

# CHAPTER 13

## PERFORMANCE COMPLIANCE METHODS

### SECTION 1301 GENERAL

**1301.1 Scope.** The provisions of this chapter shall apply to the alteration, repair, addition and change of occupancy of existing structures, including historic and moved structures, as referenced in Section 101.5.3. The provisions of this chapter are intended to maintain or increase the current degree of public safety, health and general welfare in existing buildings while permitting repair, alteration, addition and change of occupancy without requiring full compliance with Chapters 4 through 12, except where compliance with other provisions of this code is specifically required in this chapter.

**1301.1.1 Compliance with other methods.** Alterations, repairs, additions and changes of occupancy to existing structures shall comply with the provisions of this chapter or with one of the methods provided in Section 101.5.

**1301.2 Applicability.** Work involving rehabilitation, additions, alterations, or changes of occupancy shall be made to conform to the requirements of this chapter or the provisions of Chapters 4 through 12. The provisions of Sections 1301.2.1 through 1301.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H.

**1301.2.1 Change in occupancy.** Where an existing building is changed to a new occupancy classification and this section is applicable, the provisions of this section for the new occupancy shall be used to determine compliance with this code.

**Exception:** Plumbing, mechanical and electrical systems in buildings undergoing a change of occupancy shall be subject to any applicable requirements of Section 103.3 of the *Virginia Construction Code*.

**1301.2.2 Partial change in occupancy.** Where a portion of the building is changed to a new occupancy classification and that portion is separated from the remainder of the building with fire barrier wall assemblies having a fire-resistance rating as required by Table 508.3.3 of the *International Building Code* or Section R317 of the *International Residential Code* for the separate occupancies, or with approved compliance alternatives, the portion changed shall be made to conform to the provisions of this section.

Where a portion of the building is changed to a new occupancy classification and that portion is not separated from the remainder of the building with fire separation assemblies having a fire-resistance rating as required by Table 508.3.3 of the *International Building Code* or Section R317 of the *International Residential Code* for the separate occupancies, or with approved compliance alternatives, the provisions of this section which apply to each occupancy shall apply to the entire building. Where there are conflicting pro-

visions, those requirements which secure the greater public safety shall apply to the entire building or structure.

**1301.2.3 Additions.** Additions to existing buildings shall comply with the requirements of the *International Building Code*, *International Residential Code*, and this code for new construction. The combined height and area of the existing building and the new addition shall not exceed the height and area allowed by Chapter 5 of the *International Building Code*. Where a fire wall that complies with Section 705 of the *International Building Code* is provided between the addition and the existing building, the addition shall be considered a separate building.

**1301.2.4 Alterations and repairs.** An existing building or portion thereof that does not comply with the requirements of this code for new construction shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. If, in the alteration or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33 of the *International Building Code*.

**1301.2.5 Accessibility requirements.** All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Chapter 11 of the *International Building Code*.

**1301.3 Acceptance.** For repairs, alterations, additions, and changes of occupancy to existing buildings that are evaluated in accordance with this section, compliance with this section shall be accepted by the code official.

**1301.3.1 Hazards.** Where the code official determines that an unsafe condition exists as provided for in Section 115, such unsafe condition shall be abated in accordance with Section 115.

**1301.3.2 Compliance with other codes.** Buildings that are evaluated in accordance with this section shall comply with the *International Fire Code* and *International Property Maintenance Code*.

**1301.3.3 Compliance with flood hazard provisions.** In flood hazard areas, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the *International Building Code* if the work covered by this section constitutes substantial improvement.

**1301.4 Investigation and evaluation.** For proposed work covered by this chapter, the building owner shall cause the existing building to be investigated and evaluated in accordance with the provisions of Sections 1301.4 through 1301.9.

**1301.4.1 Structural analysis.** The owner shall have a structural analysis of the existing building made to determine adequacy of structural systems for the proposed alteration, addition, or change of occupancy. The existing building

shall be capable of supporting the minimum load requirements of Chapter 16 of the *International Building Code*.

**1301.4.2 Submittal.** The results of the investigation and evaluation as required in Section 1301.4, along with proposed compliance alternatives, shall be submitted to the code official.

**1301.4.3 Determination of compliance.** The code official shall determine whether the existing building, with the proposed addition, alteration, or change of occupancy, complies with the provisions of this section in accordance with the evaluation process in Sections 1301.5 through 1301.9.

