pressurized, such pressurization systems shall comply with Section 909  
27 (*Smoke Control Systems*) as smoke control systems, in addition to the requirements of  
28 909.21 of the *International Fire Code*.

29 **909.10.2 Ducts.** Duct materials and joints shall be capable of withstanding the probable  
30 temperatures and pressures to which they are exposed as determined in accordance with  
31 Section 909.10 (*Equipment*). Shafts constructed of gypsum board or gypsum panel  
32 products are not allowed. Ducts shall be constructed and supported in accordance with  
33 the Mechanical Code. Ducts shall be leak tested to 1.5 times the maximum design  
34 pressure in accordance with nationally accepted practices. Measured leakage shall not



1 exceed 5 percent of design flow. Results of such testing shall be a part of the  
2 documentation procedure. Ducts shall be supported directly from fire-resistance-rated  
3 structural elements of the building by substantial, noncombustible supports.

4 **Exception:** Flexible connections, for the purpose of vibration isolation, complying  
5 with the Mechanical Code and that are constructed of *approved* fire-resistance-  
6 rated materials.

7 **909.12.4 Automatic Control.** Where completely automatic control is required or used,  
8 the automatic-control sequences shall be initiated from an appropriately zoned *automatic*  
9 *sprinkler system* complying with Section 903.3.1.1 (*NFPA 13 sprinkler systems*), an  
10 automatic smoke detection system complying with 907.2.13 (*High-rise buildings*),  
11 manual controls that are readily accessible to the fire department and any smoke detectors  
12 required by the engineering analysis.

13 **909.18.8 Testing for smoke control.** Smoke control systems shall be tested by a special  
14 inspector.

15 **909.20 Smokeproof enclosures.** Where required by Section 1023.11 (*Smokeproof*  
16 *enclosures*), a smokeproof enclosure shall be constructed in accordance with this section.  
17 A smokeproof enclosure shall consist of a pressurized *interior exit stairway* or *ramp* that  
18 is enclosed in accordance with the applicable provisions of Section 1023 (*Interior Exit*  
19 *Stairways and Ramps*) and a pressurized vestibule meeting the requirements of this  
20 section. Where access to the roof is required by the *International Fire Code*, such access  
21 shall be from the smokeproof enclosure where a smokeproof enclosure is required.

22 **909.20.1 Access.** Access to the stairway or ramp shall be by way of a vestibule. The  
23 minimum dimension of the vestibule shall be not less than the required width of the  
24 corridor leading to the vestibule but shall not have a width of less than 44 inches (1118  
25 mm) and shall not have a length of less than 72 inches (1829 mm) in the direction of  
26 egress travel.

27 **909.20.2 Vestibule doors.** The door assembly from the building into the vestibule shall  
28 be a fire door assembly complying with Section 716.5.3 (*Door assemblies in corridors*  
29 *and smoke barriers*). The door assembly from the vestibule to the stairway or ramp shall  
30 not have less than a 90-minute fire protection rating and shall meet the requirements for a  
31 smoke door assembly in accordance with Section 716.5.3 (*Door assemblies in corridors*  
32 *and smoke barriers*). The door shall be installed in accordance with NFPA 105.

33 **909.20.3 Construction.** The smokeproof enclosure shall be separated from the  
34 remainder of the building by not less than 2-hour fire barriers constructed in accordance  
35 with Section 707 (*Fire Barriers*) or horizontal assemblies constructed in accordance with  
36 Section 711 (*Horizontal Assemblies*), or both. Openings are not permitted other than the

1 required means of egress doors. The vestibule shall be separated from the stairway or  
2 ramp by not less than 2-hour fire barriers constructed in accordance with Section 707  
3 (*Fire Barriers*) or horizontal assemblies constructed in accordance with IBC Section 711  
4 (*Horizontal Assemblies*), or both.

5 **909.20.4 Door closers.** Doors in a smokeproof enclosure shall be self-closing and self-  
6 latching.

7 **909.20.5 Stair pressurization system.** The stairs shall be pressurized to accommodate  
8 the conditions of all doors closed and the ground floor exterior stair door open with all  
9 other doors closed. The maximum allowable door opening force shall be 30 pounds with  
10 the system operating. Validation of the pressurization fan sizes shall include the analysis  
11 described in Section 909.4 (*Analysis*) under both winter and summer conditions and shall  
12 use the allowable leakage ratios of Section 909.5 (*Smoke barrier construction*). A relief  
13 vent sized at 5,000 cfm and a 0.35 inch w.g. (field adjustable) opening point shall be  
14 provided at the upper portion of the stair shaft. The system shall have multiple injection  
15 points into the stairwell. Use of algebraic equations for pressurization fan sizing shall  
16 only be acceptable for simple idealized buildings. Complex systems for mixed-use high  
17 rises and very tall buildings shall be designed using a network model.

18 **909.20.6 Pressurized vestibules.** The minimum pressure difference within the vestibule  
19 with the doors closed shall be 0.05 inch w.g. positive pressure relative to the floor and  
20 0.05 inch w.g. negative relative to the stairwell for a total differential of +0.10 inch w.g.  
21 from the stairwell to the corridor/floor.

22 **909.20.7 Standby power.** Mechanical vestibule and stairway and ramp shaft ventilation  
23 systems and automatic fire detection systems shall be provided with standby power in  
24 accordance with Section 2702 (*Emergency and Standby Power Systems*).

25 **909.20.8 Acceptance and testing.** Before the mechanical equipment is approved, the  
26 system shall be tested in the presence of the fire official to confirm that the system is  
27 operating in compliance with these requirements.

28 **912.1.1 Number of Hose Connections.** Fire department connections (FDC's) shall  
29 include a minimum of two (2) 2½ inch (63.5 mm) female National Standard Hose Thread  
30 (NST) inlet connections. Where system design flow rates exceed 500 gpm (1,893 lpm), a  
31 minimum of one FDC inlet connection shall be installed for each 250 gpm (946 lpm) or  
32 portion thereof.

33 **Exception:** A single 2½ inch FDC inlet shall be provided for NFPA 13R  
34 automatic sprinkler systems.

35 **912.4 Access.** Immediate access to fire department connections shall be maintained at all  
36 times and without obstruction by fences, bushes, trees, walls or any other fixed or

1 moveable object for a minimum of 3 feet (914 mm). Access to fire department  
2 connections shall be *approved* by the fire chief.

3 **Exception:** Fences, where provided with an access gate equipped with a sign  
4 complying with the legend requirements of this section and a means of emergency  
5 operation. Locks, if installed shall be openable by use of a fire department Knox  
6 Key. The gate and means of emergency operation shall be approved by the fire  
7 chief and maintained operational at all times.

8 **912.4.1 Locking fire department connection caps.** The fire code official is authorized  
9 to require locking caps on fire department connections for water-based fire protection  
10 systems. The locking caps shall be manufactured by an approved manufacturer and used  
11 and maintained as designed.

12 **912.4.1.2 Locking fire department connection caps in existing buildings or**  
13 **structures.** The fire code official is authorized to require locking caps on fire department  
14 connections (FDC) for water-based fire protection systems serving existing buildings  
15 where the fire department has observed obstructions placed in the FDC or where the FDC  
16 is missing caps. The locking caps shall be manufactured by an approved manufacturer  
17 and used and maintained as designed.

18 **912.5.1 Fire Department Connection Placard – for existing structures.** In addition to  
19 the signage required in 912.5 (*Signs*), an all-weather, permanent, system placard shall be  
20 placed in a visible location adjacent to the fire department connection on all structures  
21 with a fire protection system requiring pressures exceeding 150psi. The placard text shall  
22 be white reflective letters, 1 ½ inch minimum height, on either a red or black background.  
23 The placard shall contain the following information.

- 24 1. Required system pressure at FDC inlet.
  - 25 2. Area of building served by FDC
  - 26 3. System PRV locations
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**TABLE 1004.1.2  
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

<b>FUNCTION OF SPACE</b>	<b>OCCUPANT LOAD FACTOR<sup>a</sup></b>
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport Terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Exhibit Gallery and Museum	30 net
Assembly with fixed seats	See Section 1004.4
Assembly without fixed seats	
Concentrated	7 net
Standing space or queuing space	7 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
Group H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Mall buildings—covered and open	See section 402.8.2
Mercantile	60 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

a. Floor area in square feet per occupant.

