Wisconsin Commercial Building Code

2009 IBC Structural Changes
Chapters 16 through 25, 31 and 35
Also Greenhouses & Soil Information

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Wisconsin Commercial Building Code (WCBC)
&
2009 International Building Code (IBC)

STRUCTURALLY RELATED

IBC CHAPTERS

“CORE” CHAPTERS

16 – STRUCTURAL DESIGN REQUIREMENTS

17 – STRUCTURAL TESTS AND SPECIAL INSPECTIONS

18 – SOILS AND FOUNDATIONS

19 – CONCRETE

20 – ALUMINUM

21 – MASONRY

22 – STEEL

23 – WOOD

24 – GLASS AND GLAZING

25 – GYPSUM BOARD LATH AND PLASTER

IBC Chapter 16

- The most significant relevant change to Chapter 16 is the new simplified alternate all heights wind design method based on ASCE 7-05 Method 2 analytical procedure as added in Section 1609.6. An example will follow.
- Many changes were made to Chapter 16 that may not be considered significant, but code users should be aware of the importance of these as well.

IBC Chapter 16

- **IBC Table 1604.5**

Occupancy Category of Buildings and Other Structures

Changes were made to Occupancy Category III and IV buildings to align the description of occupancy classifications with those used in the non structural provisions.

TABLE 1604.5
OCCUPANCY CATEGORY OF BUILDINGS AND OTHER STRUCTURES

OCCUPANCY CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities.
II	Buildings and other structures except those listed in Occupancy Categories I, III and IV
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing elementary school, secondary school or day care facilities with an occupant load greater than 250. • Buildings and other structures containing adult education facilities, such as colleges and universities with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident patients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000[a]. • Power-generating stations, water treatment facilities for potable water, waste water treatment facilities and other public utility facilities not included in Occupancy Category IV. • Buildings and other structures not included in Occupancy Category IV containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released.
IV	Buildings and other structures designated as essential facilities, including but not limited to: • Group I-2 occupancies having surgery or emergency treatment facilities. • Fire, rescue, ambulance and police stations and emergency vehicle garages. • Designated earthquake, hurricane or other emergency shelters. • Designated emergency preparedness, communications and operations centers and other facilities required for emergency response. • Power-generating stations and other public utility facilities required as emergency backup facilities for Occupancy Category IV structures. • Structures containing highly toxic materials as defined by Section 307 where the quantity of the material exceeds the maximum allowable quantities of Table 307.1(2). • Aviation control towers, air traffic control centers and emergency aircraft hangars. • Buildings and other structures having critical national defense functions. • Water storage facilities and pump structures required to maintain water pressure for fire suppression.

a. For purposes of occupant load calculation, occupancies required by Table 1004.1.1 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.

IBC Chapter 16

- **IBC Section 1604.8.2 Wall Anchorage**

The requirement that concrete and masonry walls be anchored to floors and roofs that provide lateral support for the wall for a minimum strength level horizontal seismic force of 280 pounds per linear foot (plf) was replaced with a reference to the minimum design strength required by ASCE 7-05 Section 11.7.3.

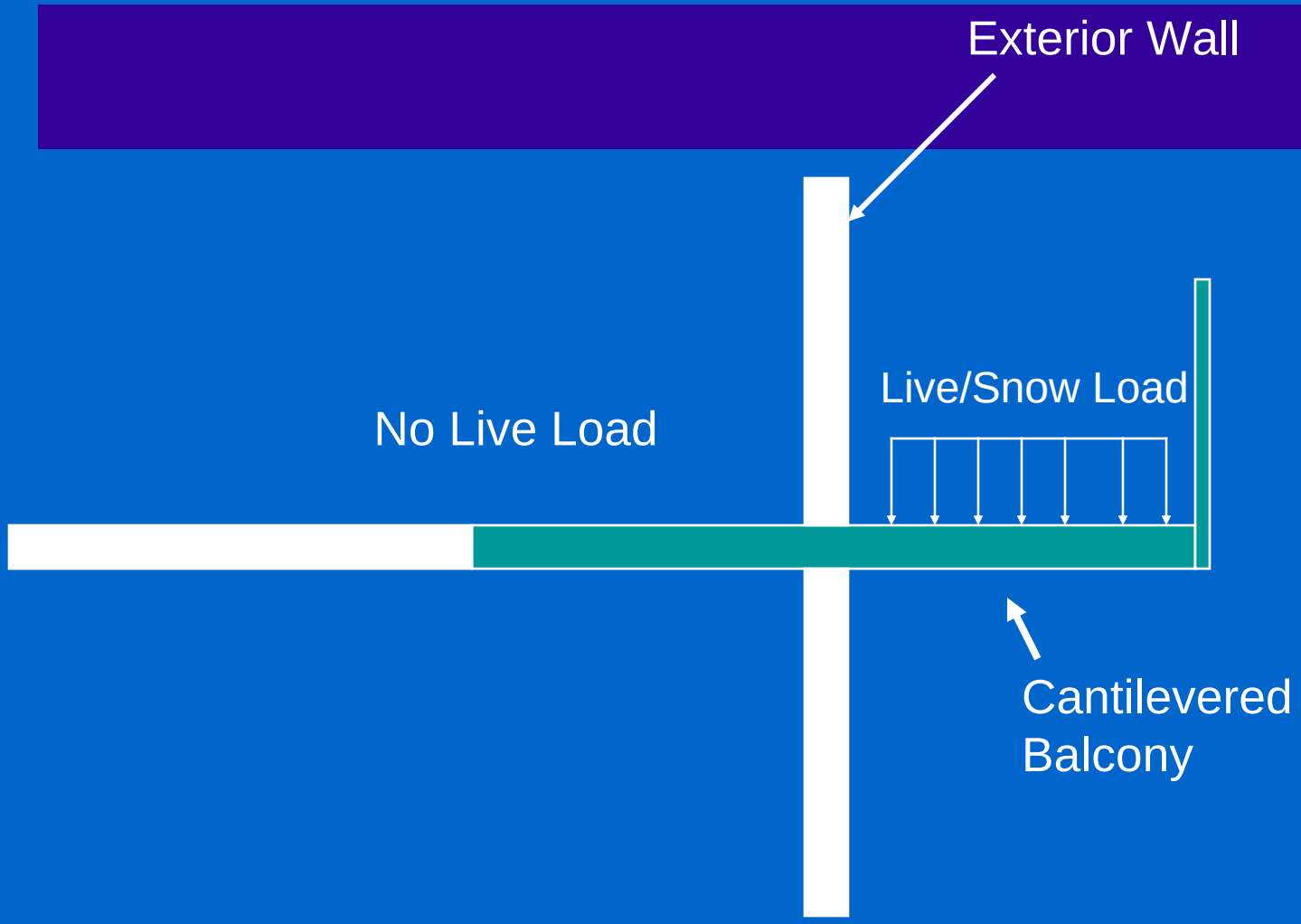
The code language now requires all walls, not just concrete and masonry walls, to be anchored to floors, roofs, and other structural elements that provide lateral support for the wall.

IBC Chapter 16

- **IBC Section 1604.8.3**

Decks

The code now addresses the condition where the load on a cantilevered portion of a deck span could produce uplift at the back-span support and added snow load since it is conceivable that snow load could control the design of the deck.


Exterior Wall
Live/Snow Load
No Live Load
Cantilevered
Balcony

Deck

Balcony

IBC Chapter 16

- **IBC Section 1605.3.1,Exception 2**

Basic Load Combinations

The 2 sets of allowable stress design **load combinations** now prescribe that roof live loads of 30 pounds per square foot (PSF) or less need not be combined with seismic loads.

IBC Chapter 16

- **IBC Table 1607.1**
  Decks and Balconies

Decks and balconies now use the same **live load** as the occupancy they serve, and the previous distinction between decks and balconies was removed by deleting their definitions.

TABLE 1607.1
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_o, AND MINIMUM CONCENTRATED LIVE LOADS[g]

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
1. Apartments (see residential)	—	—
2. Access floor systems Office use Computer use	 50 100	 2,000 2,000
3. Armories and drill rooms	150	—
4. Assembly areas and theaters Fixed seats (fastened to floor) Follow spot, projections and control rooms Lobbies Movable seats Stages and platforms Other assembly areas	 60 50 100 100 125 100	 —
5. Balconies (exterior) and decks[h]	Same as occupancy served	—
6. Bowling alleys	75	—
7. Catwalks	40	300
8. Cornices	60	—
9. Corridors, except as otherwise indicated	100	—
10. Dance halls and ballrooms	100	—
11. Dining rooms and restaurants	100	—
12. Dwellings (see residential)	—	—

TABLE 1607.1—c
MINIMUM UNIFORMLY DISTRIBUT
MINIMUM CONCENTRATE

OCCUPANCY OR USE
23. Manufacturing Heavy Light
24. Marquees
25. Office buildings Corridors above first floor File and computer rooms shall be designed for heavier loads based on anticipated occupancy Lobbies and first-floor corridors Offices
26. Penal institutions Cell blocks Corridors
27. Residential One- and two-family dwellings Uninhabitable attics without storage[i] Uninhabitable attics with limited storage[i, j, k] Habitable attics and sleeping areas All other areas Hotels and multifamily dwellings Private rooms and corridors serving them Public rooms and corridors serving them
28. Reviewing stands, grandstands and bleachers
29. Roofs

IBC Chapter 16

- **IBC Section 1607.11.2.2**
  Reduction of Roof Live Loads

The code now specifically prohibits live load reduction for live loads of 100 PSF or more at areas of roofs classified as Group A occupancies.

IBC Chapter 16

- **IBC Section 1607.7.3**
  Vehicle Barrier System

The point of application of passenger vehicles loading for barrier design in parking garages was modified and a second loading condition was added based on actual bumper height data of modern passenger vehicles.

IBC Chapter 16

- **IBC Section 1607.7.3**
  Vehicle Barrier System (Cont'd)

First Condition:

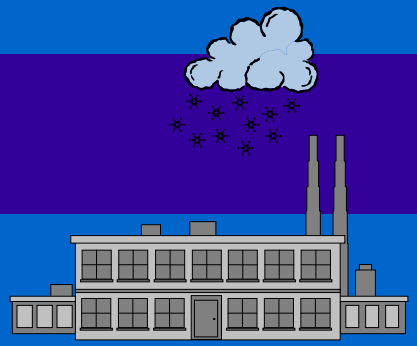
6,000 LBS. at 1 ft. 6 inches above the floor or ramp surface.

Second Condition:

6,000 LBS. at 2 ft. 3 inches above the floor or ramp surface.

IBC Chapter 16

•IBC Section 1608 Snow Loads



- No changes.
  Based on Chapter 7 of ASCE 7-05.

- The department did retain:
  - Alternate unbalanced snow load on a hip or gable roof. [Current SPS 362.1608(1)]
  - Addressing snow drift loads from adjacent taller roofs. [Current SPS 362.1608(2)]

ASCE 7 -05 Section 7.6.1

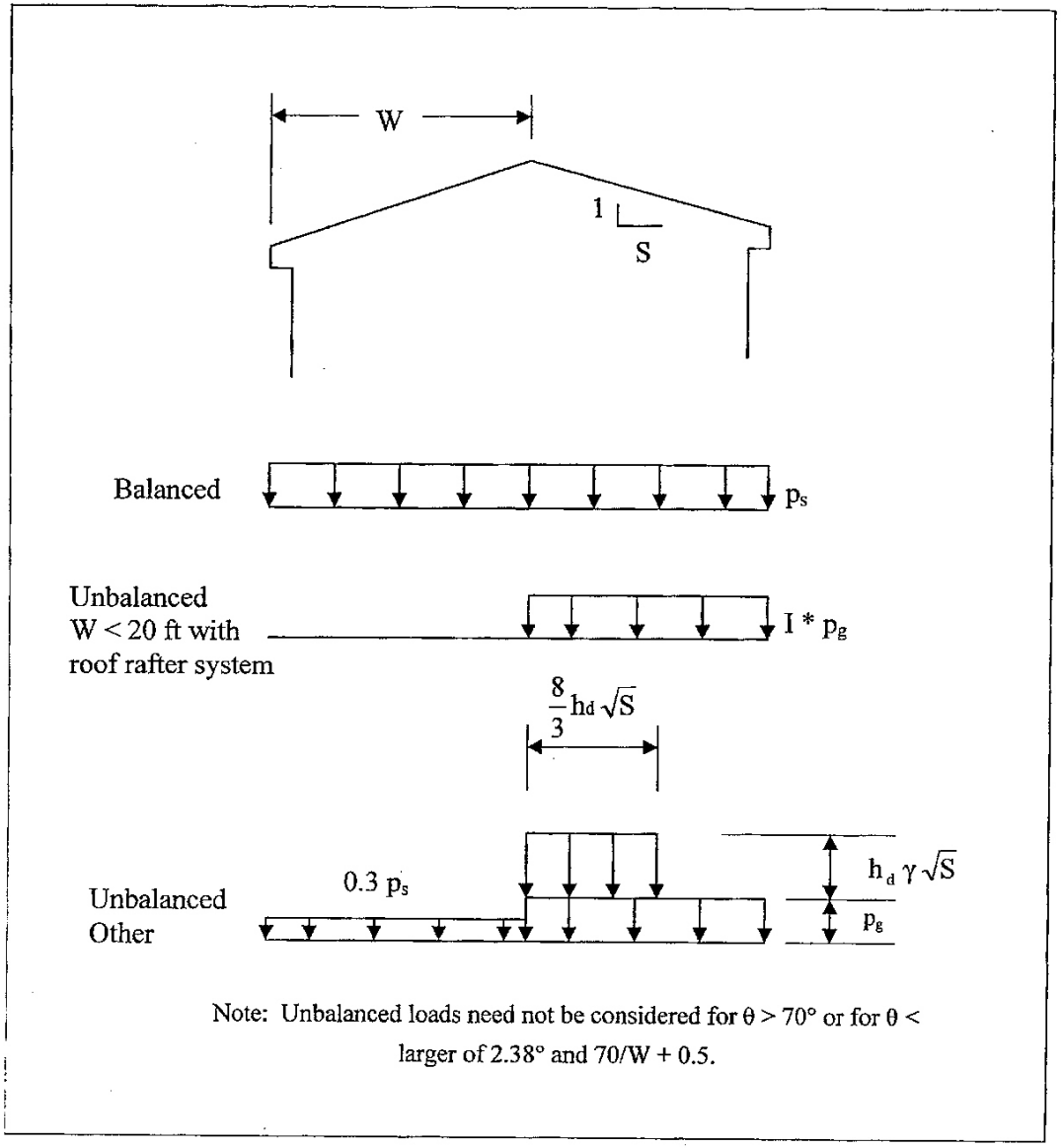
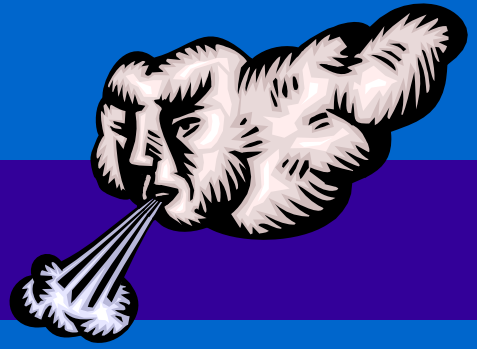


Figure 7-5
Balanced and Unbalanced Snow Loads for Hip and Gable Roofs

IBC Chapter 16

IBC Section 1609
Wind Loads (Ch. 6,ASCE 7)