**1301.5 Evaluation.** The evaluation shall be comprised of three categories: fire safety, means of egress, and general safety, as described in Sections 1301.5.1 through 1301.5.3.

**1301.5.1 Fire safety.** Included within the fire safety category are the structural fire resistance, automatic fire detection, fire alarm, and fire-suppression system features of the facility.

**1301.5.2 Means of egress.** Included within the means of egress category are the configuration, characteristics, and support features for means of egress in the facility.

**1301.5.3 General safety.** Included within the general safety category are the fire safety parameters and the means-of-egress parameters.

**1301.6 Evaluation process.** The evaluation process specified herein shall be followed in its entirety to evaluate existing buildings. Table 1301.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 1301.6.16, the score for each occupancy shall be determined, and the lower score determined for each section of the evaluation process shall apply to the entire building.

Where the separation between the mixed occupancies qualifies for any category indicated in Section 1301.6.16, the score for each occupancy shall apply to each portion of the building based on the occupancy of the space.

**1301.6.1 Building height.** The value for building height shall be the lesser value determined by the formula in Section 1301.6.1.1. Chapter 5 of the *International Building Code*, including allowable increases due to automatic sprinklers as provided for in Section 504.2, shall be used to determine the allowable height of the building. Subtract the actual building height from the allowable height and divide by 12½ feet (3810 mm). Enter the height value and its sign (positive or negative) in Table 1301.7 under Safety Parameter 1301.6.1, Building Height, for fire safety, means of egress, and general safety. The maximum score for a building shall be 10.

**1301.6.1.1 Height formula.** The following formulas shall be used in computing the building height value.

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

$$\text{Height value, stories} = (AS - EBS) \times CF \quad \text{(Equation 13-1)}$$

where:

*AH* = Allowable height in feet (mm) from Table 503 of the *International Building Code*.

*EBH* = Existing building height in feet (mm).

*AS* = Allowable height in stories from Table 503 of the *International Building Code*.

*EBS* = Existing building height in stories.

*CF* = 1 if *(AH) - (EBH)* is positive.

*CF* = Construction type factor shown in Table 1301.6.6(2) if *(AH) - (EBH)* is negative.

**Note:** Where mixed occupancies are separated and individually evaluated as indicated in Section 1301.6, the values *AH*, *AS*, *EBH*, and *EBS* shall be based on the height of the fire area of the occupancy being evaluated.

**1301.6.2 Building area.** The value for building area shall be determined by the formula in Section 1301.6.2.2. Section 503 of the *International Building Code* and the formula in Section 1301.6.2.1 shall be used to determine the allowable area of the building. The allowable area shall be the lesser value calculated by Equations 13-2 and 13-3. This shall include any allowable increases due to open perimeter and automatic sprinklers as provided for in Section 506 of the *International Building Code*. Subtract the actual building area from the allowable area and divide by 1,200 square feet (112 m<sup>2</sup>). Enter the area value and its sign (positive or negative) in Table 1301.7 under Safety Parameter 1301.6.2, Building Area, for fire safety, means of egress, and general safety. In determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as listed in Table 1301.8, Mandatory Safety Scores.

**1301.6.2.1 Allowable area formula.** The following formula shall be used in computing allowable area:

$$A_a = \frac{(100 + I_f + I_s) \times A_t}{100} \quad \text{(Equation 13-2)}$$

*A<sub>max</sub>* = 3 × *A<sub>a</sub>*, as calculated in accordance with Section 506.1 of the *International Building Code*.

$$A_{a,max} = \frac{A_{max}}{\text{Number of stories}} \quad \text{(Equation 13-3)}$$

where:

*A<sub>a</sub>* = Allowable area per floor.

$I_s$  = Area increase due to sprinkler protection, percent as calculated in accordance with Section 506.3 of the *International Building Code*.

$I_f$  = Area increase due to frontage, percent as calculated in accordance with Section 506.2 of the *International Building Code*.

$A_t$  = Tabular area per floor in accordance with Table 503 of the *International Building Code*, square feet (m<sup>2</sup>).

$A_{max}$  = Total area of the entire building.

$A_{a,max}$  = Allowable area per floor based on the limitations of Section 506.4 of the *International Building Code*.

**1301.6.2.2 Area formula.** The following formula shall be used in computing the area value. Determine the area value for each occupancy fire area on a floor-by-floor basis. For each occupancy, choose the minimum area value of the set of values obtained for the particular occupancy.

$$\text{Area value}_i = \frac{\text{Allowable area}_i}{1200 \text{ square feet}} \left[ 1 - \left( \frac{\text{Actual area}_i}{\text{Allowable area}_i} + \dots + \frac{\text{Actual area}_n}{\text{Allowable area}_n} \right) \right]$$

(Equation 13-4)

where:

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

$n$  = Number of separated occupancies on a floor.