1 **1006.3.2 Single exits.** A single *exit* or access to a single *exit* shall be permitted from any  
2 *story* or occupied roof where one of the following conditions exists:  
3

- 4 1. The *occupant load*, number of *dwelling units* and *exit access* travel distance  
5 do not exceed the values in Table 1006.3.2(1) or 1006.3.2(2).  
6
- 7 2. Rooms, areas and spaces complying with Section 1006.2.1 (Egress based on  
8 occupant load and common) path of egress travel distance with *exits* that  
9 discharge directly to the exterior at the *level of exit discharge*, are permitted  
10 to have one *exit* or access to a single *exit*.  
11
- 12 3. Parking garages where vehicles are mechanically parked shall be permitted  
13 to have one *exit* or access to a single *exit*.  
14
- 15 4. Group R-3 and R-4 occupancies shall be permitted to have one *exit* or access  
16 to a single *exit*.  
17
- 18 5. Individual single-story or multistory *dwelling units* shall be permitted to  
19 have a single exit or access to a single *exit* from the *dwelling unit* provided  
20 that both of the following criteria are met:  
21
- 22 5.1. The *dwelling unit* complies with Section 1006.2.1 (*Egress*  
23 *based on occupant load and common path of egress travel*  
24 *distance*) as a space with one *means of egress*.  
25
- 26 5.2. Either the *exit* from the *dwelling unit* discharges directly to the  
27 exterior at the *level of exit discharge*, or the *exit access* outside  
28 the dwelling unit's entrance door provides access to not less  
29 than two approved independent *exits*.  
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- 31 6. An elevator lobby may have one exit if the use of the exit does not require  
32 keys, tools, special knowledge or effort to operate.  
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**TABLE 1006.3(1)**  
**STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM ACCESS DISTANCE	EXIT TRAVEL
Basement, first or second story above grade plane	R-2 <sub>a, b</sub>	2 dwelling units	125 feet	
Third story above grade plane and higher	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 1030.
- b. This table is used for R-2 occupancies consisting of *dwelling units*. For R-2 occupancies consisting of *sleeping units*, use Table 1006.3(2).

**TABLE 1006.3(2)**  
**STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS PER STORY	MAXIMUM ACCESS DISTANCE	EXIT TRAVEL
First story above grade plane	A, B <sub>b</sub> , E, F <sub>b</sub> , M, U, S <sub>b</sub>	49 occupants	75 feet	
	H-2, H-3	3 occupants	25 feet	
	H-4, H-5, I, R-1, R-2 <sub>a, c</sub> , R-4	10 occupants	75 feet	
	S <sub>b, d</sub>	29 occupants	100 feet	
Second story above grade plane or first story below grade plane	R-1, R-2 <sub>a, c</sub> , R-4, B, F, M, S <sub>d</sub> , H <sub>e</sub>	10 occupants	75 feet	
Third story above grade plane and higher	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 1030.
- 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 *exit access* 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 1006.3(1).
- d. The length of *exit access* travel distance in a Group S-2 *open parking garage* shall be not more than 100 feet.
- e. Story below grade is not allowed.

**1007.1.1. Two exits or exit access doorways.** Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed at a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway.

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**Exceptions:**

1. When interior exit stairways are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1018 (*Corridors*), the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. For an exit and exit access doorway that is not the primary exit access into a required exit stairway and that is located in a building that is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 (*NFPA 13 sprinkler systems*) or 903.3.1.2 (*NFPA 13R sprinkler systems*), the separation distance of the exit door or exit access doorway shall be not less than one-third of the length of the maximum overall diagonal dimension of the area served.

14 **1008.2.1 Illumination level under normal power.** The *means of egress* illumination level shall be not less than 1 footcandle (11 lux) at the walking surface.

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17 **Exception:** For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances by one of the following methods provided that the required illumination is automatically restored upon activation of a premises' fire alarm system:

- 18 1. Externally illuminated walking surfaces shall be permitted to be illuminated to not less than 0.2 footcandle (2.15 lux).
- 19 2. Steps, landings and the sides of ramps shall be permitted to be marked with self-luminous materials in accordance with Sections 1025.2.1, 1025.2.2 and 1025.2.4 by systems listed in accordance with UL 1994; or in accordance with Section 1025.6.

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30 **1009.3 Stairways.** In order to be considered part of an accessible means of egress, a stairway between stories shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from an area of refuge complying with Section 1009.6 (*Areas of refuge*). Exit access stairways that connect levels in the same story are not permitted as part of an accessible means of egress.

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**Exceptions:**

1. Exit access stairways providing means of egress from mezzanines are permitted as part of an accessible means of egress.
2. Except for a building governed by Section 403 (*High-Rise Buildings*) or 405 (*Underground Buildings*), the clear width of 48 inches (1219 mm) between handrails is not required in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 (*NFPA 13 sprinkler systems*) or 903.3.1.2 (*NFPA 13R sprinkler systems*).
3. Areas of refuge are not required at exit access stairways where two-way communication is provided at the elevator landing in accordance with Section 1009.8 (*Two-way communication*).
4. Except for a building governed by Section 403 (*High-Rise Buildings*) or 405 (*Underground Buildings*), the Areas of refuge are not required at stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 (*NFPA 13 sprinkler systems*) or 903.3.1.2 (*NFPA 13R sprinkler systems*).
5. Areas of refuge are not required at stairways serving open parking garages.
6. Areas of refuge are not required for smoke-protected assembly seating areas complying with Section 1029.6.2 (*Smoke-protected assembly seating*).
7. Areas of refuge are not required for stairways accessed from a refuge area in conjunction with a horizontal exit.

**1010.1.2 Door swing.** Egress doors shall be of the pivoted or side-hinged swinging type.

**Exceptions:**

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.



3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1010.1.4.1 (*Revolving doors*).
6. In other than Group H-1, H-2, H-3 and H-4 occupancies, horizontal sliding doors complying with Section 1010.1.4.3 (*Special purpose horizontal sliding, accordion or folding doors*) are permitted in a means of egress.
7. Power-operated doors in accordance with Section 1010.1.4.2 (*Power-operated doors*).
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. In other than Group H occupancies, manually operated horizontal sliding doors are permitted in a means of egress from spaces with an occupant load of 10 or less.

**1010.1.4.3. Special purpose horizontal sliding, accordion or folding doors.** In other than Group H-1, H-2, H3 and H-4 occupancies, special purpose horizontal sliding, accordion or folding door assemblies permitted to be a component of a means of egress in accordance with Exception 6 to Section 1010.1.2 (*Door swing*) shall comply with all of the following criteria:

1. The doors shall be power operated and shall be capable of being operated manually in the event of power failure.
2. The doors shall be openable by a simple method from both sides without special knowledge or effort.
3. The force required to operate the door shall not exceed 30 pounds (133 N) to set the door in motion and 15 pounds (67 N) to close or open the door to the minimum required width.
4. The door shall be openable with a force not to exceed 15 pounds (67 N) when a force of 250 pounds (1100 N) is applied perpendicular to the door adjacent to the operating device.
5. The door assembly shall comply with the applicable fire protection rating and, where rated, shall be self-closing or automatic closing by smoke

1 detection in accordance with Section 716.5.9.3 (*Smoke-activated doors*),  
2 shall be installed in accordance with NFPA 80 and shall comply with  
3 Section 716 (*Door closing*).

- 4 6. The door assembly shall have an integrated standby power supply.
- 5 7. The door assembly power supply shall be electrically supervised.
- 6 8. The door shall open to the minimum required width within 10 seconds

7  
8 **1010.1.9.11 Stairway doors.** Interior *stairway means of egress* doors shall be openable  
9 from both sides without the use of a key or special knowledge or effort.