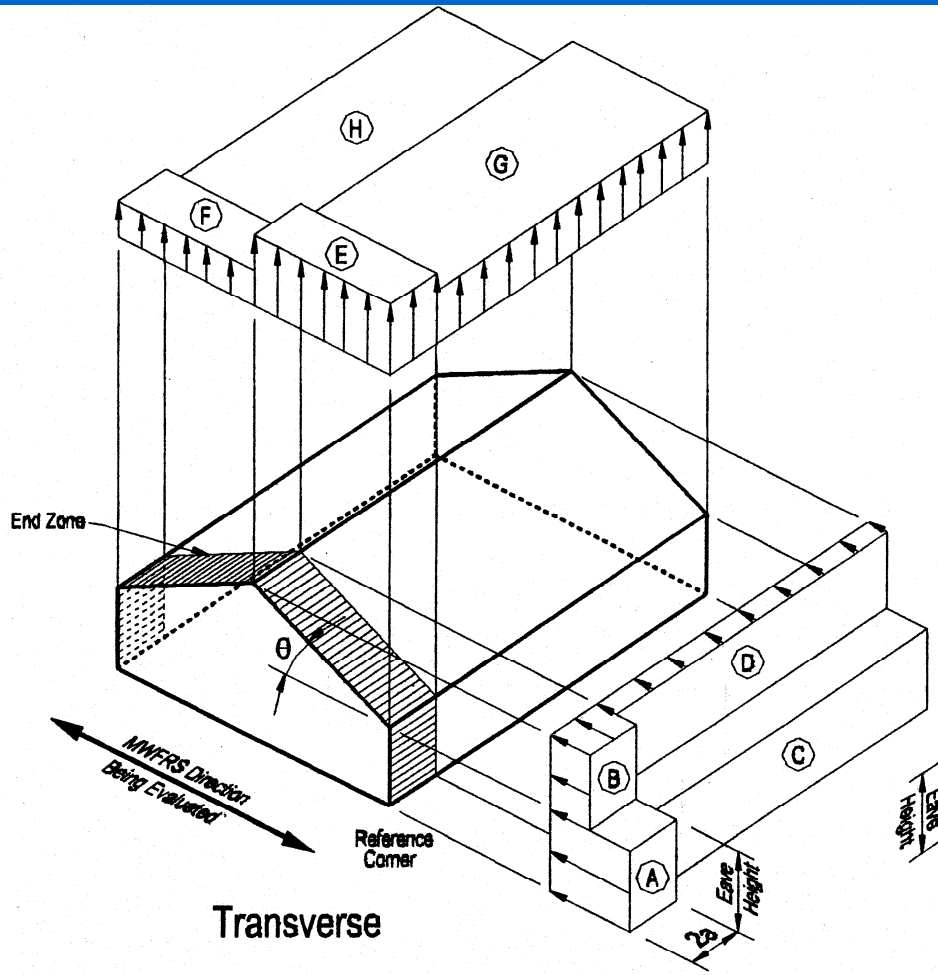
- Wind Speed - 90 MPH (3-second gust)
  IBC Figure 1609

- Design Procedures
  - ASCE Simplified for Low-Rise (6.4)
  - ASCE Analytical Procedure (6.5)
  - ASCE Wind Tunnel (6.6)
  - **IBC Simplified for All-Heights Analytical**

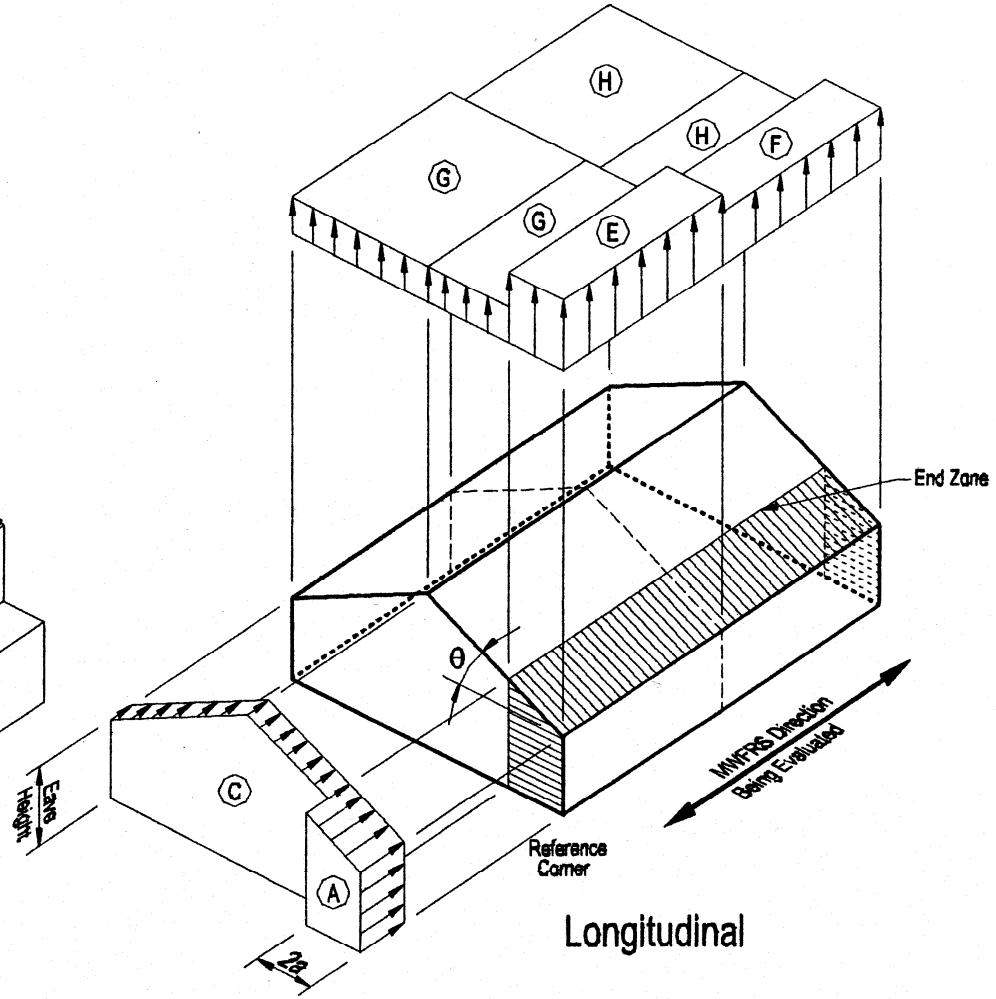
Main Wind Force Resisting System – Method 1		h ≤ 60 ft.
Figure 6-2 (cont'd)	Design Wind Pressures	Walls & Roofs
Enclosed Buildings		

Simplified Design Wind Pressure , p_{S30} (psf) *(Exposure B at h = 30 ft., Kzt = 1.0, with I = 1.0)*

Basic Wind Speed (mph)	Roof Angle (degrees)	Load Case	Zones									
			Horizontal Pressures				Vertical Pressures				Overhangs	
			A	B	C	D	E	F	G	H	EOH	GOH
85	0 to 5°	1	11.5	-5.9	7.6	-3.5	-13.8	-7.8	-9.6	-6.1	-19.3	-15.1
	10°	1	12.9	-5.4	8.6	-3.1	-13.8	-8.4	-9.6	-6.5	-19.3	-15.1
	15°	1	14.4	-4.8	9.6	-2.7	-13.8	-9.0	-9.6	-6.9	-19.3	-15.1
	20°	1	15.9	-4.2	10.6	-2.3	-13.8	-9.6	-9.6	-7.3	-19.3	-15.1
	25°	1	14.4	2.3	10.4	2.4	-6.4	-8.7	-4.6	-7.0	-11.9	-10.1
		2	------	------	------	------	-2.4	-4.7	-0.7	-3.0	------	------
	30 to 45	1	12.9	8.8	10.2	7.0	1.0	-7.8	0.3	-6.7	-4.5	-5.2
		2	12.9	8.8	10.2	7.0	5.0	-3.9	4.3	-2.8	-4.5	-5.2
90	0 to 5°	1	12.8	-6.7	8.5	-4.0	-15.4	-8.8	-10.7	-6.8	-21.6	-16.9
	10°	1	14.5	-6.0	9.6	-3.5	-15.4	-9.4	-10.7	-7.2	-21.6	-16.9
	15°	1	16.1	-5.4	10.7	-3.0	-15.4	-10.1	-10.7	-7.7	-21.6	-16.9
	20°	1	17.8	-4.7	11.9	-2.6	-15.4	-10.7	-10.7	-8.1	-21.6	-16.9
	25°	1	16.1	2.6	11.7	2.7	-7.2	-9.8	-5.2	-7.8	-13.3	-11.4
		2	------	------	------	------	-2.7	-5.3	-0.7	-3.4	------	------
	30 to 45	1	14.4	9.9	11.5	7.9	1.1	-8.8	0.4	-7.5	-5.1	-5.8
		2	14.4	9.9	11.5	7.9	5.6	-4.3	4.8	-3.1	-5.1	-5.8
	0 to 5°	1	15.9	-8.2	10.5	-4.9	-19.1	-10.8	-13.3	-8.4	-26.7	-20.9
	10°	1	17.9	-7.4	11.9	-4.3	-19.1	-11.6	-13.3	-8.9	-26.7	-20.9



Transverse



Longitudinal

IBC Chapter 16

- **IBC Section 1609.1.1**
  Determination of Wind Loads (Ch. 6,ASCE 7)

The reference to the outdated ICC legacy Standard SSTD 10—99 was replaced with a reference to the new ICC—600 Standard for Residential Construction in High Wind Regions.

Added New Exceptions and Limitations

- TIA-222-G-05
- Wind Tunnel Test

IBC Chapter 16

- **IBC Section 1609.6**
  Alternate All-Heights Method to **Ch. 6, ASCE 7**

New “Simplified” design method based on ASCE 7-05 Method 2 - Analytical Procedure.

1609.6 Alternate all-heights method. The alternate wind design provisions in this section are simplifications of the ASCE 7 Method 2—Analytical Procedure.

1609.6.1 Scope. As an alternative to ASCE 7 Section 6.5, the following provisions are permitted to be used to determine the wind effects on regularly shaped buildings, or other structures that are regularly shaped, which meet all of the following conditions:

1. The building or other structure is less than or equal to 75 feet (22 860 mm) in height with a height-to-least-width ratio of 4 or less, or the building or other structure has a fundamental frequency greater than or equal to 1 hertz.
2. The building or other structure is not sensitive to dynamic effects.
3. The building or other structure is not located on a site for which channeling effects or buffeting in the wake of upwind obstructions warrant special consideration.
4. The building shall meet the requirements of a simple diaphragm building as defined in ASCE 7 Section 6.2, where wind loads are only transmitted to the main wind-force-resisting system (MWFRS) at the diaphragms.
5. For open buildings, multispan gable roofs, stepped roofs, sawtooth roofs, domed roofs, roofs with slopes greater than 45 degrees (0.79 rad), solid free-standing walls and solid signs, and rooftop equipment, apply ASCE 7 provisions.

1609.6.1.1 Modifications. The following modifications shall be made to certain subsections in ASCE 7: in Sec-

$_{net}$ = of wind loads on buildings or other structures or their components and cladding, in psf (kN/m²).

q_s = Wind stagnation pressure in psf (kN/m²) in accordance with Table 1609.6.2(1).

1609.6.3 Design equations. When using the alternative all-heights method, the MWFRS, and components and cladding of every structure shall be designed to resist the effects of wind pressures on the building envelope in accordance with Equation 16-34.

$$P_{net} = q_s K_z C_{net} [IK_{zt}] \qquad \textbf{(Equation 16-34)}$$

Design wind forces for the MWFRS shall not be less than 10 psf (0.48 kN/m²) multiplied by the area of the structure projected on a plane normal to the assumed wind direction (see ASCE 7 Section 6.1.4 for criteria). Design net wind pressure for components and cladding shall not be less than 10 psf (0.48 kN/m²) acting in either direction normal to the surface.

1609.6.4 Design procedure. The MWFRS and the components and cladding of every building or other structure shall be designed for the pressures calculated using Equation 16-34.

1609.6.4.1 Main wind-force-resisting systems. The MWFRS shall be investigated for the torsional effects identified in ASCE 7 Figure 6-9.

1609.6.4.2 Determination of K_z and K_{zt}. Velocity pressure exposure coefficient, K_z, shall be determined in accordance with ASCE 7 Section 6.5.6.6 and the topographic factor, K_{zt}, shall be determined in accordance with ASCE 7 Section 6.5.7.

TABLE 1609.6.2(1)
WIND STAGNATION PRESSURE (q_s) AT STANDARD HEIGHT OF 33 FEET[a]

BASIC WIND SPEED (mph)	85	90	100	105	110	120	125	130	140	150	160	170
PRESSURE, q_s (psf)	18.5	20.7	25.6	28.2	31.0	36.9	40.0	43.3	50.2	57.6	65.5	74.0

For SI: 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s, 1 pound per square foot = 47.88 Pa.
a. For basic wind speeds not shown, use $q_s = 0.00256\ V^2$.

3. An underlayment shall be installed in accordance with Chapter 15.
4. The tile shall be single lapped interlocking with a minimum head lap of not less than 2 inches (51 mm).
5. The length of the tile shall be between 1.0 and 1.75 feet (305 mm and 533 mm).
6. The exposed width of the tile shall be between 0.67 and 1.25 feet (204 mm and 381 mm).
7. The maximum thickness of the tail of the tile shall not exceed 1.3 inches (33 mm).
8. Roof tiles using mortar set or adhesive set systems shall have at least two-thirds of the tile's area free of mortar or adhesive contact.

1609.6 Alternate all-heights method. The alternate wind design provisions in this section are simplifications of the ASCE 7 Method 2—Analytical Procedure.

1609.6.1 Scope. As an alternative to ASCE 7 Section 6.5, the following provisions are permitted to be used to determine the wind effects on regularly shaped buildings, or other structures that are regularly shaped, which meet all of the following conditions:

1. The building or other structure is less than or equal to 75 feet (22 860 mm) in height with a height-to-least-width ratio of 4 or less, or the building or other structure has a fundamental frequency greater than or equal to 1 hertz.
2. The building or other structure is not sensitive to dynamic effects.
3. The building or other structure is not located on a site for which channeling effects or buffeting in the wake of upwind obstructions warrant special consideration.
4. The building shall meet the requirements of a simple diaphragm building as defined in ASCE 7 Section 6.2, where wind loads are only transmitted to the main wind-force-resisting system (MWFRS) at the diaphragms.
5. For open buildings, multispan gable roofs, stepped roofs, sawtooth roofs, domed roofs, roofs with slopes greater than 45 degrees (0.79 rad), solid free-standing walls and solid signs, and rooftop equipment, apply ASCE 7 provisions.

1609.6.1.1 Modifications. The following modifications shall be made to certain subsections in ASCE 7: in Section 1609.6.2, symbols and notations that are specific to this section are used in conjunction with the symbols and notations in ASCE 7 Section 6.3.

1609.6.2 Symbols and notations. Coefficients and variables used in the alternative all-heights method equations are as follows:

C_{net} = Net-pressure coefficient based on K_d [(G) (C_p) – (GC_{pi})], in accordance with Table 1609.6.2(2).

G = Gust effect factor for rigid structures in accordance with ASCE 7 Section 6.5.8.1.

K_d = Wind directionality factor in accordance with ASCE 7 Table 6-4.

P_{net} = Design wind pressure to be used in determination of wind loads on buildings or other structures or their components and cladding, in psf (kN/m²).

q_s = Wind stagnation pressure in psf (kN/m²) in accordance with Table 1609.6.2(1).

1609.6.3 Design equations. When using the alternative all-heights method, the MWFRS, and components and cladding of every structure shall be designed to resist the effects of wind pressures on the building envelope in accordance with Equation 16-34.

$$P_{net} = q_s K_z C_{net} [IK_{zt}] \qquad \textbf{(Equation 16-34)}$$

Design wind forces for the MWFRS shall not be less than 10 psf (0.48 kN/m²) multiplied by the area of the structure projected on a plane normal to the assumed wind direction (see ASCE 7 Section 6.1.4 for criteria). Design net wind pressure for components and cladding shall not be less than 10 psf (0.48 kN/m²) acting in either direction normal to the surface.

1609.6.4 Design procedure. The MWFRS and the components and cladding of every building or other structure shall be designed for the pressures calculated using Equation 16-34.

1609.6.4.1 Main wind-force-resisting systems. The MWFRS shall be investigated for the torsional effects identified in ASCE 7 Figure 6-9.