**1301.6.3 Compartmentation.** Evaluate the compartments created by fire barrier walls which comply with Sections 1301.6.3.1 and 1301.6.3.2 and which are exclusive of the wall elements considered under Sections 1301.6.4 and 1301.6.5. Conforming compartments shall be figured as the net area and do not include shafts, chases, stairways, walls, or columns. Using Table 1301.6.3, determine the appropriate compartmentation value (CV) and enter that value into Table 1301.7 under Safety Parameter 1301.6.3, Compartmentation, for fire safety, means of egress, and general safety.

**1301.6.3.1 Wall construction.** A wall used to create separate compartments shall be a fire barrier conforming to Section 706 of the *International Building Code* with a fire-resistance rating of not less than 2 hours. Where the building is not divided into more than one compartment, the compartment size shall be taken as the total floor area on all floors. Where there is more than one compartment within a story, each compartmented area on such story shall be provided with a horizontal exit conforming to Section 1022 of the *International Building Code*. The fire door serving as the horizontal exit between compartments shall be so installed, fitted, and gasketed that such fire door will provide a substantial barrier to the passage of smoke.

**1301.6.3.2 Floor/ceiling construction.** A floor/ceiling assembly used to create compartments shall conform to Section 711 of the *International Building Code* and shall have a fire-resistance rating of not less than 2 hours.

**1301.6.4 Tenant and dwelling unit separations.** Evaluate the fire-resistance rating of floors and walls separating tenants, including dwelling units, and not evaluated under Sections 1301.6.3 and 1301.6.5. Under the categories and occupancies in Table 1301.6.4, determine the appropriate value and enter that value in Table 1301.7 under Safety Parameter 1301.6.4, Tenant and Dwelling Unit Separation, for fire safety, means of egress, and general safety.

TABLE 1301.6.4  
SEPARATION VALUES

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

**1301.6.4.1 Categories.** The categories for tenant and dwelling unit separations are:

TABLE 1301.6.3  
COMPARTMENTATION VALUES

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

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

1. Category a—No fire partitions; incomplete fire partitions; no doors; doors not self-closing or automatic closing.
2. Category b—Fire partitions or floor assembly less than 1-hour fire-resistance rating or not constructed in accordance with Sections 708 or 711 of the *International Building Code*, respectively.
3. Category c—Fire partitions with 1-hour or greater fire-resistance rating constructed in accordance with Section 708 of the *International Building Code* and floor assemblies with 1-hour but less than 2-hour fire-resistance rating constructed in accordance with Section 711 of the *International Building Code* or with only one tenant within the fire area.
4. Category d—Fire barriers with 1-hour but less than 2-hour fire-resistance rating constructed in accordance with Section 706 of the *International Building Code* and floor assemblies with 2-hour or greater fire-resistance rating constructed in accordance with Section 711 of the *International Building Code*.
5. Category e—Fire barriers and floor assemblies with 2-hour or greater fire-resistance rating and constructed in accordance with Sections 706 and 711 of the *International Building Code*, respectively.

**1301.6.5 Corridor walls.** Evaluate the fire-resistance rating and degree of completeness of walls which create corridors serving the floor and that are constructed in accordance with Section 1013 of the *International Building Code*. This evaluation shall not include the wall elements considered under Sections 1301.6.3 and 1301.6.4. Under the categories and groups in Table 1301.6.5, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.5, Corridor Walls, for fire safety, means of egress, and general safety.

**TABLE 1301.6.5  
CORRIDOR WALL VALUES**

OCCUPANCY	CATEGORIES			
	a	b	c <sup>a</sup>	d <sup>b</sup>
A-1	-10	-4	0	2
A-2	-30	-12	0	2
A-3, F, M, R, S-1	-7	-3	0	2
A-4, B, E, S-2	-5	-2	0	5

a. Corridors not providing at least one-half the travel distance for all occupants on a floor shall use Category b.

**1301.6.5.1 Categories.** The categories for corridor walls are:

1. Category a—No fire partitions; incomplete fire partitions; no doors; or doors not self-closing.
2. Category b—Less than 1-hour fire-resistance rating or not constructed in accordance with Section 708.4 of the *International Building Code*.