10  
11 **Exceptions:**

- 12  
13 1. *Stairway* discharge doors shall be openable from the egress side and  
14 shall only be locked from the opposite side.
- 15  
16 2. This section shall not apply to doors arranged in accordance with  
17 Section 403.5.3 (*Stairway door operation*).
- 18  
19 3. In *stairways* serving two stories or greater in a building not classified  
20 as a high-rise by Section 403 (*High-Rise Buildings*), doors are  
21 permitted to be locked from the side opposite the egress side, provided  
22 they are openable from the egress side. The exit doors shall be  
23 capable of being unlocked simultaneously without unlatching upon a  
24 signal from and approved fire department key switch. The key switch  
25 shall be located at the exterior opening of the stair or at the main  
26 entrance to the building.
- 27  
28 4. *Stairway exit* doors shall be openable from the egress side and shall  
29 only be locked from the opposite side in Group B, F, M and S  
30 occupancies where the only interior access to the tenant space is from  
31 a single *exit stairway* where permitted in Section 1006.3.2 (*Single*  
32 *exits*).
- 33  
34 5. *Stairway exit* doors shall be openable from the egress side and shall  
35 only be locked from the opposite side in Group R-2 occupancies  
36 where the only interior access to the *dwelling unit* is from a single *exit*  
37 *stairway* where permitted in Section 1006.3.2 (*Single exits*).

1 **1020.4 Dead ends.** Where more than one exit or exit access doorway is required, the exit  
2 access shall be arranged such that there are no dead ends in corridors more than 20 feet  
3 (6,096 mm) in length.

4 **Exceptions:**

- 5 1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see  
6 Section 308.5 (*Group I-3*)), the dead end in a corridor shall not exceed  
7 30 feet (9,144 mm).
- 8 2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2, R-4, S and U,  
9 where the building is equipped throughout with an automatic sprinkler  
10 system in accordance with Section 903.3.1.1 (*NFPA 13 sprinkler*  
11 *systems*), the length of the dead-end corridors shall not exceed 50 feet  
12 (15,240 mm).
- 13 3. A dead-end corridor shall not be limited in length where the length of  
14 the dead-end corridor is less than 2.5 times the least width of the dead-  
15 end corridor.

16 **[F] 1025.6 Active Egress Path Illumination System.** An active egress path illumination  
17 system shall be in accordance with Sections 1025.6.1 (*Luminaries*) through 1025.6.6.3  
18 (*Instrumentation and Annunciation*). Designs complying with this section are equivalent  
19 to the requirements in Sections 1025.1 (*General*) through 1025.5 (*Illumination*).

20 The level of the egress illumination shall be in accordance with Section 1008(*Means of*  
21 *Egress Illumination*).

22 **[F] 1025.6.1 Luminaries.** Luminaries shall be listed for emergency illumination and  
23 contain a lamp with an integral battery, battery charger and manual test switch and  
24 comply with Article 700 of the Electrical Code. The unit equipment shall be housed in a  
25 sealed and gasketed fixture rated for indoor wet locations. Luminaire batteries shall be  
26 listed for use as a secondary power supply in accordance with UL 924. Luminaires shall  
27 not be equipped with an occupancy sensor. Every luminaire shall have a test switch to  
28 confirm the lamp's availability for service when operating on primary or emergency  
29 power.

30 **EXCEPTION:** The integral battery and battery charger is not required when  
31 luminaires are connected to a Stored Energy Emergency Power Supply System  
32 (SEPSS) complying with Section 1025.6.5 (*Stored Energy Emergency Power*  
33 *Supply System*).

34 **[F] 1025.6.2 Primary and Secondary Electrical Power.** A primary and secondary  
35 power source shall be provided for each luminaire. Primary power shall be a dedicated

1 electrical branch circuit supplied from utility power. Secondary power shall be an branch  
2 circuit connected to an Emergency Power system complying with the *International Fire*  
3 *Code* Section 604.2.12. The primary and emergency source for each luminaire shall be  
4 connected to a dedicated primary and emergency power branch circuit.

5 **[F] 1025.6.3 Location.** Luminaries for the active egress path illumination system shall be  
6 located at each intermediate landing and stair landing within each interior exit stairway.

7 **[F] 1025.6.4 Functional Test and Records.** The luminaries shall be tested in accordance  
8 with *International Fire Code* Section 604.6 except that the frequency of activation tests  
9 shall be weekly. Documentation records for the location of each luminaire and the results  
10 of the weekly activation and annual power tests shall be in accordance with *International*  
11 *Fire Code* Section 604.6. Records shall be available to the fire code official upon request.  
12 Operational testing and maintenance reports produced by the SEPSS are permitted  
13 provided they comply with NFPA 110 Chapter 8.

14 **[F] 1025.6.5 Lamp Failure.** Luminary lamps that do not operate because of a test or an  
15 incident shall be replaced. Any battery that cannot operate a lamp for a minimum of 90  
16 minutes shall be replaced.

17 **[F] 1025.6.6 Stored Energy Emergency Power Supply System.** When provided, the  
18 SEPSS with an integral alternating current – to – direct current inverter shall comply with  
19 *International Fire Code* Section 604.1.2 and be listed in accordance with UL 924. The  
20 SEPSS shall be designed as Level 1 system in accordance with NFPA 111

21 The SEPSS shall be located in the room separated from the remainder of the building by  
22 a minimum 1-hour fire-resistance rated construction and required opening protectives in  
23 accordance with the this code. The design temperature and humidity of the room housing  
24 the SEPPS shall be in accordance the manufacture installation instructions.

25 SEPSS are prohibited inside a Fire Command Center.

26 **[F] 1025.6.6.1 Load Carrying Capacity.** Battery systems complying with NFPA 111  
27 shall be used to supply the emergency power to luminaires serving the active egress path  
28 illumination system. Batteries shall be rated for a minimum 90 minute discharge time and  
29 sized based on the total combined load of luminaires connected to the SEPSS.

30 **[F] 1025.6.6.2 Required SEPSS.** In buildings where the highest occupied floor is less  
31 than or equal to 120 feet above the lowest level of fire department access, one SEPSS  
32 shall be provided that complies with Section 1025.6.6 (*Stored Energy Emergency Power*  
33 *Supply System*) for all required interior exit stairways. A SEPSS shall be provided for  
34 each required interior exit stairway that serves floors greater than 120 feet above the  
35 lowest level of fire department access.

1 [F] **1025.6.6.3 Instrumentation and Annunciation.** Instrumentation and annunciation  
2 shall be in accordance with NFPA 111. A remote annunciator displaying the status of the  
3 SEPSS shall be provided in the Fire Command Center. The SEPSS and its annunciator  
4 shall display the following information and its function shall be identified in the Fire  
5 Command Center:

- 6 1. Electrical load on utility power
- 7 2. Electrical load on emergency power
- 8 3. Output circuit breaker open
- 9 4. Output overload or overcurrent
- 10 5. High temperature
- 11 6. Emergency conversion equipment is bypassed
- 12 7. Low battery capacity
- 13 8. Any major or minor alarms prescribed by the SEPSS manufacturer

14  
15 **1027.3 Open side.** *Exterior exit stairways and ramps* serving as an element of a required  
16 *means of egress* shall be open on not less than two sides, except for required structural  
17 columns, beams, *handrails* and *guards*. The open area shall not be less than 50% of the  
18 perimeter of the stairs excluding the main landing. The open area shall be so distributed  
19 as to minimize the accumulation of smoke or toxic gases.

20  
21 **1101.2 Design.** Buildings and facilities that are not included in the scope of the Texas  
22 Accessibility Standards (TAS) shall be designed and constructed to be accessible in  
23 accordance with the Building Code and ICC A117.1. Buildings and facilities included in  
24 the scope of TAS shall be designed and constructed to be accessible in accordance with  
25 the Texas Accessibility Standards of the Architectural Barriers Act, Article 9102, Texas  
26 Civil Statutes, as amended. Where conflicts occur between this chapter and any scoping  
27 provisions of the Texas Accessibility Standards, the more stringent requirement shall  
28 apply.