1609.6.4.2 Determination of K_z and K_{zt}. Velocity pressure exposure coefficient, K_z, shall be determined in accordance with ASCE 7 Section 6.5.6.6 and the topographic factor, K_{zt}, shall be determined in accordance with ASCE 7 Section 6.5.7.

TABLE 1609.6.2(2)
NET PRESSURE COEFFICIENTS, C_{net}[a,b]

STRUCTURE OR PART THEREOF	DESCRIPTION		C_{net} FACTOR			
			Enclosed		Partially enclosed	
	Walls:		+ Internal pressure	- Internal pressure	+ Internal pressure	- Internal pressure
	Windward wall		0.43	0.73	0.11	1.05
	Leeward wall		-0.51	-0.21	-0.83	0.11
	Sidewall		-0.66	-0.35	-0.97	-0.04
	Parapet wall	Windward	1.28		1.28	
		Leeward	-0.85		-0.85	
	Roofs:		Enclosed		Partially enclosed	
	Wind perpendicular to ridge		+ Internal pressure	- Internal pressure	+ Internal pressure	- Internal pressure
	Leeward roof or flat roof		-0.66	-0.35	-0.97	-0.04
	Windward roof slopes					
	Slope = 2:12 (10°)	Condition 1	-1.09	-0.79	-1.41	-0.47
		Condition 2	-0.28	0.02	-0.60	0.34
	Slope = 4:12 (18°)	Condition 1	-0.73	-0.42	-1.04	-0.11
		Condition 2	-0.05	0.25	-0.37	0.57
	Slope = 5:12 (23°)	Condition 1	-0.58	-0.28	-0.90	0.04
		Condition 2	0.03	0.34	-0.29	0.65
1. Main wind-force-resisting frames and systems	Slope = 6:12 (27°)	Condition 1	-0.47	-0.16	-0.78	0.15
		Condition 2	0.06	0.37	-0.25	0.68
	Slope = 7:12 (30°)	Condition 1	-0.37	-0.06	-0.68	0.25
		Condition 2	0.07	0.37	-0.25	0.69
	Slope = 9:12 (37°)	Condition 1	-0.27	0.04	-0.58	0.35
		Condition 2	0.14	0.44	-0.18	0.76
	Slope = 12:12 (45°)		0.14	0.44	-0.18	0.76
	Wind parallel to ridge and flat roofs		-1.09	-0.79	-1.41	-0.47
	Nonbuilding Structures: Chimneys, Tanks and Similar Structures:					
			h/D			
			1	7	25	
	Square (Wind normal to face)		0.99	1.07	1.53	
	Square (Wind on diagonal)		0.77	0.84	1.15	
	Hexagonal or Octagonal		0.81	0.97	1.13	
	Round		0.65	0.81	0.97	
	Open signs and lattice frameworks		Ratio of solid to gross area			
			< 0.1	0.1 to 0.29	0.3 to 0.7	
	Flat		1.45	1.30	1.16	
	Round		0.87	0.94	1.08	

(continued)

TABLE 1609.6.2(2)—continued
NET PRESSURE COEFFICIENTS, C_{net}[a, b]

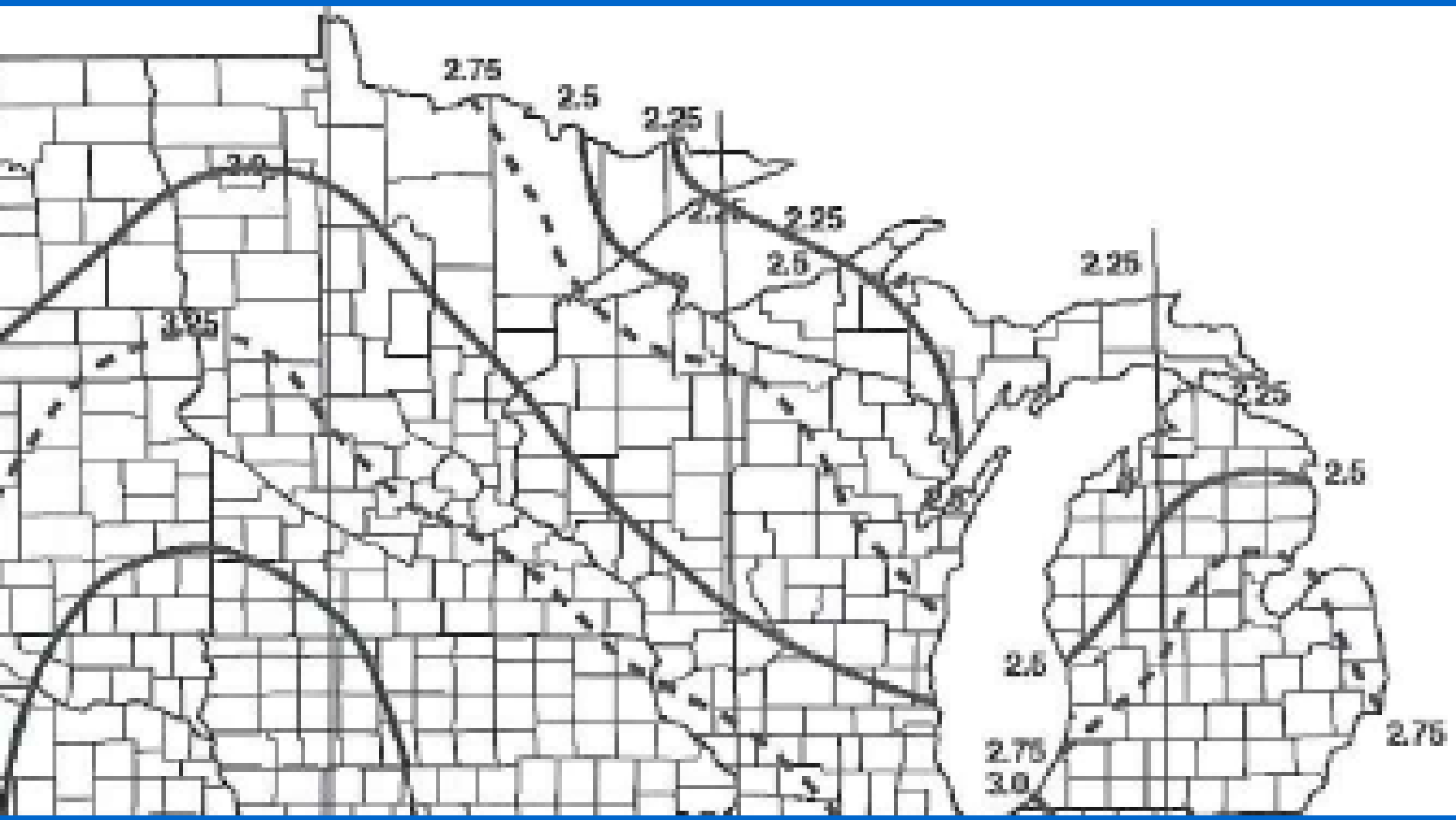
STRUCTURE OR PART THEREOF	DESCRIPTION		C_{net} FACTOR	
	Roof elements and slopes		**Enclosed**	**Partially enclosed**
	Gable of hipped configurations (Zone 1)			
	Flat < Slope < 6:12 (27°) See ASCE 7 Figure 6-11C Zone 1			
	Positive	10 square feet or less	0.58	0.89
		100 square feet or more	0.41	0.72
	Negative	10 square feet or less	-1.00	-1.32
		100 square feet or more	-0.92	-1.23
	Overhang: Flat < Slope < 6:12 (27°) See ASCE 7 Figure 6-11B Zone 1			
	Negative	10 square feet or less	-1.45	
		100 square feet or more	-1.36	
		500 square feet or more	-0.94	
	6:12 (27°) < Slope < 12:12 (45°) See ASCE 7 Figure 6-11D Zone 1			
2. Components and cladding not in areas of discontinuity—roofs and overhangs	Positive	10 square feet or less	0.92	1.23
		100 square feet or more	0.83	1.15
	Negative	10 square feet or less	-1.00	-1.32
		100 square feet or more	-0.83	-1.15
	Monosloped configurations (Zone 1)		**Enclosed**	**Partially enclosed**
	Flat < Slope < 7:12 (30°) See ASCE 7 Figure 6-14B Zone 1			
	Positive	10 square feet or less	0.49	0.81
		100 square feet or more	0.41	0.72
	Negative	10 square feet or less	-1.26	-1.57
		100 square feet or more	-1.09	-1.40
	Tall flat-topped roofs $h > 60'$		**Enclosed**	**Partially enclosed**
	Flat < Slope < 2:12 (10°) (Zone 1) See ASCE 7 Figure 6-17 Zone 1			
	Negative	10 square feet or less	-1.34	-1.66
		500 square feet or more	-0.92	-1.23

(continued)

IBC Chapter 16

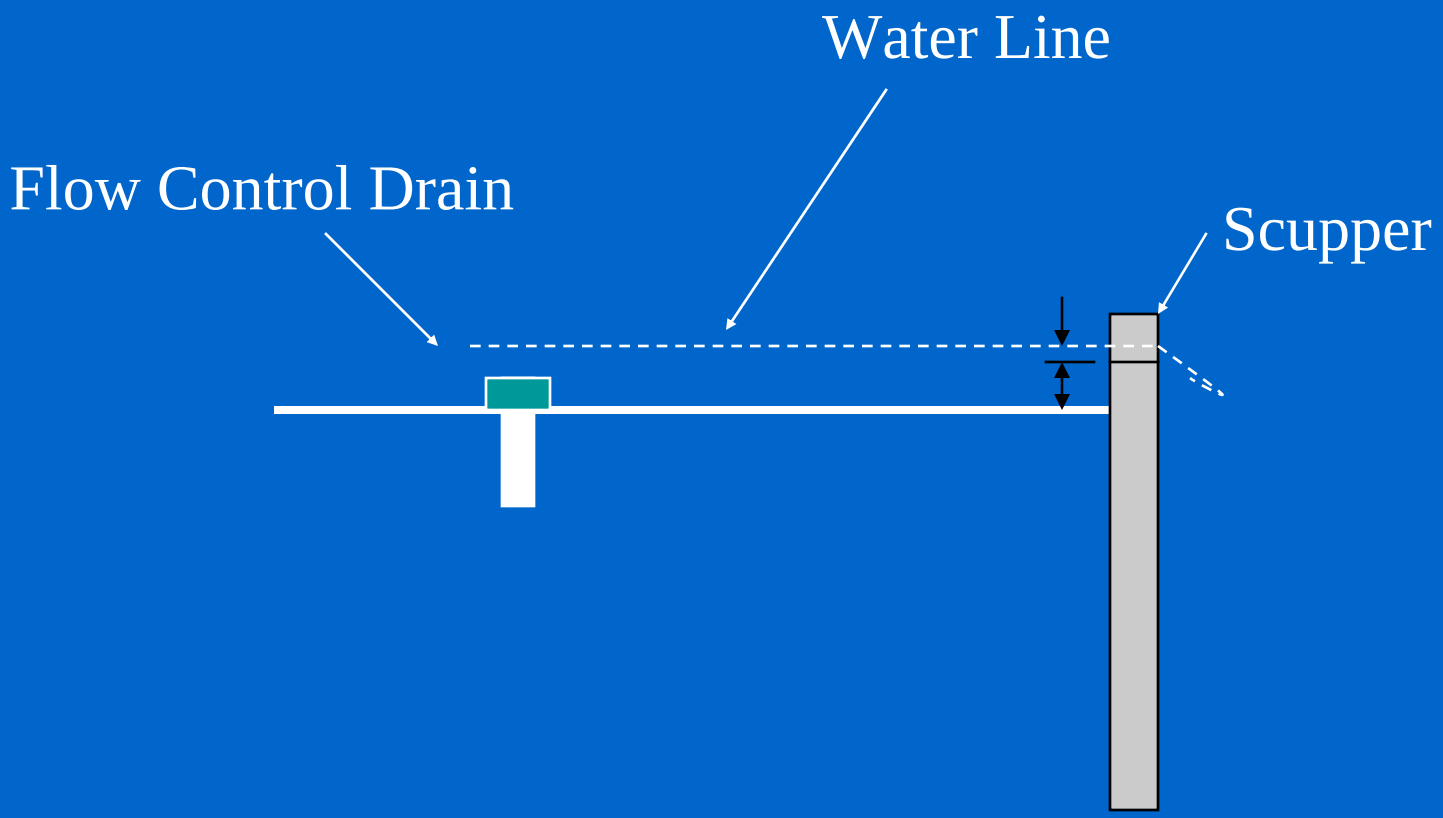
- **IBC Section 1611.1, Figure 1611.1 Design Rain Loads**

Design rainfall intensity maps were added to accompany the design requirements for rain loads.



[P] FIGURE 1611.1—continued
100-YEAR, 1-HOUR RAINFALL (INCHES) CENTRAL UNITED STATES

Source: National Weather Service N.O.A.A.



See SPS 382.36 WI Uniform Plumbing Code for design

IBC Chapter 16

- **IBC Section 1613 Earthquake Loads**

ASCE 7-05 is referenced by the 2009 IBC for structural loadings, including Supplement No. 2, which revises the minimum base shear equation for both buildings and non-building structures where the equivalent lateral force procedure is used.

ASCE 7-05 Chapter 14 and Appendix 11A are excluded by IBC 1613.1.

IBC Chapter 16

- **IBC Section 1613.6.3**
  Earthquake Loads – Automatic Sprinkler Systems

Automatic sprinkler systems installed in accordance with the 2007 edition of NFPA 13 Standard for the Installation of Sprinkler Systems are deemed to comply with the ASCE 7-05 seismic bracing provisions.

IBC Chapter 16

- **IBC Section 1614 Structural Integrity**

New provision on the structural integrity requirements for buildings classified as high-rise buildings in accordance with Section 403 and assigned to *Occupancy Category* III or IV.

IBC Chapter 17

There were only one change to the special inspection sections we adopt by SPS 362.1700.

Windows & doors not labeled in IBC 1715.5.1 provision.

IBC Chapter 18

- **Soils and Foundations**

Substantial portions of Chapter 18 were reorganized, reformatted, and updated to reflect current foundation design and construction practice.

- The general requirements related to design of all foundations and the specific requirements related to the design of shallow foundations (footings) were reorganized.

IBC Chapter 18

•Soils and Foundations (Cont'd)

- The deep foundation (piles and piers) requirements were reorganized to eliminate redundancy, resolve conflicting definitions, and simplify the provisions wherever possible.
- Deep foundations are now classified into two categories: driven deep foundations and cast-in-place deep foundations.

IBC Chapter 18

•Soils and Foundations (Cont'd)

- Foundation walls, retaining walls, and embedded posts and poles were consolidated into one section.
- Although most of the changes to Chapter 18 are editorial, some technical changes were made to update the code requirements related to foundations.

IBC Chapter 18

- **Soils and Foundations (Cont'd)**
  - 1801 GENERAL
  - 1802 DEFINITIONS
  - 1803 GEOTECHNICAL INVESTIGATIONS
  - 1804 EXCAVATION, GRADING AND FILL
  - 1805 DAMPPROOFING AND WATERPROOFING
  - 1806 PRESUMPTIVE LOAD-BEARING VALUES OF SOILS
  - 1807 FOUNDATION WALLS, RETAINING WALLS AND EMBEDDED POSTS AND POLES
  - 1808 FOUNDATIONS
  - 1809 SHALLOW FOUNDATIONS
  - 1810 DEEP FOUNDATIONS

IBC Chapter 18

•Soils and Foundations (Cont'd)

- The department will retain:
  - Definition of neutral plane for deep foundations. [Current SPS 362.1802]
  - Acceptance of ANSI/ASABE EP486.1 (2000) for Shallow Post Foundation Design and Allowable Soil Pressures [Current SPS 362.1807]
  - Modification for downdrag and determination of allowable loads. [Current SPS 362.1810(1)&(2)]
  - Dynamic driving approved formulas. [Current SPS 362.1810(4)]
  - Piles in subsiding areas [Current SPS 362.1810(7)]

IBC Chapter 18

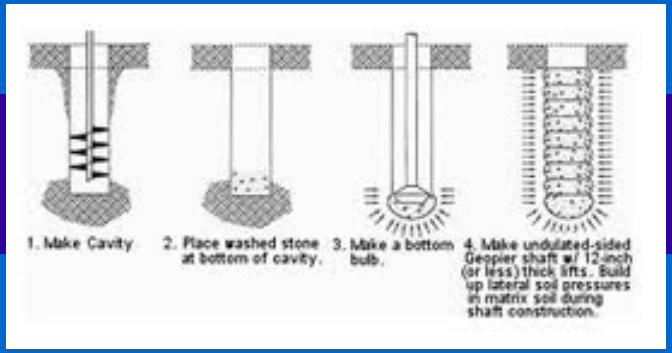
- **IBC Section 1803**

Geotechnical Investigations

The term geotechnical is now consistently used throughout the chapter as it relates to geotechnical investigations and geotechnical reports.

