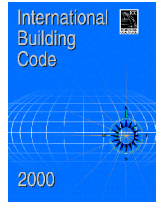




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PLAN REVIEW WORKSHEET

HEIGHT AND AREA - CHAPTER 5

ALLOWABLE AREA

Occupancy groups _____ if mixed occupancy (separated and nonseparated) Main use _____
Minimum Construction type _____

MIXED OCCUPANCY - NONSEPARATED USES (302.3.2)

The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

MIXED OCCUPANCY - SEPARATED USES (302.3.3)

For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy "A"}}{\text{Allowable Area of Occupancy "A"}} + \frac{\text{Actual Area of Occupancy "B"}}{\text{Allowable Area of Occupancy "B"}} \leq 1$$

Story No.	Description and Use	(A) Building Area Per Story On Plans	(B) Table 503 ⁵ Area	(C) Area for Open Space Increase ¹ $\frac{(B) \times I_f}{100}$	(D) Area for Sprinkler Increase ² $\frac{(B) \times I_s}{100}$	(E) Allowable Area (B) + (C) = (D) or Unlimited ³	(F) Maximum Building Area ⁴

¹Open space area increases from Section 506.2 are computed thus:

- a. Perimeter which fronts a public way or open space having 20 feet open minimum width = _____ (F)
- b. Total Building Perimeter = _____ (P)
- c. Ratio (F/P) = _____ (F/P)
- d. W = Minimum width of public way. = _____ (W)
- e. Percent of frontage increase
 $I_f = 100 (F/P - .25) \times W/30$ = _____ (%)

²The sprinkler increase per Section 506.3 is as follows:

- a. multistory building I_s = 200 percent
- b. single story building I_s = 300 percent

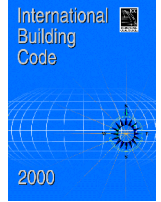
³Unlimited area applicable under conditions of sections Group B, F, M, S, A-4 (507.1, 507.2, 507.3, 507.5); Group E (507.7); Group A motion picture (507.8); Malls (402.6); and H-2 aircraft paint hangers (507.6).

⁴Maximum Building Area (F) = total number of stories in the building x E but not greater than 3 x E.

⁵The maximum area of parking garages must comply with 406.3.5. The maximum area of air traffic control towers must comply with 412.1.2.



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**HEIGHT AND AREA - CHAPTER 5 (continued)
ALLOWABLE HEIGHT**

	ALLOWABLE (Table 503)	INCREASE FOR SPRINKLERS ⁴	SHOWN ON PLANS	O.K., COMMENT
Type of Construction	Type _____		Type _____	
Building Height in Feet ^{1, 2, 4, 9, 10, 12}	Feet _____	Feet = H + 20' = _____	Feet _____	
Building Height in Stories ^{3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13}	Stories	Stories + 1 = _____	Stories	

¹See definition "Height, Building" (Section 502)

²See Height Modifications, (Section 504 and 508)

³See definition "Story" (Section 502)

⁴Automatic Sprinkler Increase (Section 504.2)

⁵Mezzanine Exception (Section 505.1)

⁶Basements Exception (Section 503.1.1)

⁷Penthouse story exception (Section 1509.2)

⁸For mixed occupancies (nonseparated uses), compare the allowable height in stories for the main occupancy to the actual building height in stories, than check for all other occupancies to ascertain that no occupancy is located at a story height greater than allowed by Table 503 for that occupancy. (Section 302.3.2)

⁹Hazardous H-2, and H-3 story limitations (Section 415.5)

¹⁰Special industrial occupancies (Section 503.1.2)

¹¹Unlimited height for B, M, R occupancies (Section 508.4)

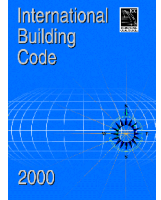
¹²Residential R-2 height increase (Section 508.6, 508.7)

¹³Group S-2 enclosed parking garages (Section 508.2) and parking garages (Section 406.3.5, 406.4.1)