29  
30 **1104.1 Site arrival points.** At least one *accessible route* within the *site* shall be provided  
31 from public transportation stops, *accessible parking*, *accessible passenger loading zones*,  
32 and public streets or sidewalks to the *accessible* building entrance served. An *accessible*  
33 *route* shall be located so that a person using the route is not required to travel in a traffic  
34 lane or behind a parked vehicle (except the vehicle the person operates or in which the  
35 person is a passenger).

36  
37 **Exception:** Other than in buildings or facilities containing or serving Type A or  
38 Type B units, an accessible route shall not be required between site arrival points

1 and the building or facility entrance if the only means of access between them is a  
2 vehicular way not providing for pedestrian access.  
3

4 **1106.6 Location.** Accessible parking spaces shall be located on the shortest accessible  
5 route of travel from adjacent parking to an accessible building entrance. An accessible  
6 route shall be located so that a person using the route is not required to travel in a traffic  
7 lane or behind a parked vehicle (except the vehicle the person operates or in which the  
8 person is a passenger). Accessible parking spaces shall be dispersed among the various  
9 types of parking facilities provided. In parking facilities that do not serve a particular  
10 building, accessible parking spaces shall be located on the shortest route to an accessible  
11 pedestrian entrance to the parking facility. Where buildings have multiple accessible  
12 entrances with adjacent parking, accessible parking spaces shall be dispersed and located  
13 near the accessible entrances.  
14

15 **Exceptions:**

- 16
- 17 1. In multilevel parking structures, van-accessible parking spaces are  
18 permitted on one level.
  - 19 2. Accessible parking spaces shall be permitted to be located in different  
20 parking facilities if substantially equivalent or greater accessibility is  
21 provided in terms of distance from an accessible entrance or  
22 entrances, parking fee and user convenience.

23 **1107.6.1.2 Type B units.** In structures with three or more dwelling units or sleeping units  
24 intended to be occupied as a residence, every dwelling unit and sleeping unit intended to  
25 be occupied as a residence shall be a Type B unit.  
26

27 **Exception:** The number of Type B units is permitted to be reduced in accordance  
28 with Section 1107.7 (*General exceptions*).  
29

30 **1107.6.2.2.2 Type B units.** Where there are three or more dwelling units or sleeping  
31 units intended to be occupied as a residence in a single structure, every dwelling unit and  
32 sleeping unit intended to be occupied as a residence shall be a Type B unit.  
33

34 **Exception:** The number of Type B units is permitted to be reduced in accordance  
35 with Section 1107.7 (*General exceptions*).  
36

1 **1107.6.2.3.2 Type B units.** Where there are three or more dwelling units or sleeping  
2 units intended to be occupied as a residence in a single structure, every dwelling unit and  
3 every sleeping unit intended to be occupied as a residence shall be a Type B unit.  
4

5 **Exception:** The number of Type B units is permitted to be reduced in accordance  
6 with Section 1107.7 (*General exceptions*).  
7

8 **1107.6.3 Group R-3.** In Group R-3 occupancies where there are three or more dwelling  
9 units or sleeping units intended to be occupied as a residence in a single structure, every  
10 dwelling unit and sleeping unit intended to be occupied as a residence shall be a Type B  
11 unit. Bedrooms within congregate living facilities shall be counted as *sleeping units* for  
12 the purpose of determining the number of units.  
13

14 **Exception:** The number of Type B units is permitted to be reduced in accordance  
15 with Section 1107.7 (*General exceptions*).  
16

17 **1107.6.4.2 Type B units.** In structures with three or more dwelling units or sleeping units  
18 intended to be occupied as a residence, every dwelling unit and sleeping unit intended to  
19 be occupied as a residence shall be a Type B unit.  
20

21 **Exception:** The number of Type B units is permitted to be reduced in accordance  
22 with Section 1107.7 (*General exceptions*).  
23

24 **1110.1 General.** Recreational facilities shall be provided with *accessible* features in  
25 accordance with Sections 1110.2 (*Facilities serving Group R-2, R-3 and R-4*  
26 *occupancies*) through 1110.4 (*Recreational facilities*). Elements of recreational and sport  
27 facilities not covered by the design standards in Section 1101.2 (*Design*) shall be  
28 designed in accordance with the “ADA and ABA Accessibility Guidelines for Buildings  
29 and Facilities, Chapter 10: Recreational Facilities”, published by the United States  
30 Access Board.  
31

32 **1301.1 Energy Efficiency.** Buildings shall be designed and constructed in accordance  
33 with the Energy Code, adopted by Chapter 25-12, Article 12 (*Energy Code*).  
34

35 **1607.7.2 Fire truck and emergency vehicles.** Where a structure or portions of a  
36 structure are accessed and loaded by fire department access vehicles and other similar  
37 emergency vehicles, the structure shall be designed as specified in the Fire Code Section  
38 503.2.6 Bridges and elevated surfaces.

1 **SECTION 1612 FLOOD LOADS**

2 **1612.1 General.** Within *flood hazard areas* as established in Section 1612.3,  
3 (*Establishment of flood hazard areas*) all new construction and alterations of buildings,  
4 structures and portions of buildings and structures, including substantial improvement  
5 and restoration of substantial damage to buildings and structures, shall be designed and  
6 constructed to resist the effects of flood hazards and flood loads. When new construction  
7 constitutes a substantial improvement or restoration of substantial damage all aspects of  
8 the existing structure shall be brought into compliance with the requirements for new  
9 construction for flood design. All elevation requirements noted in this ordinance shall be  
10 documented using the Elevation Certificate, FEMA 81-31, and shall be certified by a  
11 registered professional engineer, surveyor, or architect, and shall be submitted to the  
12 Floodplain Administrator.

13 **1612.2 Definitions.** The following terms are defined in Chapter 2:

14 **BASE FLOOD**

15 **BASE FLOOD ELEVATION**

16 **BASEMENT**

17 **DESIGN FLOOD**

18 **DESIGN FLOOD ELEVATION**

19 **DRY FLOODPROOFING**

20 **EXISTING STRUCTURE**

21 **FLOOD or FLOODING**

22 **FLOOD DAMAGE-RESISTANT MATERIALS**

23 **FLOOD HAZARD AREA**

24 **FLOOD INSURANCE RATE MAP (FIRM)**

25 **FLOOD INSURANCE STUDY**

26 **FLOODWAY**

27 **LOWEST FLOOR**

28 **REGULATORY FLOOD DATUM**

29 **SPECIAL FLOOD HAZARD AREA**



1 **START OF CONSTRUCTION**

2 **SUBSTANTIAL DAMAGE**

3 **SUBSTANTIAL IMPROVEMENT**

4 **1612.3 Establishment of flood hazard areas.** Flood hazard areas are established to  
5 include the following:

- 6
- 7 1. the flood hazard areas identified by the Federal Emergency Management  
8 Agency in a scientific and engineering report entitled, "The Flood Insurance  
9 Study for Austin, Texas," dated September 26, 2008, with accompanying  
10 Flood Insurance Rate Maps and Flood Boundary-Floodway Maps (FIRM  
11 and FBFM) and related supporting data along with any amendments or  
12 revisions thereto are hereby adopted by reference and declared to be a part of  
13 this section; and
  - 14 2. the 100-year and 25-year floodplains based on projected full development as  
15 specified in the Austin City Code and Drainage Criteria Manual are adopted  
16 by reference and declared to be part of this section.

17 **1612.4 Design and construction.** The design and construction of buildings and  
18 structures, and additions and alterations to buildings and structures located in *flood*  
19 *hazard areas*, shall be in accordance with ASCE 24, Flood Resistant Design and  
20 Construction.

21 **1612.4.1 Freeboard.** A minimum freeboard of one (1) foot shall be added where the  
22 design flood elevation or other elevation requirements are specified, unless otherwise  
23 specified in the Land Development Code.

24 **1612.4.2 Provisions of Safe Refuge.**

- 25 1. Buildings or structures constructed in the flood hazard area where the  
26 ground surface is below the design flood elevation, or where flood water  
27 velocities at the building may exceed five feet per second, shall be provided  
28 with an enclosed refuge space one (1) foot or more above the design flood  
29 elevation of sufficient area to provide for the occupancy load with a  
30 minimum of 12 square feet per person. The refuge space shall be provided  
31 to an exterior platform and stairway not less than three feet wide.
- 32 2. Existing buildings and structures in flood hazard areas which are enlarged,  
33 extended, or altered, or where a change of use or occupancy is made, shall  
34 conform to the requirements of Subsection 1.