IBC Chapter 18

•IBC Section 1804 Excavation, Grading and Fill

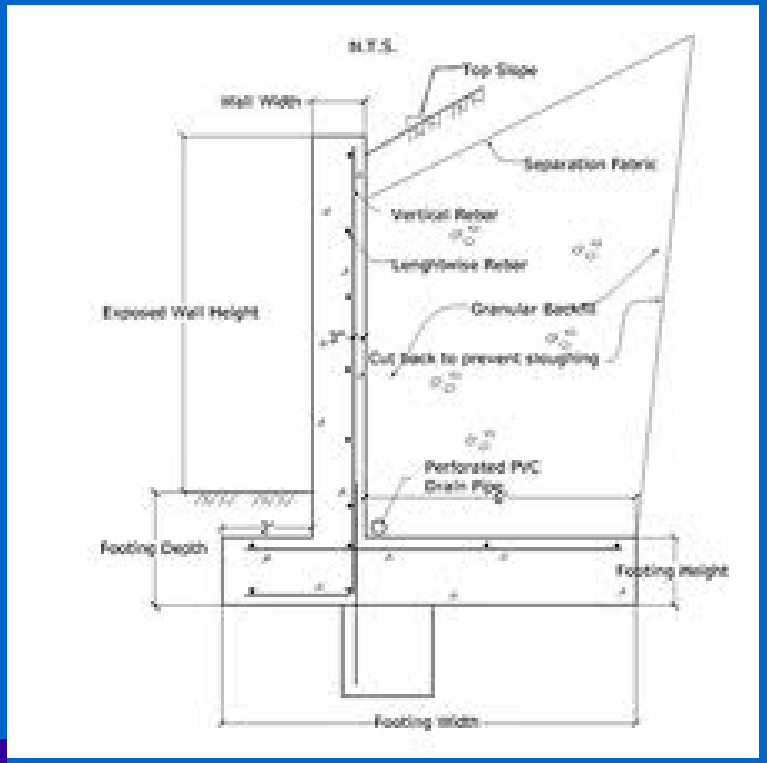


- The department added requirements for ground improvement systems in SPS 362.1804 provision.
  - Design of ground improvement by **licensed persons**
  - Allowable foundation pressure of improved ground
  - Settlement limits for structures supported on improved ground
  - Design confirmation testing
  - Quality control observations and testing

IBC Chapter 18

- **IBC Section 1807.2.3**
  Retaining Wall Safety Factor

Determination of the safety factor against sliding for retaining walls was clarified.



IBC Chapter 18

- **IBC Sections 1810.3.1.5 & 1810.3.5.3.3 Helical Piles**

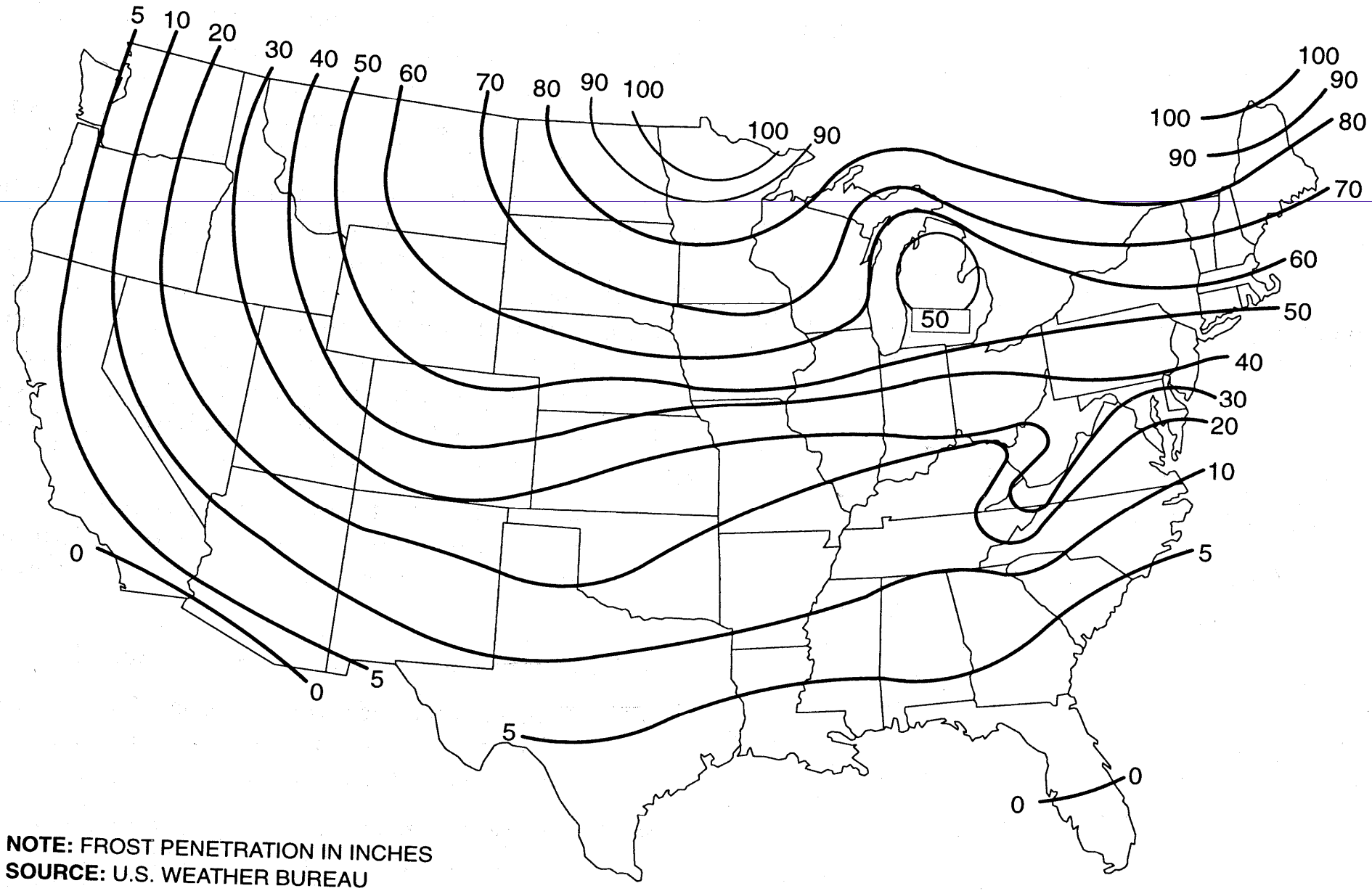
New provisions were added to the deep foundation provisions for design and installation of helical pile foundation systems.

IBC Chapter 18

- **IBC Section 1809.5 Frost Protection**

Except where otherwise protected from frost, foundations and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1. Extending below the frost line of the locality;
2. Constructing in accordance with ASCE 32; or
3. Erecting on solid rock.



NOTE: FROST PENETRATION IN INCHES
SOURCE: U.S. WEATHER BUREAU

FROST PENETRATION DEPTHS

FIGURE 3

IBC Chapter 18

- **IBC Section 1809.5**
  Frost Protection

Exception: Free-standing buildings meeting all of the following conditions shall not be required to be protected:

1. Assigned to *Occupancy Category* I, in accordance with Section 1604.5;

2. Area of 600 square feet or less for light-frame construction or 400 square feet or less for other than light-frame construction; and

3. Eave height of 10 feet or less.

IBC Chapter 18

• IBC Section 1809.5 Frost Protection

Shallow foundations shall not bear on frozen soil unless such frozen condition is of a permanent character.

This is similar to the ACI 318 section 5.12.2 prohibiting placing concrete on frozen ground.

Guide to design of Frost Protected Shallow Foundation

- SEI/**ASCE 32-**01 is adopted by both UDC and by 2009 IBC for foundation designs.
- Inspectors familiar with UDC Appendix pages 236 & 237 for unheated and heated building design are using this standard.
- Criteria for frost formation include both moisture and freezing temperature.

FOUNDATION SYSTEMS 310

CONTENTS

GENERAL RECOMMENDATIONS

FOUNDATION TYPES

Foundations are of two general types: (1) spread foundations, which distribute the building loads directly over a sufficient area to obtain adequate bearing capacity; and (2) pile foundations, which transmit the building loads through weak soils (of inadequate bearing capacity for spread foundations) to deeper layers of soil with adequate bearing value.

Most foundations in residential single-family and low-rise construction are of the spread type. (For more detailed description of foundation types see Main Text pages 310-3 through 310-5.)

SOIL AND SETTLEMENT

Spread foundations should be designed so as to support the superstructure and so as to distribute all building loads in a way which will insure that settlement will be either negligible or uniform under all parts of the building.

Uneven foundation settlement can result in defects such as cracks in finished walls and ceilings, sloping floors, and open joints in woodwork, as well as functional annoyances such as binding doors and windows. When differential settlement is extreme, partial failure of the structural integrity of the building can result.

Soils are classed broadly as either granular or cohesive. Granular soils, such as bolders, gravel and sand, consist of relatively large particles visible to the eye. In cohesive soils the particles are relatively small, and in some types such as fine-grained clays the particles cannot even be seen through a low-powered microscope. Silts are soils made up of particles finer than sand but coarser than clay (Fig. WF 1).

Important characteristics of soils influencing residential foundation construction include: grain size, moisture content, density, drainage characteristics, compressibility and climatic variations. Capillarity is another important characteristic of soils which is related to particle size and composition (Fig. WF 2).

Since foundation loads in single-family and low-rise residential construction are small, the sizing of foundations for houses generally is based on local rules of thumb, rather than on soil bearing values. However, building codes often list allowable (maximum) bearing capacities for soils which can be used as a rough guide (Fig. WF 3).

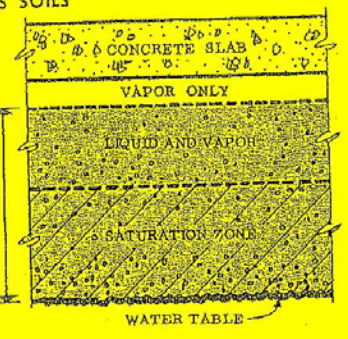
FIG. WF1 SOIL TYPES

SOIL TYPES	APPROXIMATE SIZE LIMITS OF SOIL PARTICLES
BOULDERS	LARGER THAN 3" DIAMETER
GRAVEL	SMALLER THAN 3" DIAMETER BUT LARGER THAN #4 SIEVE
SAND	SMALLER THAN #4 SIEVE[1], BUT LARGER THAN #200 SIEVE[2]
SILTS	SMALLER THAN 0.02 mm. DIA. BUT LARGER THAN 0.002 mm. DIAMETER
CLAY	SMALLER THAN 0.002 mm. DIA.

1. Approximately ¼" in diameter
2. Particles less than #200 sieve not visible to the naked eye

FIG. WF2 CAPILLARITY OF VARIOUS SOILS

CAPILLARY RISE	SOIL TYPE	SATURATION ZONE
Greater Than 8'	CLAY	Greater Than 5'
Greater Than 8'	SILT	Greater Than 5'
3' to 8'	FINE SAND	1' to 5'
1' to 3'	COARSE SAND	0 to 1'
0	GRAVEL	0



not be less than the minimum insulation thickness in Table A1 of Appendix A. Insulation materials shall be protected in accordance with Section 4.1.4.

See Figure A1 to determine design AFI (F_{100}).

6. FPSF DESIGN METHOD FOR HEATED BUILDINGS

6.1 SLAB-ON-GROUND FOUNDATIONS

The design procedure in this section shall be used to specify foundation insulation for slab-on-ground foundations of heated buildings in accordance with Figure 2 and the design data in Appendix A. For semi-heated buildings, the additional requirements of Section 8.3 shall apply. Cold-bridges shall not be permitted (see Section 8.4).

Step 1: Select the Site's Design Air Freezing Index, F_{100}

The 100-year mean return period AFI, F_{100}, shall be selected from Figure A1 or Table A3 of Appendix A.

Step 2: Determine the R-Value for the Floor Slab, R_f

Determine the thermal resistance of the floor system, R_f, by multiplying the nominal dry resistivity in