3. Category c—1-hour to less than 2-hour fire-resistance rating, with doors conforming to Section 715 of the *International Building Code* or without corridors as permitted by Section 1014 of the *International Building Code*.
4. Category d—2-hour or greater fire-resistance rating, with doors conforming to Section 715 of the *International Building Code*.

**1301.6.6 Vertical openings.** Evaluate the fire-resistance rating of vertical exit enclosures, hoistways, escalator openings, and other shaft enclosures within the building, and openings between two or more floors. Table 1301.6.6(1) contains the appropriate protection values. Multiply that value by the construction type factor found in Table 1301.6.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 1301.7 under Safety Parameter 1301.6.6, Vertical Openings, for fire safety, means of egress, and general safety. If the structure is a one-story building, enter a value of 2. Unenclosed vertical openings that conform to the requirements of Section 707 of the *International Building Code* shall not be considered in the evaluation of vertical openings.

**TABLE 1301.6.6(1)  
VERTICAL OPENING PROTECTION VALUE**

PROTECTION	VALUE
None (unprotected opening)	-2 times number of floors connected
Less than 1 hour	-1 times number of floors connected
1 to less than 2 hours	1
2 hours or more	2

**TABLE 1301.6.6(2)  
CONSTRUCTION-TYPE FACTOR**

F A C T O R	TYPE OF CONSTRUCTION								
	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
	1.2	1.5	2.2	3.5	2.5	3.5	2.3	3.3	7

**1301.6.6.1 Vertical opening formula.** The following formula shall be used in computing vertical opening value.

$$VO = PV \times CF \quad \text{(Equation 13-5)}$$

where:

VO = Vertical opening value.

PV = Protection value from Table 1301.6.6(1).

CF = Construction type factor from Table 1301.6.6(2).

**1301.6.7 HVAC systems.** Evaluate the ability of the HVAC system to resist the movement of smoke and fire beyond the point of origin. Under the categories in Section 1301.6.7.1, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.7, HVAC Systems, for fire safety, means of egress, and general safety.



**1301.6.7.1 Categories.** The categories for HVAC systems are:

1. Category a—Plenums not in accordance with Section 602 of the *International Mechanical Code*. -10 points.
2. Category b—Air movement in egress elements not in accordance with Section 1017.4 of the *International Building Code*. -5 points.
3. Category c—Both Categories a and b are applicable. -15 points.
4. Category d—Compliance of the HVAC system with Section 1017.4 of the *International Building Code* and Section 602 of the *International Mechanical Code*. 0 points.
5. Category e—Systems serving one story; or a central boiler/chiller system without ductwork connecting two or more stories. +5 points.

**1301.6.8 Automatic fire detection.** Evaluate the smoke detection capability based on the location and operation of automatic fire detectors in accordance with Section 907 of the *International Building Code* and the *International Mechanical Code*. Under the categories and occupancies in Table 1301.6.8, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.8, Automatic Fire Detection, for fire safety, means of egress, and general safety.

**TABLE 1301.6.8  
AUTOMATIC FIRE DETECTION VALUES**

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

**1301.6.8.1 Categories.** The categories for automatic fire detection are:

1. Category a—None.
2. Category b—Existing smoke detectors in HVAC systems and maintained in accordance with the *International Fire Code*.
3. Category c—Smoke detectors in HVAC systems. The detectors are installed in accordance with the requirements for new buildings in the *International Mechanical Code*.
4. Category d—Smoke detectors throughout all floor areas other than individual sleeping units, tenant spaces, and dwelling units.
5. Category e—Smoke detectors installed throughout the fire area.

**1301.6.9 Fire alarm systems.** Evaluate the capability of the fire alarm system in accordance with Section 907 of the *International Building Code*. Under the categories and occupancies in Table 1301.6.9, determine the appropriate value and enter that value into Table 1301.7 under Safety

Parameter 1301.6.9, Fire Alarm System, for fire safety, means of egress, and general safety.

**TABLE 1301.6.9  
FIRE ALARM SYSTEM VALUES**

OCCUPANCY	CATEGORIES			
	a	b <sup>a</sup>	c	d
A-1, A-2, A-3, A-4, B, E, R	-10	-5	0	5
F, M, S	0	5	10	15

a. For buildings equipped throughout with an automatic sprinkler system, add 2 points for activation by a sprinkler water-flow device.