- 1           3.     No floor level or portion of a building or structure that is lower than one (1)  
2           foot above the design flood elevation, regardless of the structure or space  
3           classification, shall be used residentially, or for storage of any property,  
4           materials, or equipment that might constitute a safety hazard when contacted  
5           by flood waters.

6     **1612.4.3 Means of Egress.** Normal access to the building shall be by direct connection  
7     with an area that is a minimum of one (1) foot above the design flood elevation, unless  
8     otherwise approved by the *building official*.

9  
10    **1612.5 Flood hazard documentation.** The following documentation shall be prepared  
11    and sealed by a *registered design professional* and submitted to the *building official*:

- 12           1.     For construction in *flood hazard areas*:
- 13                   1.1.   the elevation of the lowest floor, including the basement, as required  
14                   by the lowest floor elevation inspection in Section 110.3.3 (*Lowest*  
15                   *floor elevation*) and for the final inspection in Section 110.3.10.1  
16                   (*Flood hazard documentation*).
- 17                   1.2.   for fully enclosed areas below the design flood elevation where  
18                   provisions to allow for the automatic entry and exit of floodwaters do  
19                   not meet the minimum requirements in Section 2.6.2.1 of ASCE 24,  
20                   *construction documents* shall include a statement that the design will  
21                   provide for equalization of hydrostatic flood forces in accordance with  
22                   Section 2.6.2.2 of ASCE 24; and
- 23                   1.3.   For dry flood-proofed nonresidential buildings, construction  
24                   documents shall include a statement that the dry floodproofing is  
25                   designed in accordance with ASCE 24.

## 26    **SECTION 1811 EARTH RETENTION SYSTEMS**

27    **1811.1 Tieback anchors and soil and rock nails.** Tieback anchors and soil and rock  
28    nails that are allowed in the public right-of-way as components of earth retention systems  
29    as provided in Section 3202.1.4 (*Earth retention system components*) shall comply with  
30    Sections 1811.1.1 (*Depth of tiebacks anchors and soil and rock nails*) through 1811.1.3  
31    (*Length of tiebacks anchors and soil and rock nails*).

32    **1811.1.1 Depth of tieback anchors and soil and rock nails.** At the right-of-way line,  
33    tieback anchors and soil and rock anchors must be at least 6 feet (1829 mm) below the  
34    elevation of the adjacent street curb.

1 **1811.1.2 Separation distance from buried utilities.** Tieback anchors and soil and rock  
2 nails must be below and at least five feet (1524 mm) away from the nearest outside  
3 surface of any existing or planned buried utility in the public right-of-way.

4 **1811.1.3 Length of tieback anchors and soil and rock nails.** Tieback anchors and soil  
5 and rock nails that extend beyond the center of the public right-of-way are prohibited.

6 **2108.4 ACI 530/ASCE 5/TMS402, Section 3.1.7.2.2.** Modify Section 3.1.7.2.2 as  
7 follows:

8 **3.1.7.2.2 In plane bending –** For masonry subjected to in-plane loads, the modulus  
9 of rupture,  $f_r$ , normal and parallel to the bed joints shall be taken from Table  
10 3.1.7.2.1. For grouted stack bond masonry, tension parallel to the bed joints shall  
11 be assumed to be resisted only by the continuous horizontal grout section.

12 **[P] 2902.1 Minimum number of fixtures.** Plumbing fixtures shall be provided in the  
13 minimum number as shown in Table 422.1 of the Plumbing Code based on the actual use  
14 of the building or space. Uses not shown in Table 422.1 of the Plumbing Code shall be  
15 considered individually by the code official. The number of occupants shall be  
16 determined by this code.

17 **[P] 2902.1.1 Fixture calculations.** To determine the *occupant load* of each sex, the total  
18 *occupant load* shall be divided in half. To determine the required number of fixtures, the  
19 fixture ratio or ratios for each fixture type shall be applied to the *occupant load* of each  
20 sex in accordance with Table 422.1 of the Plumbing Code. Fractional numbers resulting  
21 from applying the fixture ratios of Table 422.1 of the Plumbing Code shall be rounded up  
22 to the next whole number. For calculations involving multiple occupancies, such  
23 fractional numbers for each occupancy shall first be summed and then rounded up to the  
24 next whole number.

25 Exception: The total *occupant load* shall not be required to be divided in half  
26 where *approved* statistical data indicate a distribution of the sexes of other than 50  
27 percent of each sex.

28 **[P] 2902.6 Small occupancies.** Drinking fountains shall not be required for an occupant  
29 load of 30 or fewer.

30 **3102.1 General.** The provisions Sections 3102.1 (*General*) through 3102.8 (*Inflation*  
31 *systems*) shall apply to air-supported, air-inflated, membrane-covered cable, membrane-  
32 covered frame and *tensile membrane structures*, collectively known as membrane  
33 structures separated by at least 20 feet (6,096 mm) from any building as specified in IFC  
34 Section 3103.8.2 (*Location*) and erected for a period of 180 days or longer. The  
35 provisions of this section also apply to membrane structures separated by less than 20 feet

1 from any building and erected for a period of 90 days or longer. Those erected for a  
2 shorter period of time shall comply with the *International Fire Code*. Membrane  
3 structures covering water storage facilities, water clarifiers, water treatment plants,  
4 sewage treatment plants, greenhouses and similar facilities not used for human  
5 occupancy, are required to meet only the requirements of Sections 3102.3.1 (*Membrane*  
6 *and interior liner material*) and 3102.7 (*Engineering design*). Membrane structures  
7 erected on a building, balcony, deck or other structure for any period of time shall  
8 comply with this section.

9 **3103.1.3 Permit expiration.** Every *permit* issued for a temporary structure will expire on  
10 the last scheduled day of the event of which the permit was issued. The *permit* cannot be  
11 used to cover other events following the date of the original event.

12 **3103.5 Portable classrooms.** Portable classroom buildings may be moved into or within  
13 this jurisdiction or within a public school district without conforming to the adopted  
14 Energy Code.

15 **3103.6 Moved residential buildings.** Residential buildings or structures moved into or  
16 within the City's zoning jurisdiction shall be sited in compliance with applicable  
17 provisions of Title 25 of the City Code. Foundations of relocated residential buildings or  
18 structures must comply with the provisions of the Building Code for new buildings or  
19 structures. All other building elements must comply with the requirements of the  
20 *International Residential Code*.

21 **3103.7 Moved non-residential buildings.** Non-residential buildings moved into or  
22 within the City's zoning jurisdiction must comply with the provisions of the Building  
23 Code for new buildings or structures.

24 **3109.3 Public swimming pools.** Public swimming pools shall be enclosed as per the  
25 Texas Department of Health Standards for Swimming Pools and Spas.

## 26 27 **3112 AERIAL PASSAGEWAYS**

28 **3112.1 Defined.** An aerial passageway is a structure located over an alley or street  
29 connecting two buildings on opposite sides of the alley or street.

30 **3112.2 Requirements.** An aerial passageway shall comply with this section.

- 31 1. The structure shall be used for access only and not for storage or occupancy.
- 32 2. The structure shall be constructed entirely of non-combustible materials.
- 33 3. Self-closing Class A doors shall be placed at each end of the passageway.

- 1 4. If the structure interferes with any public utility facilities, all costs associated  
2 with relocation and remediation shall be borne by the Owner.
- 3 5. No electric, gas, or water shall be attached to or be permitted to cross on or  
4 in the aerial passageway. Telephone and other communication utilities may  
5 be allowed subject to the execution of a license agreement.
- 6 6. Except as otherwise provided in the section, a minimum clearance of 18 feet  
7 above the surface of the alley or street is required. The *building official* may  
8 allow a height that is less than 18 feet but not less than 17 feet if he  
9 determines that the lower height will result in an equivalent installation.
- 10 7. A license agreement required by City Code Chapter 14-11 is executed.