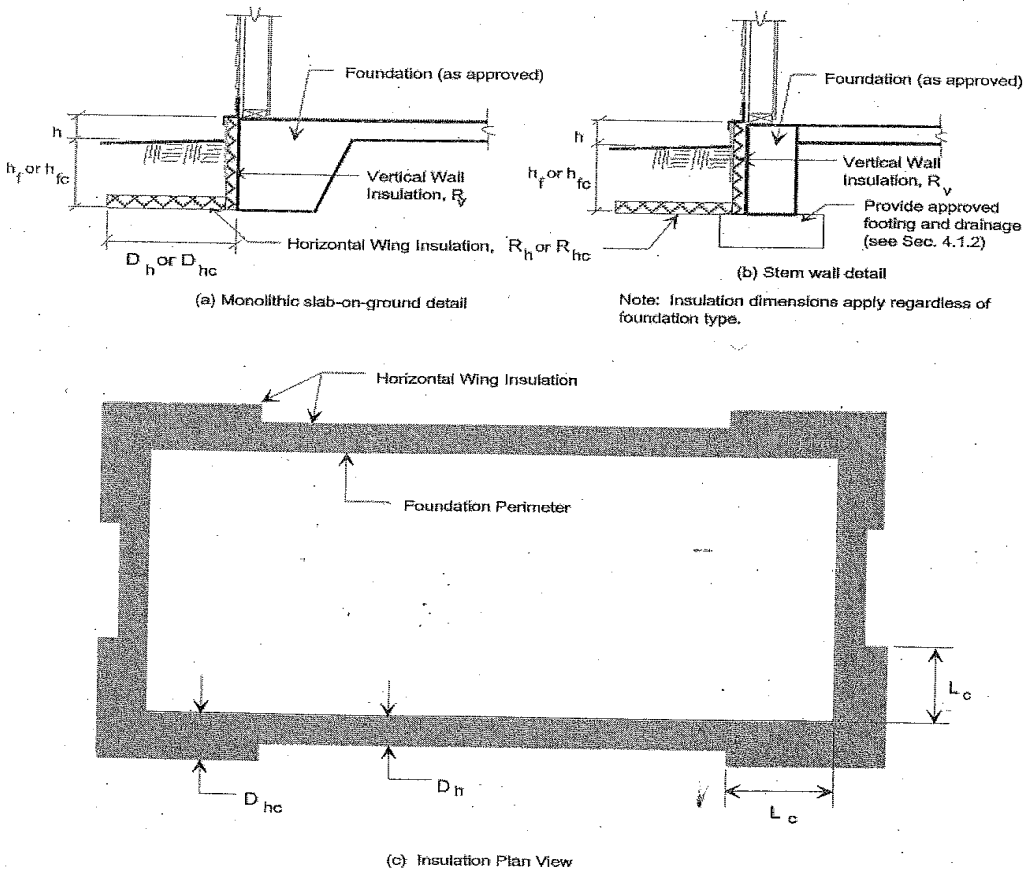


FIGURE 2. Slab-on-Ground Foundation for Heated Buildings

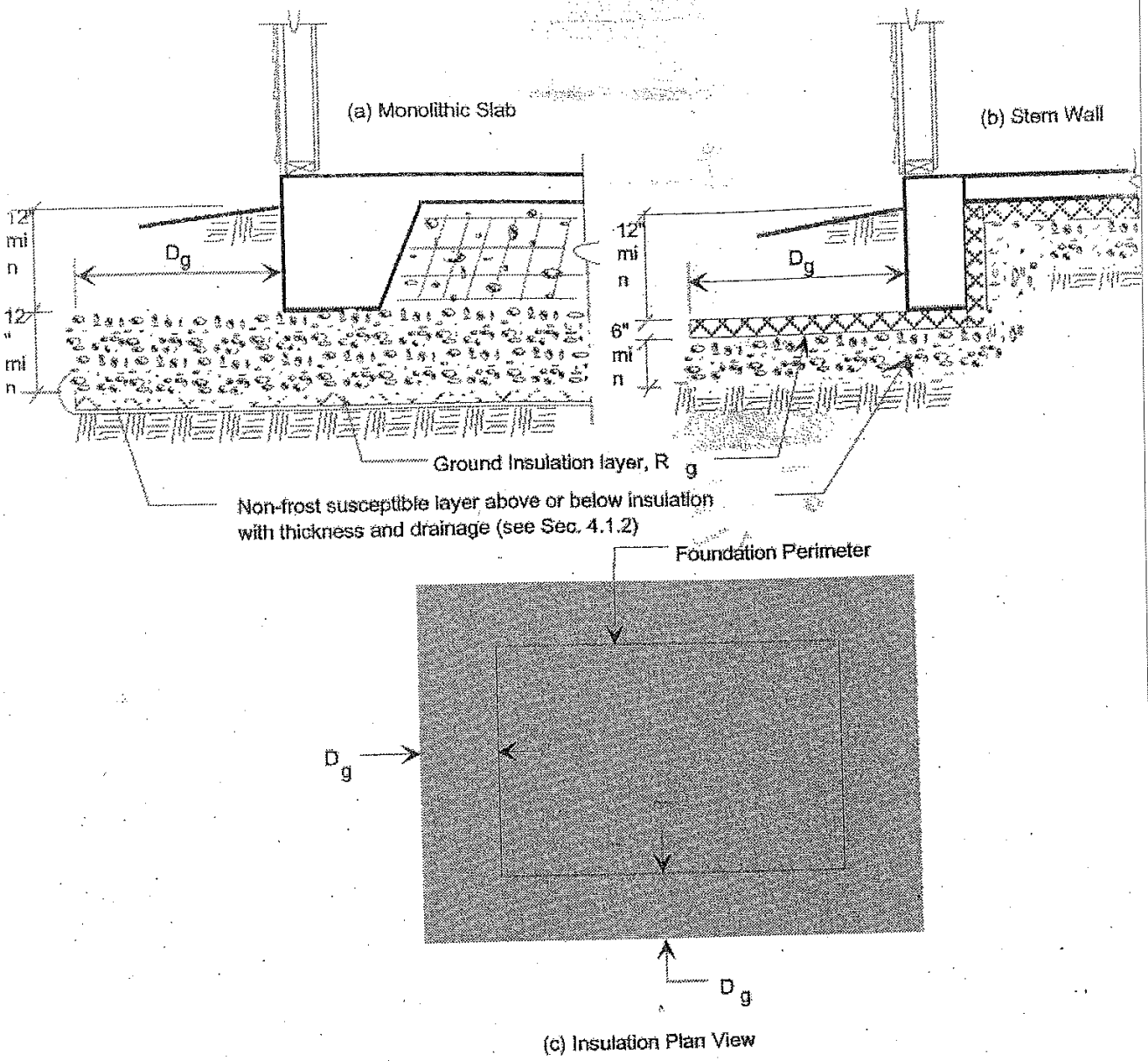


FIGURE 5. Slab-on-Ground Foundation for Unheated Buildings

...ich) of an insulation material in service conditions	m-° K/W	hr-ft^2-° F/Btu-in

1 due primarily
rozen soil be-
ovement of the
weakening of

tion (FPSF):
e by insulating
ısulation is
ow the foun-
ıeath the foun-
ths to be possi-
. Use of
ıded in certain

ending horizon-
n insulated pad

g Index: A
ber of years be-
ason freezing
; a 100-year
ears (1/100),
ce, or is ex-

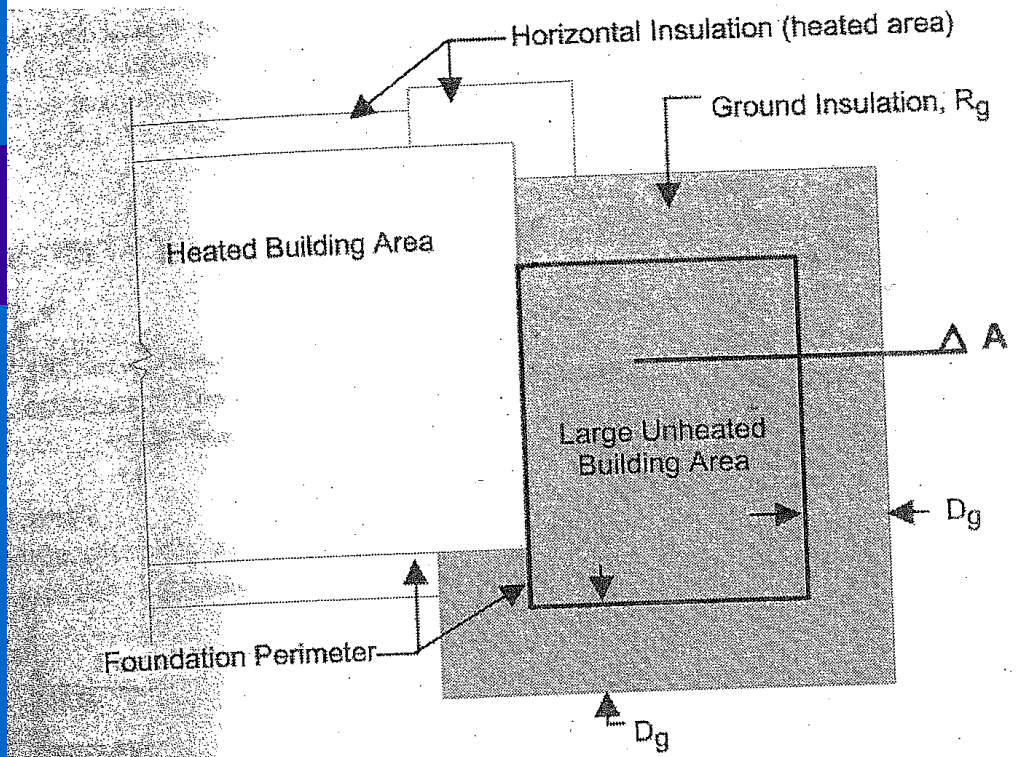
MAT): The av-

will be equaled or exceeded (1/p, where p is the probability of an event happening over a specified period).

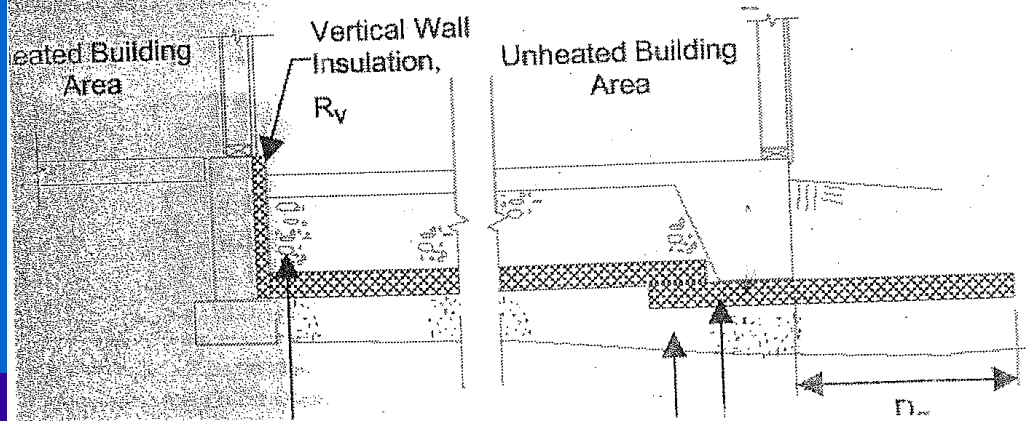
Non–Frost-Susceptible Soil: A soil that does not display significant detrimental ice segregation (i.e., ice lens development) during freezing. Generally, granular soils with less than 6% by mass passing a #200 sieve (0.074 mm) have low frost susceptibility, whereas silts and clays or sands and gravels (i.e., granular soils) with high fines content generally have medium to high frost susceptibility.

TABLE 3. Unit Conversions

Length	1 m = 100 cm = 3.28 ft = 39.4 in
Mass	1 kg = 2.2 lbm (0.0683 slugs)
Weight	1 N = 0.225 lbf
Area	1 m^2 = 10,000 cm^2 = 10.8 ft^2 = 1550 in^2
Volume	1 m^3 = 1 × 10^6 cm^3 = 35.3 ft^3 = 6.1 × 10^4 in^3
Density	1 kg/m^3 = 0.0624 lbm/ft^3 (pcf)
Pressure	1 kPa = 0.145 lbf/in^2 (psi) = 20.8 lbf/ft^2 (psf)
Temperature	° F = 1.8 (°C + 32)



Insulation Plan



IBC Chapter 19

- **Concrete**

The majority of changes to the concrete provisions of Chapter 19 were done to coordinate the code requirements with the 2008 edition of the ACI 318-08 standard.

New section references in the code correspond to the final published version of ACI 318-08.

IBC Chapter 19

- **IBC Section 1908.1**
  Modifications to ACI 318, General

Many of the amendments to ACI 318-08 were deleted in the 2009 IBC because these provisions were subsequently incorporated into the 2008 edition of the ACI 318 standard. Changes to the definitions related to structural walls were made to coordinate the terminology used in ACI 318-08 with ASCE 7-05.

IBC Chapter 19

- **IBC Sections 1909.6.1 & 1909.6.3 Structural Plain Concrete, Walls**

The structural plain concrete provisions in the code were updated to be consistent with the provisions of ACI 318-08.

IBC Chapter 20

- **Aluminum**

No changes were made to the requirements or referenced standards for design and construction of aluminum structures.

Greenhouse

Administrative requirements such as scoping SPS 361.02(2) farming (defined by statutes reprinted there) & thus SPS 361.02(3)(e) exempt from code versus commercial greenhouse of group U or M occupancy might apply. Note the group U can use IBC Appendix C, where detached production greenhouses are specifically mentioned.

Greenhouse considerations

Plan submittal/review option requirements:

1) General building (& HVAC as applicable)
2) Foundation review with miscellaneous greenhouse structural review later

Specific structural and snow load reduction allowances will apply and limitations on light transmitting plastics from Ch 26.

TABLE 7-3 THERMAL FACTOR, C_t

Thermal Condition[a]	C_t
All structures except as indicated below:	1.0
Structures kept just above freezing and others with cold, ventilated roofs in which the thermal resistance (R-value) between the ventilated space and the heated space exceeds 25 °F× *h*× ft²/Btu (4.4 K × m²/W).	1.1
Unheated structures and structures intentionally kept below freezing.	1.2
Continuously heated greenhouses[b] with a roof having a thermal resistance (R-value) less than 2.0 °F× *h*× ft²/Btu (0.4 K × m²/W)	0.85

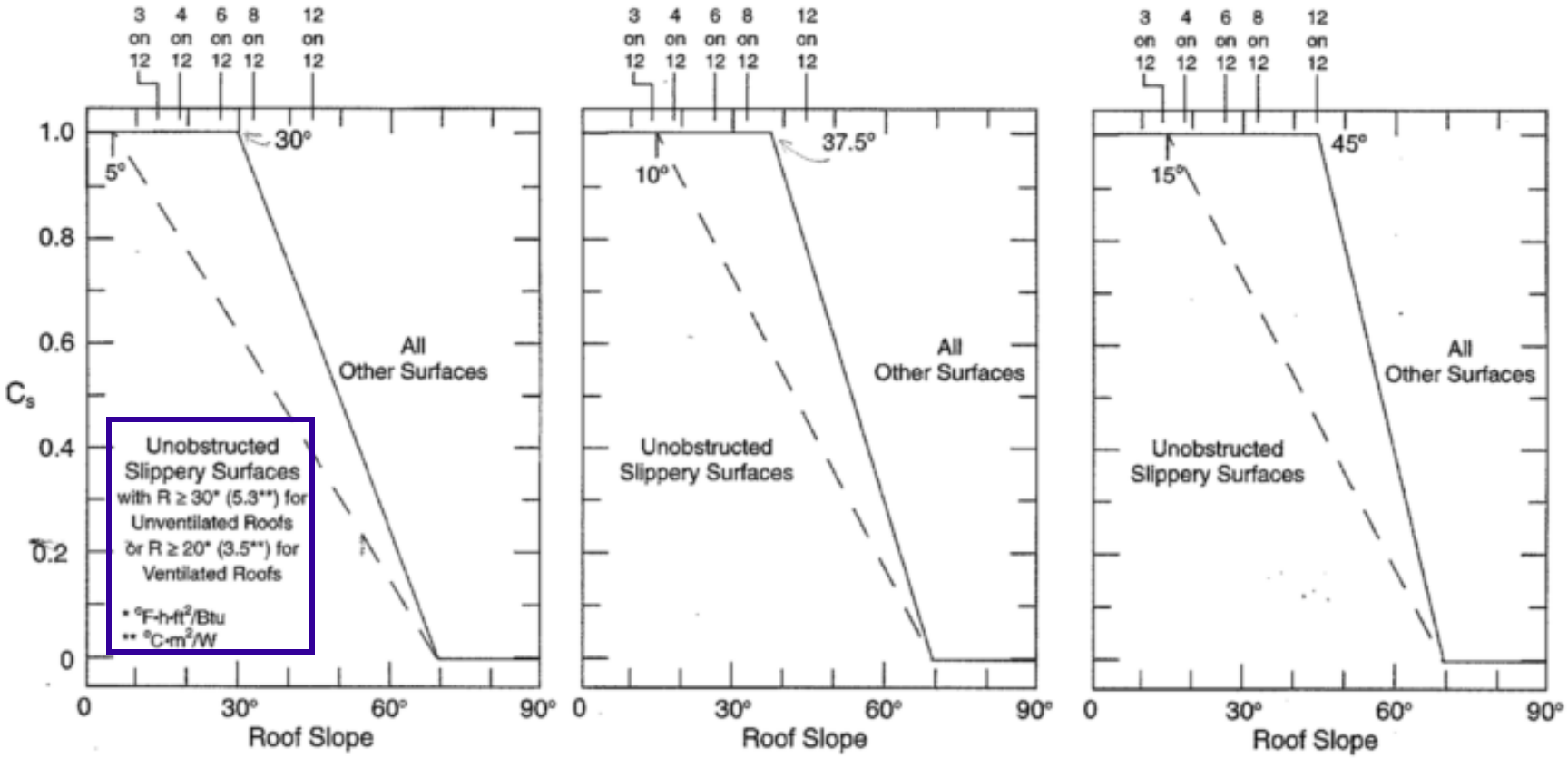
[a]These conditions shall be representative of the anticipated conditions during winters for the life of the structure.

[b]Greenhouses with a constantly maintained interior temperature of 50 °F (10 °C) or more at any point 3 ft above the floor level during winters and having either a maintenance attendant on duty at all times or a temperature alarm system to provide warning in the event of a heating failure.

TABLE 7-4 IMPORTANCE FACTOR, *I* (SNOW LOADS)

Category[a]	*I*
I	0.8
II	1.0
III	1.1
IV	1.2

[a]See Section 1.5 and Table 1-1.