**1301.6.9.1 Categories.** The categories for fire alarm systems are:

1. Category a—None.
2. Category b—Fire alarm system with manual fire alarm boxes in accordance with Section 907.3 of the *International Building Code* and alarm notification appliances in accordance with Section 907.9 of the *International Building Code*.
3. Category c—Fire alarm system in accordance with Section 907 of the *International Building Code*.
4. Category d—Category c plus a required emergency voice/alarm communications system and a fire command station that conforms to Section 403.8 of the *International Building Code* and contains the emergency voice/alarm communications system controls, fire department communication system controls, and any other controls specified in Section 911 of the *International Building Code* where those systems are provided.

**1301.6.10 Smoke control.** Evaluate the ability of a natural or mechanical venting, exhaust, or pressurization system to control the movement of smoke from a fire. Under the categories and occupancies in Table 1301.6.10, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.10, Smoke Control, for means of egress and general safety.

**TABLE 1301.6.10  
SMOKE CONTROL VALUES**

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-2, A-3	0	1	2	3	6	6
A-4, E	0	0	0	1	3	5
B, M, R	0	2 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>	4 <sup>a</sup>
F, S	0	2 <sup>a</sup>	2 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>	3 <sup>a</sup>

a. This value shall be 0 if compliance with Category d or e in Section 1201.6.8.1 has not been obtained.

**1301.6.10.1 Categories.** The categories for smoke control are:

1. Category a—None.
2. Category b—The building is equipped throughout with an automatic sprinkler system. Openings are provided in exterior walls at the rate of 20 square feet (1.86 m<sup>2</sup>) per 50 linear feet (15 240 mm) of exterior

wall in each story and distributed around the building perimeter at intervals not exceeding 50 feet (15 240 mm). Such openings shall be readily openable from the inside without a key or separate tool and shall be provided with ready access thereto. In lieu of operable openings, clearly and permanently marked tempered glass panels shall be used.

3. Category c—One enclosed exit stairway, with ready access thereto, from each occupied floor of the building. The stairway has operable exterior windows, and the building has openings in accordance with Category b.
4. Category d—One smokeproof enclosure and the building has openings in accordance with Category b.
5. Category e—The building is equipped throughout with an automatic sprinkler system. Each fire area is provided with a mechanical air-handling system designed to accomplish smoke containment. Return and exhaust air shall be moved directly to the outside without recirculation to other fire areas of the building under fire conditions. The system shall exhaust not less than six air changes per hour from the fire area. Supply air by mechanical means to the fire area is not required. Containment of smoke shall be considered as confining smoke to the fire area involved without migration to other fire areas. Any other tested and approved design that will adequately accomplish smoke containment is permitted.
6. Category f—Each stairway shall be one of the following: a smokeproof enclosure in accordance with Section 1020.1.7 of the *International Building Code*; pressurized in accordance with Section 909.20.5 of the *International Building Code*; or shall have operable exterior windows.

**1301.6.11 Means-of-egress capacity and number.** Evaluate the means-of-egress capacity and the number of exits available to the building occupants. In applying this section, the means of egress are required to conform to the following sections of the *International Building Code*: 1003.7, 1004, 1005.1, 1014.2, 1014.3, 1015.2, 1019, 1024.1, 1024.2, 1024.6, 1025.2, 1024.3, 1024.4 and 1026. The number of exits credited is the number that is available to each occupant of the area being evaluated. Existing fire escapes shall be accepted as a component in the means of egress when conforming to Section 705.3.1.2. Under the categories and occupancies in Table 1301.6.11, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.11, Means-of-Egress Capacity, for means of egress and general safety.

**1301.6.11.1 Categories.** The categories for means-of-egress capacity and number of exits are:

1. Category a—Compliance with the minimum required means-of-egress capacity or number of exits is achieved through the use of a fire escape in accordance with Section 605.3.1.2.

2. Category b—Capacity of the means of egress complies with Section 1003 of the *International Building Code*, and the number of exits complies with the minimum number required by Section 1019 of the *International Building Code*.
3. Category c—Capacity of the means of egress is equal to or exceeds 125 percent of the required means-of-egress capacity, the means of egress complies with the minimum required width dimensions specified in the *International Building Code*, and the number of exits complies with the minimum number required by Section 1019 of the *International Building Code*.
4. Category d—The number of exits provided exceeds the number of exits required by Section 1019 of the *International Building Code*. Exits shall be located a distance apart from each other equal to not less than that specified in Section 1015 of the *International Building Code*.
5. Category e—The area being evaluated meets both Categories c and d.