11 **3201.1 Scope.** The provisions of this chapter shall govern the encroachment of structures  
12 into the public right-of-way, including components of earth retention systems used to  
13 facilitate below-grade construction of a building or structure.

14 **3202.1 Encroachments below grade.** Encroachments below grade shall comply with  
15 Sections 3202.1.1 (*Structural support*) through 3202.1.4 (*Earth retention system*  
16 *components*).

17 **3202.1.4 Earth retention system components.** Components of earth retention systems  
18 that are required for structural support of a building or structure are prohibited in the  
19 public right-of-way. Components of earth retention systems that are needed only during  
20 construction of the below-grade portion of a building or structure are subject to the  
21 following conditions:

- 22 1. Approval of the Director of the Public Works Department is required before  
23 construction of earth retention system components in public right-of-way  
24 commences.
- 25 2. All components of an earth retention system are prohibited in the public  
26 right-of-way except for (1) tieback anchors that are part of a soldier pile and  
27 lagging system; (2) tieback anchors that are part of a diaphragm or slurry  
28 wall system; (3) tieback anchors that are part of a sheet pile wall system; (4)  
29 tieback anchors that are part of a secant wall system; and (5) soil or rock  
30 nails that are part of a nail wall.
- 31 3. Tieback anchors or soil or rock nails that are necessary as functional  
32 components of the earth retention system for longer than 12 months are  
33 prohibited in the public right-of-way.

4. Tieback anchors and soil and rock nails allowed in the public right-of-way must be designed according to the criteria in Section 1811 (*Earth Retention Systems*).

## **APPENDIX G FLOOD-RESISTANT CONSTRUCTION**

The provisions contained in this appendix are mandatory.

### **SECTION G100 STATUTORY AUTHORIZATION**

As a home-rule city, the City of Austin has the responsibility and power to adopt regulations designed to minimize flood losses. The Legislature of the State of Texas has in Sections 16.3145 and 16.315 of the Texas Water Code authorized local government units to adopt regulations designed to minimize flood losses.

### **SECTION G101 ADMINISTRATION**

**G101.1 Purpose.** The purpose of this appendix is to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific *flood hazard areas* through the establishment of comprehensive regulations for management of *flood hazard areas* designed to:

1. Prevent unnecessary disruption of commerce, access and public service during times of flooding.
2. Manage the alteration of natural flood plains, stream channels and shorelines.
3. Manage filling, grading, dredging and other development which may increase flood damage or erosion potential.
4. Prevent or regulate the construction of flood barriers which will divert floodwaters or which can increase flood hazards.
5. Contribute to improved construction techniques in the flood plain.
6. Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause excessive increases in flood heights or velocities; and
7. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.

**G101.2 Objectives.** The objectives of this appendix are to protect human life, minimize the expenditure of public money for flood control projects, minimize the need for rescue

1 and relief efforts associated with flooding, minimize prolonged business interruption,  
2 minimize damage to public facilities and utilities, help maintain a stable tax base by  
3 providing for the sound use and development of flood-prone areas, contribute to  
4 improved construction techniques in the flood plain and ensure that potential owners and  
5 occupants are notified that property is within *flood hazard areas*.

6 **G101.3 Scope.** The provisions of this appendix shall apply to all proposed development  
7 in a *flood hazard area* established in Section 1612 (*Flood Loads*) of this code.

8 **G101.4 Violations.** Any violation of a provision of this appendix, or failure to comply  
9 with a permit or variance issued pursuant to this appendix or any requirement of this  
10 appendix, shall be handled in accordance with Section 114 (*Violations*).

## 11 **SECTION G102 APPLICABILITY**

12 **G102.1 General.** This appendix, in conjunction with this code, provides minimum  
13 requirements for development located in flood hazard areas, including:

- 14 1. The subdivision of land.
- 15 2. Site improvements and installation of utilities.
- 16 3. Placement and replacement of manufactured homes.
- 17 4. Placement of recreational vehicles.
- 18 5. New construction and repair, reconstruction, rehabilitation, or additions to  
19 new construction.
- 20 6. Substantial improvement of existing buildings and structures, including  
21 restoration after damage.
- 22 7. Installation of tanks.

23 **G102.1.1 Abrogation and greater restrictions.** This appendix is not intended to  
24 repeal, abrogate, or impair any existing easements, covenants, or deed restrictions.  
25 However, where this appendix and another city code provision, easement, covenant, or  
26 deed restriction conflict or overlap, whichever imposes the more stringent restrictions  
27 shall prevail.

28 **G102.2 Establishment of flood hazard areas.** Flood hazard areas are established in  
29 Section 1612.3 (*Establishment of flood hazard areas*).

30 **G102.3. Nonconforming Uses.**

1 A structure, or the use of a structure or premises, which was lawful before the adoption of  
2 the Building Code, but which does not conform with the requirements of these  
3 regulations, may be continued subject to the following conditions:

- 4 1. No such use shall be expanded, changed, enlarged, or altered in a way which  
5 increases its nonconformity.
- 6 2. No substantial improvement of the structure shall be made unless the  
7 structure is changed to conform to these regulations.
- 8 3. If a nonconforming use is discontinued for a period of 90 days, any future  
9 use of the building or premises shall conform to these regulations.
- 10 4. Any nonconforming use or structure which is destroyed by means, including  
11 floods, to an extent of 50 percent or more of its market value, shall not be  
12 reconstructed except in conformance with the provisions of these  
13 regulations.

## 14 **SECTION G103 POWERS AND DUTIES**

15 **G103.1 Permit applications.** All applications for permits must comply with the  
16 following:

- 17 1. The *building official* shall review all *permit* applications to determine  
18 whether proposed development is located in *flood hazard areas* established  
19 in Section 1612.3 (*Establishment of flood hazard areas*).
- 20 2. Where a proposed development site is in a *flood hazard area*, all  
21 development to which this appendix is applicable as specified in Section  
22 G102.1 (*General*) shall be designed and constructed with methods, practices  
23 and materials that minimize *flood* damage and that are in accordance with  
24 this code and ASCE 24.

25 **G103.2 Other Permits.** It shall be the responsibility of the *building official* to ensure  
26 that approval of a proposed development shall not be given until proof that necessary  
27 permits have been granted by federal or state agencies having jurisdiction over such  
28 development.

29 **G103.3 Determination of design flood elevations.** If design flood elevations are not  
30 specified, the *building official* is authorized to require the applicant to:

- 31 1. Obtain, review and reasonably utilize data available from a federal, state or  
32 other source; or



- 1           2.     Determine the design flood elevation in accordance with the 100-year  
2 floodplain based on projected full development in accordance with the City  
3 of Austin Drainage Criteria Manual. Such analyses shall be performed and  
4 sealed by a Professional Engineer licensed by the State of Texas. Studies,  
5 analyses and computations shall be submitted in sufficient detail to allow  
6 review and approval by the *building official*. The accuracy of data submitted  
7 for such determination shall be the responsibility of the applicant.

8 **G103.4 Activities in riverine flood hazard areas.** In riverine situations, the *building*  
9 *official* shall not permit any new construction, substantial improvement or other  
10 development, including fill, unless the applicant submits and engineering analysis  
11 prepared by a *registered design professional*, demonstrating that the cumulative effect of  
12 the proposed development, when combined with all other existing and anticipated  
13 development, will not increase the design flood elevation at any point that results in  
14 additional adverse flooding on other property.

15 **G103.5 Floodway encroachment.** Prior to issuing a permit for any floodway  
16 encroachment, including fill, new construction, substantial improvements and other  
17 development or land-disturbing activity, the *building official* shall require submission of a  
18 certification prepared by a Professional Engineer licensed by the State of Texas, along  
19 with supporting technical data in accordance with the City of Austin Drainage Criteria  
20 Manual, demonstrating that such development will not cause any increase of the level of  
21 the design flood.