7-2a: Warm roofs with $C_t \leq 1.0$

7-2b: Cold roofs with $C_t = 1.1$

7-2c: Cold roofs with $C_t = 1.2$

FIGURE 7-2 GRAPHS FOR DETERMINING ROOF SLOPE FACTOR C_s FOR WARM AND COLD ROOFS (SEE TABLE 7-3 FOR C_t DEFINITIONS)

SECTION 2402
DEFINITIONS

2402.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

DALLE GLASS. A decorative composite glazing material made of individual pieces of glass that are embedded in a cast matrix of concrete or epoxy.

DECORATIVE GLASS. A carved, leaded or Dalle glass or glazing material whose purpose is decorative or artistic, not functional; whose coloring, texture or other design qualities or components cannot be removed without destroying the glazing material and whose surface, or assembly into which it is incorporated, is divided into segments.

SECTION 2403
GENERAL REQUIREMENTS FOR GLASS

2403.1 Identification. Each pane shall bear the manufacturer's *mark* designating the type and thickness of the glass or glazing material. The identification shall not be omitted unless *approved* and an affidavit is furnished by the glazing contractor certifying that each light is glazed in accordance with *approved construction documents* that comply with the provisions of this chapter. Safety glazing shall be identified in accordance with Section 2406.2.

Each pane of tempered glass, except tempered spandrel glass, shall be permanently identified by the manufacturer. The identification *mark* shall be acid etched, sand blasted, ceramic fired, laser etched, embossed or of a type that, once applied, cannot be removed without being destroyed.

Tempered spandrel glass shall be provided with a removable paper marking by the manufacturer.

2403.2 Glass supports. Where one or more sides of any pane of glass are not firmly supported, or are subjected to unusual load conditions, detailed *construction documents*, detailed shop drawings and analysis or test data assuring safe performance for the specific installation shall be prepared by a *registered design professional*.

foot (psf) (730 N/m) is applied horizontally to one panel at any point up to 42 inches (1067 mm) above the walking surface.

2403.5 Louvered windows or jalousies. Float, wired and patterned glass in louvered windows and jalousies shall be no thinner than nominal $^3/_{16}$ inch (4.8 mm) and no longer than 48 inches (1219 mm). Exposed glass edges shall be smooth.

Wired glass with wire exposed on longitudinal edges shall not be used in louvered windows or jalousies.

Where other glass types are used, the design shall be submitted to the *building official* for approval.

SECTION 2404
WIND, SNOW, SEISMIC AND DEAD LOADS ON GLASS

2404.1 Vertical glass. Glass sloped 15 degrees (0.26 rad) or less from vertical in windows, curtain and window walls, doors and other exterior applications shall be designed to resist the wind loads in Section 1609 for components and cladding. Glass in glazed curtain walls, glazed storefronts and glazed partitions shall meet the seismic requirements of ASCE 7, Section 13.5.9. The load resistance of glass under uniform load shall be determined in accordance with ASTM E 1300.

The design of vertical glazing shall be based on the following equation:

$$F_{gw} \le F_{ga} \qquad \textbf{(Equation 24-1)}$$

where:

F_{gw} = Wind load on the glass computed in accordance with Section 1609.

F_{ga} = Short duration load on the glass as determined in accordance with ASTM E 1300.

2404.2 Sloped glass. Glass sloped more than 15 degrees (0.26 rad) from vertical in skylights, sunrooms, sloped roofs and other exterior applications shall be designed to resist the most critical of the following combinations of loads.

$$F_g = W_o - D \qquad \textbf{(Equation 24-2)}$$

$$F_g = W_i + D + 0.5\,S \qquad \textbf{(Equation 24-3)}$$

2404.4 Other designs. For designs outside the scope of this section, an analysis or test data for the specific installation shall be prepared by a *registered design professional*.

SECTION 2405
SLOPED GLAZING AND SKYLIGHTS

2405.1 Scope. This section applies to the installation of glass and other transparent, translucent or opaque glazing material installed at a slope more than 15 degrees (0.26 rad) from the vertical plane, including glazing materials in skylights, roofs and sloped walls.

2405.2 Allowable glazing materials and limitations. Sloped glazing shall be any of the following materials, subject to the listed limitations.

1. For monolithic glazing systems, the glazing material of the single light or layer shall be laminated glass with a minimum 30-mil (0.76 mm) polyvinyl butyral (or equivalent) interlayer, wired glass, light-transmitting plastic materials meeting the requirements of Section 2607, heat-strengthened glass or fully tempered glass.
2. For multiple-layer glazing systems, each light or layer shall consist of any of the glazing materials specified in Item 1 above.

Annealed glass is permitted to be used as specified within Exceptions 2 and 3 of Section 2405.3.

For additional requirements for plastic skylights, see Section 2610. Glass-block construction shall conform to the requirements of Section 2101.2.5.

2405.3 Screening. Where used in monolithic glazing systems, heat-strengthened glass and fully tempered glass shall have screens installed below the glazing material. The screens and their fastenings shall: (1) be capable of supporting twice the weight of the glazing; (2) be firmly and substantially fastened to the framing members and (3) be installed within 4 inches (102 mm) of the glass. The screens shall be constructed of a noncombustible material not thinner than No. 12 B&S gage (0.0808 inch) with mesh not larger than 1 inch by 1 inch (25 mm by 25 mm). In a corrosive atmosphere, structurally equivalent noncorrosive screen materials shall be used. Heat-strengthened glass, fully tempered glass and wired glass, when used in multiple-layer glazing systems as the bottom glass layer over the walking surface, shall be equipped with screening that conforms to the requirements for monolithic glazing systems.

Exception: In monolithic and multiple-layer sloped glazing systems, the following applies:

1. Fully tempered glass installed without protective screens where glazed between intervening floors at a slope of 30 degrees (0.52 rad) or less from the vertical plane shall have the highest point of the glass 10 feet (3048 mm) or less above the walking surface.
2. Screens are not required below any glazing material, including annealed glass, where the walking surface below the glazing material is permanently protected from the risk of falling glass or the area below the glazing material is not a walking surface.
3. Any glazing material, including annealed glass, is permitted to be installed without screens in the sloped glazing systems of commercial or detached noncombustible greenhouses used exclusively for growing plants and not open to the public, provided that the height of the greenhouse at the ridge does not exceed 30 feet (9144 mm) above grade.
4. Screens shall not be required within individual *dwelling units* in Groups R-2, R-3 and R-4 where fully tempered glass is used as single glazing or as both panes in an insulating glass unit, and the following conditions are met:
   4.1. Each pane of the glass is 16 square feet (1.5 m^2) or less in area.
   4.2. The highest point of the glass is 12 feet (3658 mm) or less above any walking surface or other accessible area.
   4.3. The glass thickness is $^3/_{16}$ inch (4.8 mm) or less.
5. Screens shall not be required for laminated glass with a 15-mil (0.38 mm) polyvinyl butyral (or equivalent) interlayer used within individual *dwelling units* in Groups R-2, R-3 and R-4 within the following limits:
   5.1. Each pane of glass is 16 square feet (1.5 m^2) or less in area.
   5.2. The highest point of the glass is 12 feet (3658 mm) or less above a walking surface or other accessible area.

2405.4 Framing. In Type I and II construction, sloped glazing and skylight frames shall be constructed of noncombustible materials. In structures where acid fumes deleterious to metal are incidental to the use of the buildings, *approved* pressure-treated wood or other *approved* noncorrosive materials are permitted to be used for sash and frames. Framing supporting sloped glazing and skylights shall be designed to resist the tributary roof loads in Chapter 16. Skylights set at an angle of less than 45 degrees (0.79 rad) from the horizontal plane shall be mounted at least 4 inches (102 mm) above the plane of the roof on a curb constructed as required for the frame. Skylights shall not be installed in the plane of the roof where the roof pitch is less than 45 degrees (0.79 rad) from the horizontal.

Exception: Installation of a skylight without a curb shall be permitted on roofs with a minimum slope of 14 degrees (three units vertical in 12 units horizontal) in Group R-3 occupancies. All unit skylights installed in a roof with a pitch flatter than 14 degrees (0.25 rad) shall be mounted at least 4 inches (102 mm) above the plane of the roof on a curb constructed as required for the frame unless otherwise specified in the manufacturer's installation instructions.

2405.5 Unit skylights. Unit skylights shall be tested and labeled as complying with AAMA/WDMA/CSA 101/I.S.2/A440. The *label* shall state the name of the manufacturer, the *approved* labeling agency, the product designation and the performance grade rating as specified in AAMA/WDMA/CSA 101/I.S.2/A440. If the product manufacturer has chosen to have the performance grade of the skylight rated separately for

[F] 2604.2 Interior trim. Foam plastic used as interior *trim* shall comply with Sections 2604.2.1 through 2604.2.4.

[F] 2604.2.1 Density. The minimum density of the interior *trim* shall be 20 pcf (320 kg/m³).

[F] 2604.2.2 Thickness. The maximum thickness of the interior *trim* shall be $^1/_2$ inch (12.7 mm) and the maximum width shall be 8 inches (204 mm).

[F] 2604.2.3 Area limitation. The interior *trim* shall not constitute more than 10 percent of the specific wall or ceiling areas to which it is attached.

[F] 2604.2.4 Flame spread. The flame spread index shall not exceed 75 where tested in accordance with ASTM E 84 or UL 723. The smoke-developed index shall not be limited.

Exception: When the interior *trim* material has been tested as an interior finish in accordance with NFPA 286 and complies with the acceptance criteria in Section 803.1.2.1, it shall not be required to be tested for flame spread index in accordance with ASTM E 84 or UL 723.

SECTION 2605
PLASTIC VENEER

2605.1 Interior use. Where used within a building, plastic veneer shall comply with the interior finish requirements of Chapter 8.

2605.2 Exterior use. Exterior plastic veneer, other than plastic siding, shall be permitted to be installed on the *exterior walls* of buildings of any type of construction in accordance with all of the following requirements:

1. Plastic veneer shall comply with Section 2606.4.
2. Plastic veneer shall not be attached to any exterior wall to a height greater than 50 feet (15 240 mm) above grade.
3. Sections of plastic veneer shall not exceed 300 square feet (27.9 m²) in area and shall be separated by a minimum of 4 feet (1219 mm) vertically.

Exception: The area and separation requirements and the smoke-density limitation are not applicable to plastic veneer applied to buildings constructed of Type VB construction, provided the walls are not required to have a fire-resistance rating.

2605.3 Plastic siding. Plastic siding shall comply with the requirements of Sections 1404 and 1405.

SECTION 2606
LIGHT-TRANSMITTING PLASTICS

2606.1 General. The provisions of this section and Sections 2607 through 2611 shall govern the quality and methods of application of light-transmitting plastics for use as light-transmitting materials in buildings and structures. Foam plastics shall comply with Section 2603. Light-transmitting plastic materials that meet the other code requirements for walls and roofs shall be permitted to be used in accordance with the other applicable chapters of the code.

2606.2 Approval for use. Sufficient technical data shall be submitted to substantiate the proposed use of any light-transmitting material, as approved by the *building official* and subject to the requirements of this section.

2606.3 Identification. Each unit or package of light-transmitting plastic shall be identified with a *mark* or decal satisfactory to the *building official*, which includes identification as to the material classification.

2606.4 Specifications. Light-transmitting plastics, including thermoplastic, thermosetting or reinforced thermosetting plastic material, shall have a self-ignition temperature of 650°F (343°C) or greater where tested in accordance with ASTM D 1929; a smoke-developed index not greater than 450 where tested in the manner intended for use in accordance with ASTM E 84 or UL 723, or a maximum average smoke density rating not greater than 75 where tested in the thickness intended for use in accordance with ASTM D 2843 and shall conform to one of the following combustibility classifications:

Class CC1: Plastic materials that have a burning extent of 1 inch (25 mm) or less where tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

Class CC2: Plastic materials that have a burning rate of $2^1/_2$ inches per minute (1.06 mm/s) or less where tested at a nominal thickness of 0.060 inch (1.5 mm), or in the thickness intended for use, in accordance with ASTM D 635.

2606.5 Structural requirements. Light-transmitting plastic materials in their assembly shall be of adequate strength and durability to withstand the loads indicated in Chapter 16. Technical data shall be submitted to establish stresses, maximum unsupported spans and such other information for the various thicknesses and forms used as deemed necessary by the *building official*.

2606.6 Fastening. Fastening shall be adequate to withstand the loads in Chapter 16. Proper allowance shall be made for expansion and contraction of light-transmitting plastic materials in accordance with accepted data on the coefficient of expansion of the material and other material in conjunction with which it is employed.

2606.7 Light-diffusing systems. Unless the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, light-diffusing systems shall not be installed in the following occupancies and locations:

1. Group A with an *occupant load* of 1,000 or more.
2. Theaters with a stage and proscenium opening and an *occupant load* of 700 or more.
3. Group I-2.
4. Group I-3.
5. Vertical *exit* enclosures and *exit* passageways.

2606.7.1 Support. Light-transmitting plastic diffusers shall be supported directly or indirectly from ceiling or roof construction by use of noncombustible hangers. Hangers shall be at least No. 12 steel-wire gage (0.106 inch) galvanized wire or equivalent.

below the ignition temperature of the panels. The panels shall remain in place at an ambient room temperature of 175°F (79°C) for a period of not less than 15 minutes.

2606.7.3 Size limitations. Individual panels or units shall not exceed 10 feet (3048 mm) in length nor 30 square feet (2.79 m²) in area.

2606.7.4 Fire suppression system. In buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, plastic light-diffusing systems shall be protected both above and below unless the sprinkler system has been specifically approved for installation only above the light-diffusing system. Areas of light-diffusing systems that are protected in accordance with this section shall not be limited.

2606.7.5 Electrical luminaires. Light-transmitting plastic panels and light-diffuser panels that are installed in approved electrical luminaires shall comply with the requirements of Chapter 8 unless the light-transmitting plastic panels conform to the requirements of Section 2606.7.2. The area of approved light-transmitting plastic materials that are used in required *exits* or *corridors* shall not exceed 30 percent of the aggregate area of the ceiling in which such panels are installed, unless the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

2606.8 Partitions. Light-transmitting plastics used in or as partitions shall comply with the requirements of Chapters 6 and 8.

2606.9 Bathroom accessories. Light-transmitting plastics shall be permitted as glazing in shower stalls, shower doors, bathtub enclosures and similar accessory units. Safety glazing shall be provided in accordance with Chapter 24.

2606.10 Awnings, patio covers and similar structures. *Awnings* constructed of light-transmitting plastics shall be constructed in accordance with the provisions specified in Section 3105 and Chapter 32 for projections. Patio covers constructed of light-transmitting plastics shall comply with Section 2606. Light-transmitting plastics used in canopies at motor fuel-dispensing facilities shall comply with Section 2606, except as modified by Section 406.5.3.

2606.11 Greenhouses. Light-transmitting plastics shall be permitted in lieu of plain glass in greenhouses.

2606.12 Solar collectors. Light-transmitting plastic covers on solar collectors having noncombustible sides and bottoms shall be permitted on buildings not over three *stories above grade plane* or 9,000 square feet (836.1 m²) in total floor area, provided the light-transmitting plastic cover does not exceed 33.33 percent of the roof area for CC1 materials or 25 percent of the roof area for CC2 materials.

Exception: Light-transmitting plastic covers having a thickness of 0.010 inch (0.3 mm) or less or shall be permit-

SECTION 2607
LIGHT-TRANSMITTING PLASTIC WALL PANELS

2607.1 General. Light-transmitting plastics shall not be used as wall panels in *exterior walls* in occupancies in Groups A-1, A-2, H, I-2 and I-3. In other groups, light-transmitting plastics shall be permitted to be used as wall panels in *exterior walls*, provided that the walls are not required to have a fire-resistance rating and the installation conforms to the requirements of this section. Such panels shall be erected and anchored on a foundation, waterproofed or otherwise protected from moisture absorption and sealed with a coat of mastic or other approved waterproof coating. Light-transmitting plastic wall panels shall also comply with Section 2606.

2607.2 Installation. *Exterior wall* panels installed as provided for herein shall not alter the type of construction classification of the building.