**TABLE 1301.6.11  
MEANS OF EGRESS VALUES**

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

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

**1301.6.12 Dead ends.** In spaces required to be served by more than one means of egress, evaluate the length of the exit access travel path in which the building occupants are confined to a single path of travel. Under the categories and occupancies in Table 1301.6.12, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.12, Dead Ends, for means of egress and general safety.

**TABLE 1301.6.12  
DEAD-END VALUES**

OCCUPANCY	CATEGORIES <sup>a</sup>		
	a	b	c
A-1, A-3, A-4, B, F, M, R, S	-2	0	2
A-2, E	-2	0	2

a. For dead-end distances between categories, the dead end value shall be obtained by linear interpolation.

**1301.6.12.1 Categories.** The categories for dead ends are:

1. Category a — Dead end of 35 feet (10 670 mm) in nonsprinklered buildings or 70 feet (21 340 mm) in sprinklered buildings.
2. Category b — Dead end of 20 feet (6096 mm); or 50 feet (15 240 mm) in Group B in accordance

with Section 1016.3, Exception 2 of the *International Building Code*.

- Category c — No dead ends; or ratio of length to width (*l/w*) is less than 2.5:1.

**1301.6.13 Maximum exit access travel distance to an exit.** Evaluate the length of exit access travel to an approved exit. Determine the appropriate points in accordance with the following equation and enter that value into Table 1301.7 under Safety Parameter 1301.6.13, Maximum Exit Access Travel Distance for means of egress and general safety. The maximum allowable exit access travel distance shall be determined in accordance with Section 1016 of the *International Building Code*.

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

**(Equation 13-6)**

**1301.6.14 Elevator control.** Evaluate the passenger elevator equipment and controls that are available to the fire department to reach all occupied floors. Elevator recall controls shall be provided in accordance with the *International Fire Code*. Under the categories and occupancies in Table 1301.6.14, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.14, Elevator Control, for fire safety, means of egress, and general safety. The values shall be zero for a single story building.

**TABLE 1301.6.14  
ELEVATOR CONTROL VALUES**

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

For SI: 1 foot = 304.8 mm.

NP = Not permitted.

**1301.6.14.1 Categories.** The categories for elevator controls are:

- Category a—No elevator.
- Category b—Any elevator without Phase I and II recall.
- Category c—All elevators with Phase I and II recall as required by the *International Fire Code*.
- Category d—All meet Category c; or Category b where permitted to be without recall; and at least one elevator that complies with new construction requirements serves all occupied floors.

**1301.6.15 Means-of-egress emergency lighting.** Evaluate the presence of and reliability of means-of-egress emergency lighting. Under the categories and occupancies in Table 1301.6.15, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.15,

Means-of-Egress Emergency Lighting, for means of egress and general safety.

**TABLE 1301.6.15  
MEANS-OF-EGRESS EMERGENCY LIGHTING VALUES**

NUMBER OF EXITS REQUIRED BY SECTIONS 1018.1 AND 1018.2 OF THE INTERNATIONAL BUILDING CODE	CATEGORIES		
	a	b	c
Two or more exits	NP	0	4
Minimum of one exit	0	1	1

NP = Not permitted.

**1301.6.15.1 Categories.** The categories for means-of-egress emergency lighting are:

- Category a—Means-of-egress lighting and exit signs not provided with emergency power in accordance with Section 2702 of the *International Building Code*.
- Category b—Means-of-egress lighting and exit signs provided with emergency power in accordance with Section 2702 of the *International Building Code*.
- Category c—Emergency power provided to means-of-egress lighting and exit signs, which provides protection in the event of power failure to the site or building.

**1301.6.16 Mixed occupancies.** Where a building has two or more occupancies that are not in the same occupancy classification, the separation between the mixed occupancies shall be evaluated in accordance with this section. Where there is no separation between the mixed occupancies or the separation between mixed occupancies does not qualify for any of the categories indicated in Section 1301.6.16.1, the building shall be evaluated as indicated in Section 1301.6, and the value for mixed occupancies shall be zero. Under the categories and occupancies in Table 1301.6.16, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.16, Mixed Occupancies, for fire safety and general safety. For buildings without mixed occupancies, the value shall be zero.

**TABLE 1301.6.16  
MIXED OCCUPANCY VALUES<sup>a</sup>**

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

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

**1301.6.16.1 Categories.** The categories for mixed occupancies are:

- Category a—Minimum 1-hour fire barriers between occupancies.
- Category b—Fire barriers between occupancies in accordance with Section 508.3.3 of the *International Building Code*.
- Category c—Fire barriers between occupancies having a fire-resistance rating of not less than

twice that required by Section 508.3.3 of the *International Building Code*.