22 **G103.5.1 Floodway revisions.** A floodway encroachment that increases the level of the  
23 design flood may be considered for a variance only if the applicant has applied for a  
24 conditional Flood Insurance Rate Map (FIRM) revision and has received the approval of  
25 the Federal Emergency Management Agency (FEMA) provided the conditional Flood  
26 Insurance Rate Map (FIRM) revision is required by the City of Austin Drainage Criteria  
27 Manual.

28 **G103.6 Watercourse alteration.** Prior to issuing a permit for any alteration or  
29 relocation of any watercourse, the *building official* shall require the applicant to provide  
30 notification of the proposal to the appropriate authorities of all affected adjacent  
31 government jurisdictions, as well as appropriate state agencies. A copy of the notification  
32 shall be maintained in the permit records and submitted to FEMA.

33 **G103.6.1 Engineering analysis.** The *building official* shall require submission of an  
34 engineering analysis in accordance with the City of Austin Drainage Criteria Manual  
35 performed and sealed by a Professional Engineer licensed by the State of Texas  
36 demonstrating that the flood-carrying capacity of the altered or relocated portion of the

1 watercourse will not be decreased. Such watercourses shall be maintained in a manner  
2 which preserves the channel's flood-carrying capacity.

3  
4 **G103.7 Records.** The *building official* shall maintain a permanent record of all permits  
5 issued in flood hazard areas, including copies of inspection reports and certifications  
6 required in Section 1612 (*Flood Loads*).

7 **G103.9 Inspections.** Development for which a *permit* under this appendix is required  
8 shall be subject to inspection. The *building official* or the *building official's* designee  
9 shall make, or cause to be made, inspections of all development in *flood hazard areas*  
10 authorized by issuance of a *permit* under this appendix.

## 11 SECTION G104 PERMITS

12 **G104.1 Required.** Any person, owner or owner's authorized agent who intends to  
13 conduct any development in a *flood hazard area* shall first make application to the  
14 *building official* and shall obtain the required *permit*.

15 **G104.2 Application for permit.** The applicant shall file an application in writing on a  
16 form furnished by the *building official*. Such application shall:

- 17 1. Identify and describe the development to be covered by the *permit*.
- 18 2. Describe the land on which the proposed development is to be conducted by  
19 legal description, street address or similar description that will readily  
20 identify and definitely locate the site.
- 21 3. Include a site plan showing the delineation of *flood hazard areas*, *floodway*  
22 boundaries, flood zones, design flood elevations, ground elevations,  
23 proposed lowest floor elevation, proposed fill and excavation and drainage  
24 patterns and facilities.
- 25 4. Include in subdivision proposals and other proposed developments with  
26 more than 50 lots or larger than 5 acres (20 234 m<sup>2</sup>), base flood elevation  
27 data in accordance with Section 1612.3 (*Establishment of flood hazard*  
28 *areas*).
- 29 5. Indicate the use and occupancy for which the proposed development is  
30 intended.
- 31 6. Be accompanied by construction documents, grading and filling plans and  
32 other information deemed appropriate by the *building official*.

7. State the valuation of the proposed work.
8. Be signed by the applicant or the applicant's authorized agent.

**G104.3 Validity of permit.** The issuance of a *permit* under this appendix shall not be construed to be a *permit* for, or approval of, any violation of this appendix or any other ordinance of the jurisdiction. The issuance of a *permit* based on submitted documents and information shall not prevent the *building official* from requiring the correction of errors. The *building official* is authorized to prevent occupancy or use of a structure or site which is in violation of this appendix or other ordinances of the City of Austin.

**G104.4 Time Limitation on Application; Permit Expiration and Reactivation.** Time limits on permit applications and requirements for permit expiration and reactivation, including a review fee for expired permits, are set forth in Chapter 25-12, Article 13 (*Administration of Technical Codes*).

**G104.5 Suspension or revocation.** The *building official* is authorized to suspend or revoke a *permit* issued under this appendix wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or code of the City of Austin.

## **SECTION G105 VARIANCES**

**G105.1 General.** The City Council shall decide requests for variances from the floodplain regulations in this code and City Code Chapter 25-7 (*Drainage*) after conducting a public hearing. The City Council shall base its determination on technical justifications, and has the right to attach such conditions to variances as it deems necessary to further the purposes and objectives of this appendix and Section 1612 (*Flood Loads*).

**G105.2 Records.** The *building official* shall maintain a permanent record of all variance actions, including justification for their issuance.

**G105.3 Historic structures.** A variance may be issued for the repair or rehabilitation of a historic structure upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure, and the variance is the minimum necessary to preserve the historic character and design of the structure.

**Exception:** Within flood hazard areas, historic structures that are not:

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

- b. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
- c. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

**G105.4 Functionally dependent facilities.** A variance may be issued for the construction or substantial improvement of a functionally dependent facility provided the criteria in Section 1612.1 (*General*) are met and the variance is the minimum necessary to allow the construction or substantial improvement, and that all due consideration has been given to methods and materials that minimize flood damages during the design flood and create no additional threats to public safety.

**G105.5 Restrictions.** The City Council shall not issue a variance for any proposed development in a floodway if any increase in flood levels would result during the design flood discharge.

**G105.6 Considerations.** In reviewing applications for variances, the City Council shall consider all technical evaluations, all relevant factors, all other portions of this appendix, and each of the following:

1. The danger that materials and debris may be swept onto other lands resulting in further injury or damage.
2. The danger to life and property due to flooding or erosion damage.
3. The susceptibility of the proposed development, including contents, to flood damage and the effect of such damage on current and future owners.
4. The importance of the services provided by the proposed development to the community.
5. The availability of alternate locations for the proposed development that are not subject to flooding or erosion.
6. The compatibility of the proposed development with existing and anticipated development.
7. The relationship of the proposed development to the comprehensive plan and flood plain management program for that area.
8. The safety of access to the property in times of flood for ordinary and emergency vehicles.

- 1 9. The expected heights, velocity, duration, rate of rise and debris and sediment  
2 transport of the floodwaters and the effects of wave action, if applicable,  
3 expected at the site.
- 4 10. The costs of providing governmental services during and after flood  
5 conditions including maintenance and repair of public utilities and facilities  
6 such as sewer, gas, electrical and water systems, streets and bridges.

7 **G105.7 Conditions for issuance.** Variances shall only be issued by the City Council  
8 upon:

- 9 1. A technical showing of good and sufficient cause based on the unique  
10 characteristics of the size, configuration or topography of the site;
- 11 2. A determination that failure to grant the variance would result in exceptional  
12 hardship by rendering the lot undevelopable;
- 13 3. A determination that the granting of a variance will not result in increased  
14 flood heights, additional threats to public safety, extraordinary public  
15 expense, nor create nuisances, cause fraud on or victimization of the public  
16 or conflict with existing local laws or ordinances;
- 17 4. A determination that the variance is the minimum necessary, considering the  
18 flood hazard, to afford relief; and
- 19 5. Notification to the applicant in writing over the signature of the *building*  
20 *official* that the issuance of a variance to construct a structure below the base  
21 flood level will result in increased premium rates for flood insurance, and  
22 that such construction below the base flood level increases risks to life and  
23 property.

## 24 **SECTION G201 DEFINITIONS**

25 **G201.1 General.** The following words and terms shall, for the purposes of this  
26 appendix, have the meanings shown herein. Refer to Chapter 2 for general definitions.

### 27 **G201.2 Definitions.**

28 **DEVELOPMENT.** Any man-made change to improved or unimproved real estate,  
29 including but not limited to, buildings or other structures, temporary or permanent storage  
30 of materials, mining, dredging, filling, grading, paving, excavations, operations and other  
31 land disturbing activities.

32 **FUNCTIONALLY DEPENDENT FACILITY.** A facility which cannot be used for its  
33 intended purpose unless it is located or carried out in close proximity to water, such as a

1 docking or port facility necessary for the loading or unloading of cargo or passengers,  
2 shipbuilding or ship repair. The term does not include long-term storage, manufacture,  
3 sales or service facilities.