2607.3 Height limitation. Light-transmitting plastics shall not be installed more than 75 feet (22 860 mm) above *grade plane*, except as allowed by Section 2607.5.

2607.4 Area limitation and separation. The maximum area of a single wall panel and minimum vertical and horizontal separation requirements for exterior light-transmitting plastic wall panels shall be as provided for in Table 2607.4. The maximum percentage of wall area of any *story* in light-transmitting plastic wall panels shall not exceed that indicated in Table 2607.4 or the percentage of unprotected openings permitted by Section 705.8, whichever is smaller.

Exceptions:

1. In structures provided with approved flame barriers extending 30 inches (760 mm) beyond the *exterior wall* in the plane of the floor, a vertical separation is not required at the floor except that provided by the vertical thickness of the flame barrier projection.
2. Veneers of approved weather-resistant light-transmitting plastics used as exterior siding in buildings of Type V construction in compliance with Section 1406.
3. The area of light-transmitting plastic wall panels in *exterior walls* of greenhouses shall be exempt from the area limitations of Table 2607.4 but shall be limited as required for unprotected openings in accordance with Section 704.8.

2607.5 Automatic sprinkler system. Where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the maximum percentage area of *exterior wall* in any *story* in light-transmitting plastic wall panels and the maximum square footage of a single area given in Table 2607.4 shall be increased 100 percent, but the area of light-transmitting plastic wall panels shall not exceed 50 percent of the wall area in any story, or the area permitted by Section 705.8 for unprotected openings, whichever is smaller. These installations shall be exempt from height limitations.

TABLE 2607.4
AREA LIMITATION AND SEPARATION REQUIREMENTS FOR LIGHT-TRANSMITTING PLASTIC WALL PANELS[a]

FIRE SEPARATION DISTANCE (feet)	CLASS OF PLASTIC	MAXIMUM PERCENTAGE AREA OF EXTERIOR WALL IN PLASTIC WALL PANELS	MAXIMUM SINGLE AREA OF PLASTIC WALL PANELS (square feet)	MINIMUM SEPARATION OF PLASTIC WALL PANELS (feet)	
				Vertical	Horizontal
Less than 6	—	Not Permitted	Not Permitted	—	—
6 or more but less than 11	CC1	10	50	8	4
	CC2	Not Permitted	Not Permitted	—	—
11 or more but less than or equal to 30	CC1	25	90	6	4
	CC2	15	70	8	4
Over 30	CC1	50	Not Limited	3[b]	0
	CC2	50	100	6[b]	3

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.
a. For combinations of plastic glazing and plastic wall panel areas permitted, see Section 2607.6.
b. For reductions in vertical separation allowed, see Section 2607.4.

2607.6 Combinations of glazing and wall panels. Combinations of light-transmitting plastic glazing and light-transmitting plastic wall panels shall be subject to the area, height and percentage limitations and the separation requirements applicable to the class of light-transmitting plastic as prescribed for light-transmitting plastic wall panel installations.

SECTION 2608
LIGHT-TRANSMITTING PLASTIC GLAZING

2608.1 Buildings of Type VB construction. Openings in the *exterior walls* of buildings of Type VB construction, where not required to be protected by Section 705, shall be permitted to be glazed or equipped with light-transmitting plastic. Light-transmitting plastic glazing shall also comply with Section 2606.

2608.2 Buildings of other types of construction. Openings in the *exterior walls* of buildings of types of construction other than Type VB, where not required to be protected by Section 705, shall be permitted to be glazed or equipped with light-transmitting plastic in accordance with Section 2606 and all of the following:

1. The aggregate area of light-transmitting plastic glazing shall not exceed 25 percent of the area of any wall face of the *story* in which it is installed. The area of a single pane of glazing installed above the first *story above grade plane* shall not exceed 16 square feet (1.5 m^2) and the vertical dimension of a single pane shall not exceed 4 feet (1219 mm).

   Exception: Where an *automatic sprinkler system* is provided throughout in accordance with Section 903.3.1.1, the area of allowable glazing shall be increased to a maximum of 50 percent of the wall face of the *story* in which it is installed with no limit on the maximum dimension or area of a single pane of glazing.

2. Approved flame barriers extending 30 inches (762 mm) beyond the *exterior wall* in the plane of the floor, or vertical panels not less than 4 feet (1219 mm) in height, shall be installed between glazed units located in adjacent stories.

   Exception: Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

3. Light-transmitting plastics shall not be installed more than 75 feet (22 860 mm) above grade level.

   Exception: Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

SECTION 2609
LIGHT-TRANSMITTING PLASTIC ROOF PANELS

2609.1 General. Light-transmitting plastic roof panels shall comply with this section and Section 2606. Light-transmitting plastic roof panels shall not be installed in Groups H, I-2 and I-3. In all other groups, light-transmitting plastic roof panels shall comply with any one of the following conditions:

1. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. The roof construction is not required to have a fire-resistance rating by Table 601.
3. The roof panels meet the requirements for roof coverings in accordance with Chapter 15.

2609.2 Separation. Individual roof panels shall be separated from each other by a distance of not less than 4 feet (1219 mm) measured in a horizontal plane.

Exceptions:

1. The separation between roof panels is not required in a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. The separation between roof panels is not required in low-hazard occupancy buildings complying with the conditions of Section 2609.4, Exception 2 or 3.

2609.3 Location. Where *exterior wall* openings are required to be protected by Section 705.8, a roof panel shall not be installed within 6 feet (1829 mm) of such *exterior wall*.

2609.4 Area limitations. Roof panels shall be limited in area and the aggregate area of panels shall be limited by a percent-

age of the floor area of the room or space sheltered in accordance with Table 2609.4.

Exceptions:

1. The area limitations of Table 2609.4 shall be permitted to be increased by 100 percent in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Low-hazard occupancy buildings, such as swimming pool shelters, shall be exempt from the area limitations of Table 2609.4, provided that the buildings do not exceed 5,000 square feet (465 m²) in area and have a minimum fire separation distance of 10 feet (3048 mm).
3. Greenhouses that are occupied for growing plants on a production or research basis, without public access, shall be exempt from the area limitations of Table 2609.4 provided they have a minimum fire separation distance of 4 feet (1220 mm).
4. Roof coverings over terraces and patios in occupancies in Group R-3 shall be exempt from the area limitations of Table 2609.4 and shall be permitted with light-transmitting plastics.

TABLE 2609.4
AREA LIMITATIONS FOR LIGHT-TRANSMITTING PLASTIC ROOF PANELS

CLASS OF PLASTIC	MAXIMUM AREA OF INDIVIDUAL ROOF PANELS (square feet)	MAXIMUM AGGREGATE AREA OF ROOF PANELS (percent of floor area)
CC1	300	30
CC2	100	25

For SI: 1 square foot = 0.0929 m².

SECTION 2610
LIGHT-TRANSMITTING PLASTIC SKYLIGHT GLAZING

2610.1 Light-transmitting plastic glazing of skylight assemblies. Skylight assemblies glazed with light-transmitting plastic shall conform to the provisions of this section and Section 2606. Unit skylights glazed with light-transmitting plastic shall also comply with Section 2405.5.

units horizontal (25-percent slope) in occupancies in Group R-3 and on buildings with a nonclassified roof covering.

2. The metal or noncombustible edge material is not required where nonclassified roof coverings are permitted.

2610.3 Slope. Flat or corrugated light-transmitting plastic skylights shall slope at least four units vertical in 12 units horizontal (4:12). Dome-shaped skylights shall rise above the mounting flange a minimum distance equal to 10 percent of the maximum span of the dome but not less than 3 inches (76 mm).

Exception: Skylights that pass the Class B Burning Brand Test specified in ASTM E 108 or UL 790.

2610.4 Maximum area of skylights. Each skylight shall have a maximum area within the curb of 100 square feet (9.3 m²).

Exception: The area limitation shall not apply where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or the building is equipped with smoke and heat vents in accordance with Section 910.

2610.5 Aggregate area of skylights. The aggregate area of skylights shall not exceed $33^1/_3$ percent of the floor area of the room or space sheltered by the roof in which such skylights are installed where Class CC1 materials are utilized, and 25 percent where Class CC2 materials are utilized.

Exception: The aggregate area limitations of light-transmitting plastic skylights shall be increased 100 percent beyond the limitations set forth in this section where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or the building is equipped with smoke and heat vents in accordance with Section 910.

2610.6 Separation. Skylights shall be separated from each other by a distance of not less than 4 feet (1219 mm) measured in a horizontal plane.

Exceptions:

1. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. In Group R-3, multiple skylights located above the

IBC Chapter 21

- **Masonry**

Substantial portions of Chapter 21 were deleted and replaced with references to the 2008 edition of the Masonry Standards Joint Committee (MSJC) code. In addition to deleting many code sections, modifications were made to coordinate requirements with the provisions in the 2008 MSJC code.

In addition, the name of the 2008 MSJC code was changed to TMS 402/ACI 530/ASCE 5.

IBC Chapter 21

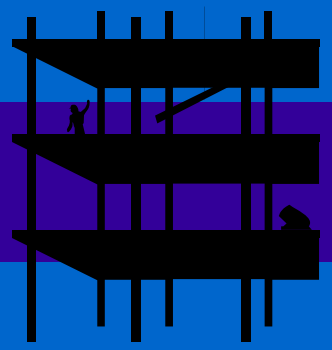
- **IBC Sections 2111.3, 2111.4, 2113.4**

Masonry and Concrete Fireplaces - Seismic

The requirements for reinforcing and anchorage of masonry and concrete fireplaces and chimneys in Seismic Design Category D were extended to also apply to structures in Seismic Design Category C.

IBC Chapter 22

- **Steel**



The most significant change to Chapter 22 is the updated reference to the 2007 editions of the American Iron and Steel Institute (AISI) standards for design of cold-formed steel framing.

Many changes correlated the IBC provisions with the latest editions of the various AISI standards.

IBC Chapter 22

- **IBC Section 2209.2**
  Steel Decks

New code language references two new Steel Deck Institute (SDI) standards for design and construction of cold-formed steel floor and roof decks that can be used in lieu of the more formal approach of AISI S100.

IBC Chapter 22

- **IBC Section 2208**
  Steel Storage Racks

This section references the latest version of the Rack Manufacturers Institute (RMI) standard that includes many clarifications that address issues related to seismic design of racks in previous editions of the RMI standard, RMI/ANSI MH 16.1.

The provisions are now coordinated with ASCE 7-05.

IBC Chapter 22

- **IBC Section 2210.3 Trusses**

For cold-formed steel trusses, the code references the new North American Standard for Cold-Formed Steel Framing—Truss Design (AISI S214).

Code language was added for cold-formed steel trusses similar to requirements for wood trusses in Section 2303.4.

IBC Chapter 22

• IBC Section 2210.3 Trusses (Cont'd)

Specific requirements were added for design of temporary and permanent bracing for cold-formed steel trusses spanning 60 feet or greater.

IBC Chapter 23

- **Wood**
  Sections 2305, 2306, 2307

The most significant change to Chapter 23 are:

– The deletion of substantial portions of Section 2305 because the code now references the 2008 edition of the ANSI/AF&PA NDS Supplement "Special Design Provisions for Wind and Seismic" (SDPWS) standard for lateral design of wood structures.

IBC Chapter 23

- **Wood**

Sections 2305, 2306, 2307

  - Many general design provisions for wood structures in Section 2306 were also deleted because they are contained in the AF&PA SDPWS standard.

  - Since the SDPWS is a dual-format standard (ASD/LRFD), a reference to the SDPWS was added to Section 2307 for load and resistance factor design (LRFD) of wood structures.

IBC Chapter 23

- **IBC Section 2301.2**
  General Design Requirements

Now includes a reference to the new ICC-400 Standard for the Design and Construction of Log Structures, thus giving designers and building officials code provisions for design, construction, and inspection of log construction.

IBC Chapter 23

- **IBC Section 2303.1.4.3**

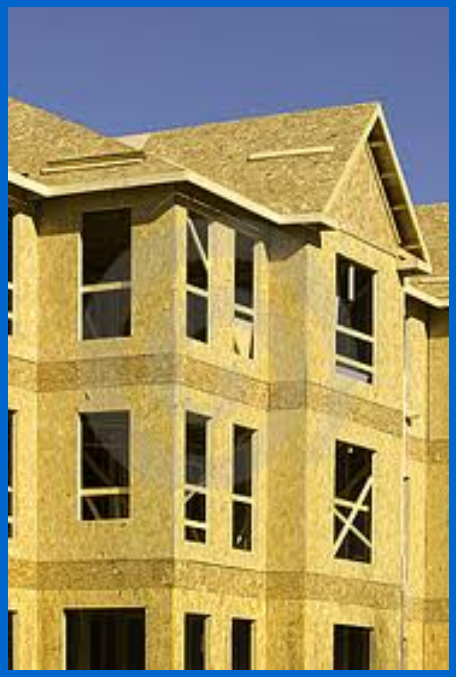
Trusses spanning 60 feet or greater

Specific requirements were added for design of temporary and permanent bracing for wood trusses spanning 60 feet or greater. In addition, wood trusses spanning 60 feet or greater require special inspection.

IBC Chapter 23

- **IBC Section 2304.6.1, Table 2304.6.1**
  Wood structural panel sheathing

A new table for selecting wood structural panel wall sheathing to resist component and cladding wind loads was added.



IBC Chapter 23

- **IBC Section 2304.9.5**
  Connections and Fasteners

Changes to the provisions for fasteners in preservative-treated and fire retardant-treated wood are intended to reduce confusion between the code requirements and the manufacturer's recommendations.

**Watch for third party inspection agency on labels.

IBC Chapter 23

- **IBC Section 2304.9.5.1 Fasteners and Connectors for Preservative–Treated Wood**

Plain carbon steel nails, timber rivets, wood screws, and lag screws used in SBX/DOT and zinc borate preservative-treated wood in an interior, dry environment are not required to be hot dipped galvanized.

IBC Chapter 23

- **IBC Section 2304.11.2.6**

Wood Siding

A minimum vertical clearance of 2 inches between wood siding and concrete steps, porch slabs, and patio slabs is now specified in the code.

IBC Chapter 23

- **IBC Section 2306.6**
  Fiberboard Shear Walls

Section 2306.6—Allowable shear values for fiberboard shear walls were modified to be consistent with AF&PA SDPWS for nailed fiberboard shear walls.

IBC Chapter 23

- **IBC Section 2306.7**
  Shear Walls Sheathed With Other Materials

The allowable shear value for 3/8-inch gypsum lath and 1/2-inch plaster was increased to 180 pounds per linear foot (plf) from 100 plf as it was in previous editions of the code.

IBC Chapter 23

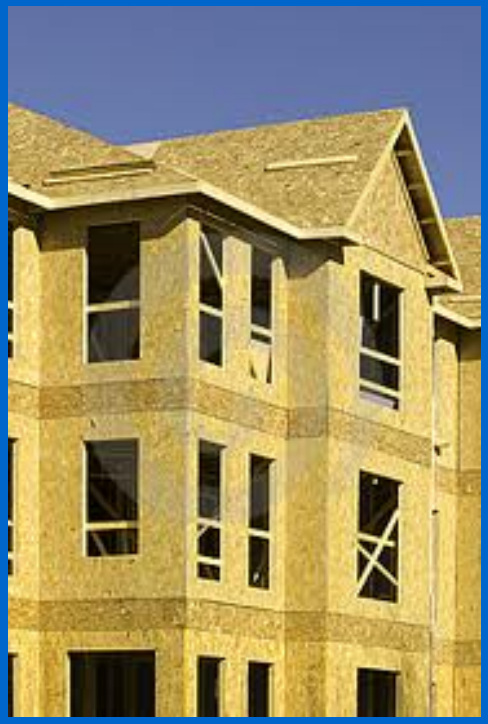
- IBC Section 2308

Conventional Light-Frame Construction

IBC Chapter 23

- **IBC Section 2308.2 2. Limitations**

Code language regarding floor-to-floor and stud height limitations has been clarified.