**1301.6.17 Automatic sprinklers.** Evaluate the ability to suppress a fire based on the installation of an automatic sprinkler system in accordance with Section 903.3.1.1 of the *International Building Code*. “Required sprinklers” shall be based on the requirements of this code. Under the categories and occupancies in Table 1301.6.17, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.17, Automatic Sprinklers, for fire safety, means of egress divided by 2, and general safety. High-rise buildings defined in Section 403.1 of the *International Building Code* that undergo a change of occupancy to Group R shall be equipped throughout with an automatic sprinkler system in accordance with Section 403.2 of the *International Building Code* and Chapter 9 of the *International Building Code*.

**TABLE 1301.6.17  
SPRINKLER SYSTEM VALUES**

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

a. These options cannot be taken if Category a in Section 1301.6.18 is used.

**1301.6.17.1 Categories.** The categories for automatic sprinkler system protection are:

1. Category a—Sprinklers are required throughout; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903 of the *International Building Code*.
2. Category b—Sprinklers are required in a portion of the building; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903 of the *International Building Code*.
3. Category c—Sprinklers are not required; none are provided.
4. Category d—Sprinklers are required in a portion of the building; sprinklers are provided in such portion; the system is one that complied with the code at the time of installation and is maintained and supervised in accordance with Section 903 of the *International Building Code*.
5. Category e—Sprinklers are required throughout; sprinklers are provided throughout in accordance with Chapter 9 of the *International Building Code*.
6. Category f—Sprinklers are not required throughout; sprinklers are provided throughout in accordance with Chapter 9 of the *International Building Code*.

**1301.6.18 Standpipes.** Evaluate the ability to initiate attack on a fire by making supply of water available readily through the installation of standpipes in accordance with Section 905 of the *International Building Code*. “Required Standpipes” shall be based on the requirements of the *International Building Code*. Under the categories and occupancies in Table 1301.6.18, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.18, Standpipes, for fire safety, means of egress, and general safety.

**1301.6.18.1 Standpipe.** The categories for standpipe systems are:

1. Category a—Standpipes are required; standpipe is not provided or the standpipe system design is not in compliance with Section 905.3 of the *International Building Code*.
2. Category b—Standpipes are not required; none are provided.
3. Category c—Standpipes are required; standpipes are provided in accordance with Section 905 of the *International Building Code*.
4. Category d—Standpipes are not required; standpipes are provided in accordance with Section 905 of the *International Building Code*.

**TABLE 1301.6.18  
STANDPIPE SYSTEM VALUES**

OCCUPANCY	CATEGORIES			
	a <sup>a</sup>	b	c	d
A-1, A-3, F, M, R, S-1	-6	0	4	6
A-2	-4	0	2	4
A-4, B, E, S-2	-12	0	6	12

a. This option cannot be taken if Category a or Category b in Section 1301.6.17 is used.

**1301.6.19 Incidental use.** Evaluate the protection of incidental use areas in accordance with Section 508.2 of the *International Building Code*. Do not include those where this code requires suppression throughout the building, including covered mall buildings, high-rise buildings, public garages, and unlimited area buildings. Assign the lowest score from Table 1301.6.19 for the building or fire area being evaluated. If there are no specific occupancy areas in the building or fire area being evaluated, the value shall be zero.

**1301.7 Building score.** After determining the appropriate data from Section 1301.6, enter those data in Table 1301.7 and total the building score.

**1301.8 Safety scores.** The values in Table 1301.8 are the required mandatory safety scores for the evaluation process listed in Section 1301.6.

**1301.9 Evaluation of building safety.** The mandatory safety score in Table 1301.8 shall be subtracted from the building score in Table 1301.7 for each category. Where the final score for any category equals zero or more, the building is in compliance with the requirements of this section for that category. Where the final score for any category is less than zero, the building is not in compliance with the requirements of this section.



**1301.9.1 Mixed occupancies.** For mixed occupancies, the following provisions shall apply:

1. Where the separation between mixed occupancies does not qualify for any category indicated in Section 1301.6.16, the mandatory safety scores for the occupancy with the lowest general safety score in Table 1301.8 shall be utilized. (See Section 1301.6.)