PLAN CHECK NOTES AND COMPUTATIONS:



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CONSTRUCTION TYPE: _____

FIRE PROTECTION REQUIREMENTS

TABLE 601

Fire-Resistance Rating Requirements for Building Elements (hours)

BUILDING ELEMENT	RATING REQUIRED ^d	RATING PROVIDED	O.K., COMMENT or N/A
Structural frame ^{a, b} Including columns, girders, trusses			
Bearing walls Exterior ^f Interior ^b			
Nonbearing walls and partitions Exterior Interior ^e	See Table 602 See Section 602		
Floor construction Including supporting beams and joists			
Roof construction ^c Including supporting beams and joists			

- a. The structural frame shall be considered to be the columns and the girders, beams, trusses and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor or roof panels which have no connection to the columns shall be considered secondary members and not a part of the structural frame.
- b. Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only (Type 1A and 1B).
- c.
 1. Except in Factory-Industrial (F-1), Hazardous (H), Mercantile (M) and Moderate-Hazard Storage (S-1) occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
 2. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
 3. In Type I and Type II construction, fire-retardant-treated wood shall be allowed in buildings not over two stories including girders and trusses as part of the roof construction.
- d. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted (Type IIA, IIIA, and VA).
- e. For interior nonbearing partitions in Type IV construction, also see Section 602.4.6.
- f. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

CONSTRUCTION TYPE _____ GROUP TYPE^b _____

Table 602

Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distances

FIRE SEPARATION DISTANCE (feet)	WALL RATING REQUIRED ^{a, d}	WALL RATING PROVIDED	O.K., COMMENT or N/A
< 5 ^c			
\$ 5 < 10			
\$ 10 < 30			
\$ 30			

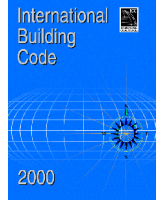
- a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.
- b. Group R-3 and Group U when used as accessory to Group R-3, as applicable in Section 101.2 shall not be required to have a fire-resistance rating where fire separation distance is 3 feet for party walls.
- c. See Section 503.2 for party walls.
- d. See Appendix D for Fire District.



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FIRE PROTECTION REQUIREMENTS**

**TABLE 704.8
EXTERIOR WALL OPENINGS**

FIRE SEPARATION DISTANCE (ft)	UNPROTECTED OPENING AREA		PROTECTED OPENING AREA		UNITY CHECK (i)	O.K., COMMENT or N/A
	Allowable ^a (a _u)	Actual (A _u)	Allowable ^a (a)	Actual (A)		
0 to 3 ^{e,h}	Not Permitted ^g		Not Permitted			
Greater than 3 to 5 ^{b, f}	Not Permitted ^{b, g}		15%			
Greater than 5 to 10 ^{b, d, f}	10% ^g		25%			
Greater than 10 to 15 ^{b, c, d, f}	15% ^g		45%			
Greater than 15 to 20 ^{c, f}	25% ^g		75%			
Greater than 20 to 25 ^{c, f}	45% ^g		No Limit			
Greater than 25 to 30 ^{c, f}	70% ^g		No Limit			
Greater than 30	No Limit		No Limit			

- a. Values given are percentage of the area of the exterior wall.
- b. For occupancies in Group R-3, as applicable in Section 101.2, the maximum percentage of unprotected and protected exterior wall openings shall be 25 percent.
- c. The area of openings in an open parking structure with a fire separation distance of greater than 10 feet shall not be limited.
- d. For occupancies in Group H-2 or H-3, unprotected openings shall not be permitted for openings with a fire separation distance of 15 feet or less.
- e. For requirements for fire walls for buildings with differing roof heights, see Section 705.6.1.
- f. The area of unprotected and protected openings is not limited for occupancies in Group R-3, as applicable in Section 101.2, with a fire separation distance greater than 5 feet.
- g. Buildings whose exterior bearing wall, exterior nonbearing wall and exterior structural frame are not required to be fire-resistance rated shall be permitted to have unlimited unprotected openings.
- h. Includes accessory buildings to Group R-3 as applicable in Section 101.2.
- i. Allowable area of opening

$$\frac{A}{a} + \frac{A_u}{a_u} \leq 1.0 \quad (\text{Equation 7-2})$$

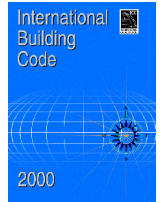
where:

- A = Actual area of protected openings, or the equivalent area of protected openings A_e (See Section 704.7).
- a = Allowable area of protected openings.
- A_u = Actual area of unprotected openings.
- a_u = Allowable area of unprotected openings.



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FIRE PROTECTION REQUIREMENTS**

**TABLE 714.2
OPENING PROTECTIVE FIRE-PROTECTION RATINGS**

TYPE OF ASSEMBLY	REQUIRED ASSEMBLY RATING (hours)	ASSEMBLY RATING PROVIDED	MINIMUM OPENING PROTECTION ASSEMBLY (hours)	OPENING RATING PROVIDED	O.K., COMMENT or N/A
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4		3		
	3		3 ^b		
	2		1 1/2		
	1 1/2		1 1/2		
Fire barriers of 1-hour fire-resistance-rated construction: Shaft and exit enclosure walls	1		1		
	1		3/4		
Fire partitions: Exit access corridor enclosure wall	1		0.33 ^a		
Other fire partitions	1		3/4		
Exterior walls	3		3/4		
	2		1 1/2		
	1		3/4		

- a. For testing requirements, see Section 714.2.3.
- b. Two doors, each with a fire-protection rating of 1.5 hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire-protection rating to one 3-hour fire door.

**EXTERIOR FIRE WINDOW ASSEMBLIES
(Section 714.3.7)**

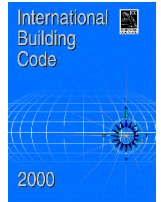
WALL RATING (Hr.)	REQUIRED OPENING RATING (Hr.)	ACTUAL OPENING RATING (Hr.)	O.K., COMMENT or N/A
>1 ^{a, b}	1 1/2		
1 ^{a, c}	3/4		
note d	3/4		

- a. Located in wall required by Table 602 to have a fire-resistance rating.
- b. Required by 704.12 to be protected.
- c. Required by 704.8 to be protected.
- d. Required by 704.8, 704.9, and 704.10 to be protected.

WORK SHEETS



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EXIT REQUIREMENTS

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	(a)	(b)	(c)		EXIT WIDTH (in) ^{2,3,4,5,6}			
	AREA ¹ sq. ft.	AREA ¹ PER OCCUPANT (TABLE 1003.2.2.2)	EGRESS WIDTH PER OCCUPANT (TABLE 1003.2.3)		REQUIRED WIDTH (SECTION 1003.2.3) (a ÷ b) x c		ACTUAL WIDTH SHOWN ON PLANS	
			STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL

- ¹ See Table 1003.2.2.2 to determine whether net or gross area is applicable.
- ² See definition "Area, Gross" and "Area, Net" (Section 1002)
- ³ Minimum stairway width (Section 1003.3.3); minimum corridor width (Section 1004.3.2.2), minimum door width (Section 1003.3.1)
- ⁴ Minimum width of exit passageway (Section 1005.3.3)
- ⁵ See Section 1003.2.2.7 for converging exits.
- ⁶ The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1003.2.3).
- ⁶ Assembly occupancies (Section 1008)

NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESCRIPTION	MINIMUM ² NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS ^{1,3} (SECTION 1004.1)	
	REQUIRED (SECTION 1005.2.1)	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1004.2.4)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS

- ¹ Corridor dead ends (Section 1004.3.2.3).
- ² Single exits (Table 1005.2.2).
- ³ Common path of travel (Section 1004.2.5).