4 **MANUFACTURED HOME.** A structure that is transportable in one or more sections,  
5 built on a permanent chassis, designed for use with or without a permanent foundation  
6 when attached to the required utilities, and constructed to the Federal Mobile Home  
7 Construction and Safety Standards and rules and regulations promulgated by the U.S.  
8 Department of Housing and Urban Development. The term also includes mobile homes,  
9 park trailers, travel trailers and similar transportable structures that are placed on a site  
10 for 180 consecutive days or longer.

11 **MANUFACTURED HOME PARK OR SUBDIVISION.** A parcel (or contiguous  
12 parcels) of land divided into two or more manufactured home lots for rent or sale.

13 **RECREATIONAL VEHICLE.** A vehicle that is built on a single chassis, 400 square  
14 feet (37.16 m<sup>2</sup>) or less when measured at the largest horizontal projection, designed to be  
15 self-propelled or permanently towable by a light-duty truck, and designed primarily not  
16 for use as a permanent dwelling but, as temporary living quarters for recreational,  
17 camping, travel or seasonal use. A recreational vehicle is ready for highway use if it is on  
18 its wheels or jacking system, is attached to the site only by quick disconnect-type utilities  
19 and security devices and has no permanently attached additions.

20 **VARIANCE.** A grant of relief from the requirements of this section which permits  
21 construction in a manner otherwise prohibited by this section where specific enforcement  
22 would result in unnecessary hardship.

23 **VIOLATION.** A development that is not fully compliant with this appendix or Section  
24 1612 (*Flood Loads*), as applicable.

## 25 **SECTION G301 SUBDIVISIONS**

26 **G301.1 General.** Any subdivision proposal, including proposals for manufactured home  
27 parks and subdivisions, or other proposed new development in a flood hazard area shall  
28 be reviewed to verify all of the following:

- 29 1. All such proposals are consistent with the need to minimize flood damage;
- 30 2. All public utilities and facilities, such as sewer, gas, electric and water  
31 systems are located and constructed to minimize or eliminate flood damage;  
32 and
- 33 3. Adequate drainage is provided to reduce exposure to flood hazards.

1 **G301.2 Subdivision requirements.** The following requirements shall apply in the case  
2 of any proposed subdivision, including proposals for manufactured home parks and  
3 subdivisions, any portion of which lies within a *flood hazard area*:

- 4 1. The *flood hazard area*, including *floodways*, as appropriate, shall be  
5 delineated on tentative and final subdivision plats.
- 6 2. Design flood elevations shall be shown on tentative and final subdivision  
7 plats.
- 8 3. Residential building lots shall be provided with adequate buildable area  
9 outside the *flood hazard area*.
- 10 4. The design criteria for utilities and facilities set forth in this appendix,  
11 Section 1612 (*Flood Loads*), ASCE 24, the City of Austin Drainage Criteria  
12 Manual, and applicable FEMA design criteria shall be met.

### 13 **SECTION G401 SITE IMPROVEMENT**

14 **G401.1 Development in floodways.** Development or land disturbing activity shall not  
15 be authorized in the *floodway* unless it has been demonstrated through hydrologic and  
16 hydraulic analyses performed and sealed by a Professional Engineer licensed by the State  
17 of Texas in accordance with the City of Austin Drainage Criteria Manual, that the  
18 proposed encroachment will not result in any increase in the level of the design flood.

19 **G401.2 Sewer facilities.** All new or replaced sanitary sewer facilities, private sewage  
20 treatment plants (including all pumping stations and collector systems) and on-site waste  
21 disposal systems shall be designed in accordance with Chapter 7, ASCE 24, to minimize  
22 or eliminate infiltration of floodwaters into the facilities and discharge from the facilities  
23 into floodwaters, or impairment of the facilities and systems.

24 **G401.3 Water facilities.** All new replacement water facilities shall be designed in  
25 accordance with the provisions of Chapter 7, ASCE 24, to minimize or eliminate  
26 infiltration of floodwaters into the systems.

27 **G401.4 Storm drainage.** Storm drainage shall be designed to convey the flow of surface  
28 waters to minimize or eliminate damage to persons or property.

29 **G401.5 Streets and sidewalks.** Streets and sidewalks shall be designed to minimize  
30 potential for increasing or aggravating flood levels.

### 31 **SECTION G501 MANUFACTURED HOMES**

32 **G501.1 Elevation.** All new and replacement manufactured homes to be placed or  
33 substantially improved in a *flood hazard area* shall be elevated such that the lowest floor

1 of the manufactured home is elevated to a minimum of one (1) foot above the design  
2 flood elevation. Elevation certification required by Section 1612.5 (*Flood hazard*  
3 *documentation*) shall be submitted to the *building official*.

4 **G501.2 Foundations.** All new and replacement manufactured homes, including  
5 substantial improvement of existing manufactured homes, shall be placed on a  
6 permanent, reinforced foundation that is designed in accordance with Section R322 of the  
7 *International Residential Code*.

8 **G501.3 Anchoring.** All new and replacement manufactured homes to be placed or  
9 substantially improved in a *flood hazard area* shall be installed using methods and  
10 practices which minimize flood damage. Manufactured homes shall be securely anchored  
11 to an adequately anchored foundation system to resist flotation, collapse and lateral  
12 movement. Methods of anchoring are authorized to include, but are not limited to, use of  
13 over-the-top or frame ties to ground anchors. This requirement is in addition to applicable  
14 state and local anchoring requirements for resisting wind forces.

15 **G501.4 Protection of mechanical equipment and outside appliances.** Mechanical  
16 equipment and outside appliances shall be elevated to or above the *design flood elevation*.

17 **Exception:** Where such equipment and appliances are designed and installed to  
18 prevent water from entering or accumulating within their components and the  
19 systems are constructed to resist hydrostatic and hydrodynamic loads and stresses,  
20 including the effects of buoyancy, during the occurrence of flooding up to the  
21 elevation required by Section R322 of the *International Residential Code*, the  
22 systems and equipment shall be permitted to be located below the elevation  
23 required by Section R322 of the *International Residential Code*. Electrical wiring  
24 systems shall be permitted below the *design flood elevation* provided they conform  
25 to the provisions of NFPA 70.

26 **G501.5 Enclosures.** Fully enclosed areas below elevated manufactured homes shall  
27 comply with the requirements of Section R322 of the *International Residential Code*.

## 28 SECTION G601 RECREATIONAL VEHICLES

29 **G601.1 Placement prohibited.** The placement of recreational vehicles shall not be  
30 authorized in *floodways*.

31  
32 **G601.2 Temporary placement.** Recreational vehicles in flood hazard areas shall be  
33 fully licensed and ready for highway use, and shall be placed on a site for less than 180  
34 consecutive days.



1 **G601.3 Permanent placement.** Recreational vehicles that are not fully licensed and  
2 ready for highway use, or that are to be placed on a site for more than 180 consecutive  
3 days, shall meet the requirements of Section G501 (*Manufactured Homes*) for  
4 manufactured homes.

5 **SECTION G701 TANKS**

6 **G701.1 Tanks.** Underground and above-ground tanks shall be designed, constructed,  
7 installed and anchored in accordance with ASCE 24.

8 **SECTION G702 REFERENCED STANDARDS**

9	ASCE 24-13	Flood Resistance Design	G103.1, G401.3, G401.4,
10		And Construction	G701.1, G801.1, G801.5,
11			G801.6, G801.7, G901.1,
12			G1001.4, G201
13			
14	HUD 24 CFR	Manufactured Home	G201
15	Part 3280	Construction and Safety Standards	
16	(2008)		
17			
18	IBC-15	International Building Code	G102.2, G1001.1, G1001.3
19			
20	IRC-15	International Residential Code	G501.2, G501.4, G501.5
21			
22	NFPA 70-11	National Electrical Code	G501.4, G1001.6
23			
24			

1 **PART 2.** This ordinance takes effect on \_\_\_\_\_, 2017.

2  
3 **PASSED AND APPROVED**

4  
5  
6  
7 \_\_\_\_\_, 2016      § \_\_\_\_\_  
8

9 Mayor

10  
11  
12 **APPROVED:** \_\_\_\_\_

13 **ATTEST:** \_\_\_\_\_

14 City Attorney

15 City Clerk

DRAFT