2. Where the separation between mixed occupancies qualifies for any category indicated in Section 1301.6.16, the mandatory safety scores for each occupancy shall be placed against the evaluation scores for the appropriate occupancy.

**TABLE 1301.6.19  
INCIDENTAL USE AREA VALUES<sup>a</sup>**

PROTECTION REQUIRED BY TABLE 508.2 OF THE INTERNATIONAL BUILDING CODE	PROTECTION PROVIDED						
	None	1 hour	AFSS	AFSS with SP	1 hour and AFSS	2 hours	2 hours and AFSS
2 hours and AFSS	-4	-3	-2	-2	-1	-2	0
2 hours, or 1 hour and AFSS	-3	-2	-1	-1	0	0	0
1 hour and AFSS	-3	-2	-1	-1	0	-1	0
1 hour	-1	0	-1	-1	0	0	
1 hour, or AFSS with SP	-1	0	-1	-1	0	0	0
AFSS with SP	-1	-1	-1	-1	0	-1	0
1 hour or AFSS	-1	0	0	0	0	0	0

a. AFSS = Automatic fire suppression system; SP = Smoke partitions (See IBC Section 508.2.2.1).  
Note: For Table 1301.7, see page 66.

**TABLE 1301.8  
MANDATORY SAFETY SCORES<sup>a</sup>**

OCCUPANCY	FIRE SAFETY (MFS)	MEANS OF EGRESS (MME)	GENERAL SAFETY (MGS)
A-1	20	31	31
A-2	21	32	32
A-3	22	33	33
A-4, E	29	40	40
B	30	40	40
F	24	34	34
M	23	40	40
R	21	38	38
S-1	19	29	29
S-2	29	39	39

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

**TABLE 1301.9  
EVALUATION FORMULAS<sup>a</sup>**

FORMULA	T1201.7	T1201.8	SCORE	PASS	FAIL
FS - MFS > 0	_____ (FS) -	_____ (MFS)	=	_____	_____
ME - MME ≥ 0	_____ (ME) -	_____ (MME)	=	_____	_____
GS - MGS ≥ 0	_____ (GS) -	_____ (MGS)	=	_____	_____

a. FS = Fire Safety                      MFS = Mandatory Fire Safety  
ME = Means of Egress                MME = Mandatory Means of Egress  
GS = General Safety                    MGS = Mandatory General Safety

**PERFORMANCE COMPLIANCE METHODS**

**TABLE 1301.7  
SUMMARY SHEET—BUILDING CODE**

Existing occupancy _____	Proposed occupancy _____
Year building was constructed _____	Number of stories _____ Height in feet _____
Type of construction _____	Area per Floor _____
Percentage of frontage increase _____ %	Percentage of height reduction _____ %
Completely suppressed: Yes _____ No _____	Corridor wall rating _____
Compartmentation: Yes _____ No _____	Required door closers: _____ Yes _____ No _____
Fire-resistance rating of vertical opening enclosures _____	
Type of HVAC system _____	Serving number of floors _____
Automatic fire detection: Yes _____ No _____	Type of location _____
Fire alarm system: Yes _____ No _____	Type _____
Smoke control: Yes _____ No _____	Type _____
Adequate exit routes: Yes _____ No _____	Dead ends: Yes _____ No _____
Maximum exit access travel distance _____	Elevator controls: Yes _____ No _____
Means-of-egress emergency lighting: Yes _____ No _____	Mixed occupancies: Yes _____ No _____

SAFETY PARAMETERS	FIRE SAFETY (FS)	MEANS OF EGRESS (ME)	GENERAL SAFETY (GS)
1301.6.1 Building Height 1301.6.2 Building Area 1301.6.3 Compartmentation			
1301.6.4 Tenant and Dwelling Unit Separations 1301.6.5 Corridor Walls 1301.6.6 Vertical Openings			
1301.6.7 HVAC Systems 1301.6.8 Automatic Fire Detection 1301.6.9 Fire Alarm System			
1301.6.10 Smoke Control 1301.6.11 Means-of-Egress Capacity 1301.6.12 Dead Ends	**** **** ****		
1301.6.13 Maximum Exit Access Travel Distance 1301.6.14 Elevator Control 1301.6.15 Means-of-Egress Emergency Lighting	**** ****		
1301.6.16 Mixed Occupancies 1301.6.17 Automatic Sprinklers 1301.6.18 Standpipes 1301.6.19 Incidental Use Area Protection		**** Divide by 2	
Building Score—Total Value			

\*\*\*\*No applicable value to be inserted