- Maximum floor-to-floor height shall not exceed 11 feet, 7 inches. Bearing wall height shall not exceed a stud height of 10 feet.

IBC Chapter 23

- **IBC Section 2308.3.2**

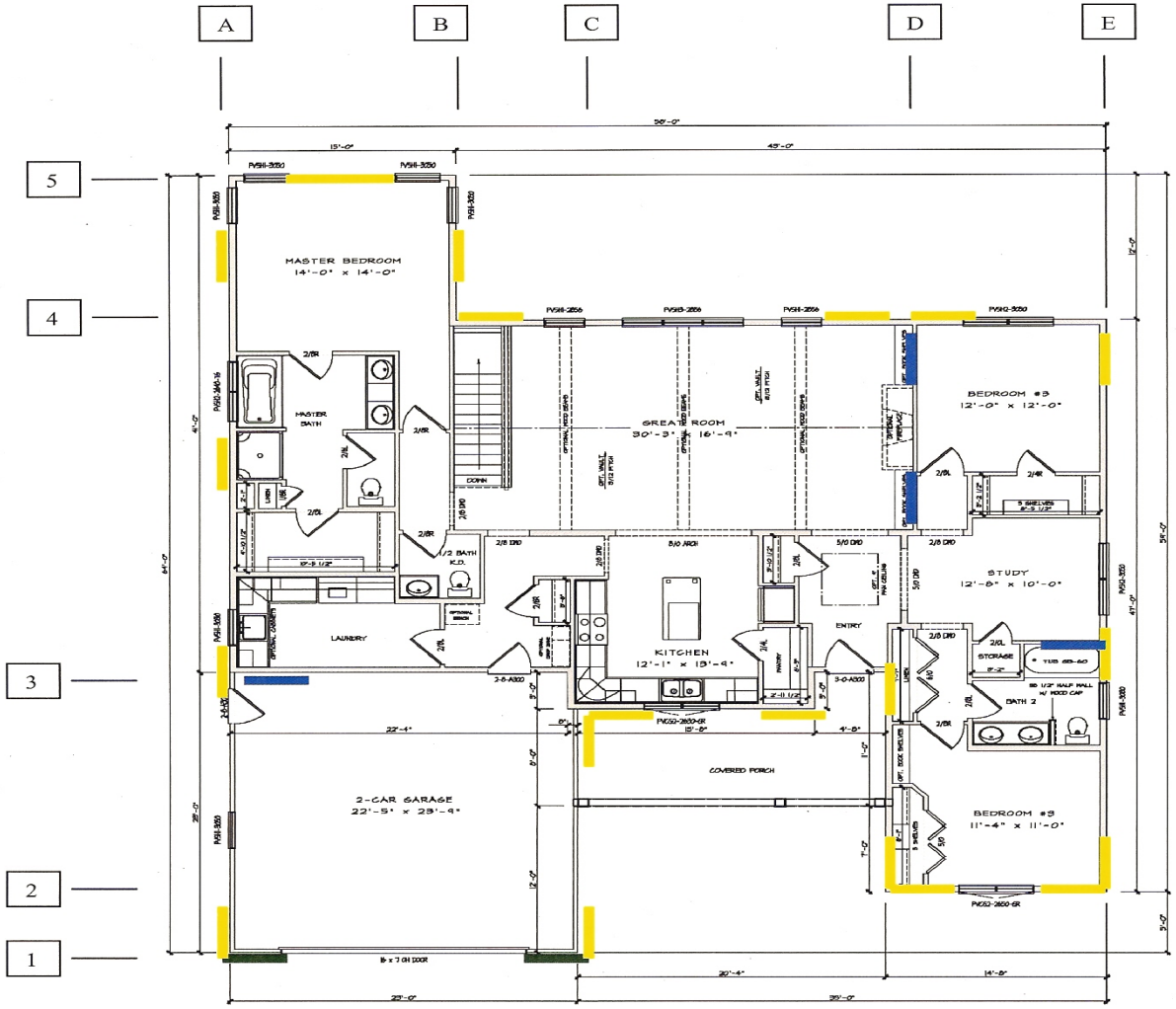
Braced Wall Line Connections

Changes were made to the prescriptive wall bracing provisions that clarify connections applies to braced wall lines instead of the braced wall panel portions of braced wall lines.

Continuously- sheathed per s. Comm 21.25(9)(c)5., Fig. 21.25-K, W/2 foot return.

Four Feet of Wood Structural Panel Sheathing or Diagonal Bracing

Four Feet of Gypsum Wallboard Applied to Both Sides of Wall or Diagonal Bracing.



Building #1
One-Story

First Floor

IBC Chapter 23

• IBC Section 2308.6 & 2308.12.8 Structural Floor Sheathing & Sill Plate Anchorage

Prescriptive sill plate anchorage provisions were changed to permit the use of strap anchors in lieu of anchor bolts in general and in high seismic regions where conventional construction is permitted.

IBC Chapter 23

• IBC Section 2308.9 Wall Framing

Section 2308.9—Except for trimmer and cripple studs at openings in walls, wall studs are now specifically required to be continuous from a support at the sole plate to a support at the top plate to resist out-of-plane loads perpendicular to wall.

The result is where scissor trusses are used to create vaulted ceilings, gable end walls must be balloon framed to the bottom chord of the gable end truss or entirely balloon framed to the roof deck.

IBC Chapter 24, Glass and Glazing

- **IBC Sections 2406, 2407 and 2408 Safety Glazing, Glass in Handrails and Guards, & Glazing in Athletic Facilities**

An updated ANSI Z97.1 standard issued in 2004 is referenced in this chapter and glass or glazing meeting this standard may be used in locations other than doors or enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers.

TABLE 2406.2(2)
MINIMUM CATEGORY CLASSIFICATION OF GLAZING USING ANSI Z97.1

EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE	GLAZED PANELS REGULATED BY ITEM 7 OF SECTION 2406.4 (Category class)	GLAZED PANELS REGULATED BY ITEM 6 OF SECTION 2406.4 (Category class)	DOORS AND ENCLOSURES REGULATED BY ITEM 5 OF SECTION 2406.4[a] (Category class)
9 square feet or less	No requirement	B	A
More than 9 square feet	A	A	A

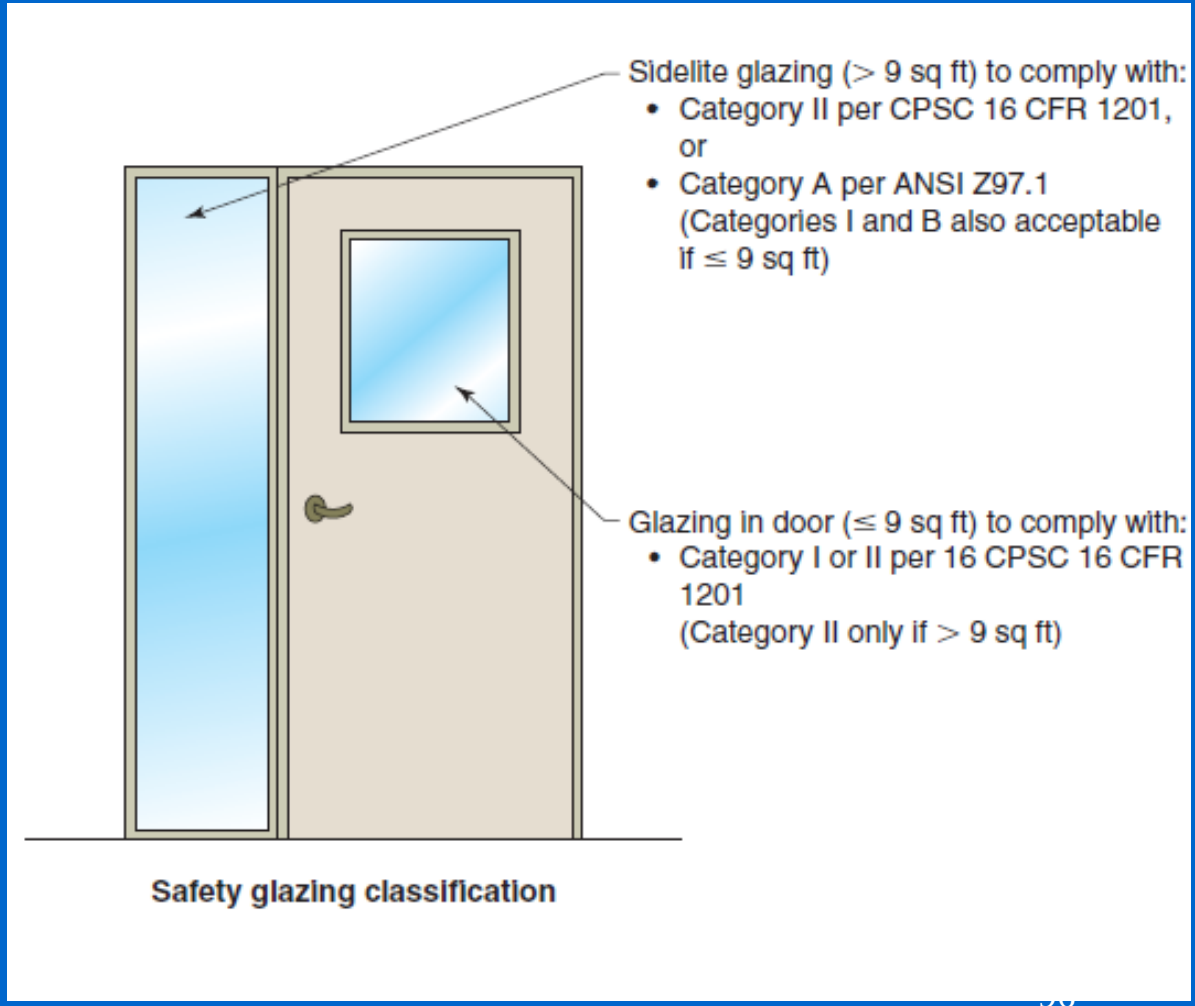
For SI: 1 square foot = 0.0929 m^2.

a. Use is only permitted by the exception to Section 2406.2.

IBC Chapter 24, Glass and Glazing

Acceptance of ANSI Z97.1 Safety Glazing

- In locations other than regulated by CPSC 16 CFR 1201 for doors and tub & shower enclosures
- ≤ 9 SF : CPSC Cat I or II or ANSI Category A or B
- > 9 SF : CPSC Cat II or ANSI Category A



Safety glazing classification

IBC Chapter 24, Glass and Glazing

- **IBC Section 2407.1.2**
  Support, Glass in Handrails and Guards

An exception was added to exclude the need for a top rail.

IBC Chapter 24, Glass and Glazing

•IBC Section 2409
Glass in Elevator Hoistways and Elevator Cars

This section was expanded to include:

- Requirements for fire-resistance-rated hoistway enclosures.
- Limit on glass size in hoistway doors
- Requirements for glass vision panels in hoistway doors.
- Requirements for glass in car enclosures.

IBC Chapter 25, Gypsum Board and Plaster

- **IBC Tables 2506.2 & 2511.1.1**
  Gypsum Board Materials & Interior Plaster

New ASTM standards were added.

IBC Chapter 25, Gypsum Board and Plaster

•IBC Section 2509.2 Base for Tile

The terms glass mat water-resistant gypsum and nonasbestos fiber-cement/mat were added to this section.

IBC Chapter 25, Gypsum Board and Plaster

- **IBC Section 2512.1 General, Exterior Plaster**

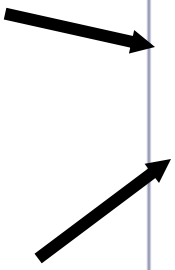
Gypsum board backing now requires three coats of cement plaster while in the 2006 IBC it was only two coats.

Primary Referenced Structural Standards Comparison, 2006 IBC vs. 2009 IBC.
Any changed or new standards in the 2009 IBC are in **bold**.

Subject	2006 IBC	2009 IBC
Loads	ASCE/SEI 7-05	ASCE/SEI 7-05 **with Supplement No. 2**
Concrete	ACI 318-05	**ACI 318-08**
Masonry	ACI 530-08/ASCE 5-05/TMS 402-05	**TMS 402-08/ACI 530-08/ASCE 5-08**
Steel	AISC 360-05	AISC 360-05
Steel - Seismic	AISC 341-05	AISC 341-05
Steel - Cold formed	AISI NAS-01 including 2004 Supplement	**AISI S100-07**
General	AISI General 2004	**AISI S200-07 General Provisions**
Wall studs	AISI WSD 2004	**AISI S211-07 Wall Stud Design**
Headers	AISI Header 2004	**AISI S212-07 Header Design**
Lateral design	AISI Lateral 2004	**AISI S213-07 Lateral Design**
Truss design	AISI Truss 2004	**AISI S214-07 Truss Design with Supplement 2**
Prescriptive design for one- and two-family dwellings	AISI PM 2004	**AISI S2330-07 Prescriptive Method for One- and Two-Family Dwellings with Supplement No. 2**
Floor and roof systems	N/A	**AISI S210-07 Floor and Roof System Design**
Steel deck	N/A	**ANSI/SDI NC1.0-06 Standard for Noncomposite Steel Floor Deck ANSI/RDI NC1.0-06 Standard for Steel Roof Deck**
Steel racks	RMI (2002)	**ANSI/MH 16.1 – 08**
Wood	AF&PA NDS-05 SDPWS (2005) WFCM (2001)	AF&PA NDS-05 **SDPWS (2008)** WFCM (2001)
Antenna tower	TIA 222-F-96	**TIA 222-G-05 including Addendum 1, 222-G-1, Dated 2007**

http://dsps.wi.gov/SB/SB-DivRecalls.html

- S&B Home Page
- Daily News Updates
- Product recalls and safety messages
- Scroll down to Archive



Archive (more than six months old)

- July 13, 2010, **Wire feed welders** recalled by Star Asia due to burn hazard (CPSC)
- July 6, 2010, White Co. **stadium light poles** (some in Wisconsin) recalled due to incidents of collapse CPSC
- April 2010, Cover-All Building Systems says **Titan Buildings** may not have adequate load capacity - See Notice, PDF file
- March 11, 2010, **Coil nailers** recalled by Hitachi (CPSC)
- Jan. 8, 2010, **Home improvement books** from Oxmoor House recalled (CPSC)
- Dec. 22, 2009, Temperature and pressure **relief valves** for large water heaters recalled by Watts (CPSC)
- Oct. 6, 2009 - DeVilbiss reannounces recall of **pressure washers and air compressors** (CPSC)
- August 19, 2009 - **Ridgid table saws** sold at Home Depot recalled due to laceration hazard (CPSC)
- August 14, 2009 - Homelite, Husky and Black Max electricity **generators**

ADDITIONAL RESOURCE DOCUMENTS

- 2009 IBC Commentary - Volume II (Chapters 16 to 35)

- 2009 IBC Fundamentals, Structural Provisions

Available from ICC at ww.iccsafe.org

ADDITIONAL RESOURCE DOCUMENTS (cont'd)

• Questions and Guide to the Use of the Wind Load Provisions of ASCE 7-98/02/05

•Questions and Guide to the Use of the Wind Load Provisions of ASCE 7-98/02/05

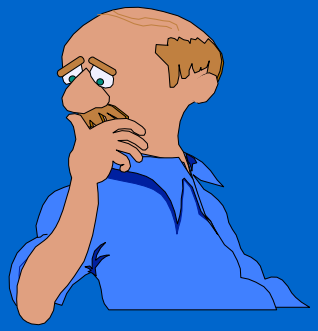
Available from ASCE publications
1-800-548-ASCE or visit www.asce.org

ADDITIONAL RESOURCE DOCUMENTS (cont'd)

- 2003 NEHRP (BSSC) - Recommended provisions for the Development of Seismic Regulations for New Buildings and Other Structures, FEMA 450 2003 Edition

- 2009 NEHRP (BSSC) - Recommended Seismic Provisions for New Buildings And Other Structures, FEMA P-750 2009 Edition

Available from FEMA
1-800-480-2520 or visit www.bssconline.org



Any Questions?