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Navigating Building Code's Reference Standards

Key Changes, Impacts, & Essential Updates Every CM Should Know

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Alpine, an ITW Company

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A wide-angle photograph of a city skyline at sunset. The sky is a mix of orange, yellow, and blue with scattered clouds. In the foreground, a river flows under a multi-arched bridge. The city skyline is filled with various skyscrapers, including one with a prominent green dome and another with a tall, thin spire. The water in the river reflects the colorful sky and the city lights. A large red shape, resembling a stylized roof or a banner, covers the top-left portion of the image, containing the BCMC logo and text.

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Introduction



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Understanding 2024 IBC and IRC

Session Outline and Guiding Questions:

- Why does code adoption matter?
- Governing bodies and the process of code change
- How are Codes and Standards connected?
- Key changes in ASCE 7-22: Wind, Tornado, and Snow
- TPI 2022 changes and impacts on truss design
- Q&A

Building Codes are Written in Blood!

1754 BC

The Hammurabi Code - First known written building code King Hammurabi of Babylon

1631

City of Boston Fire - Banned wood chimneys and thatch roofs

1845

The Great New York City Fire - 30 deaths and 345 buildings destroyed

1871

The Great Chicago Fire - 300 deaths and over 100,000 left homeless

1992

Hurricane Andrew - FBC was enacted and went into effect March 2002



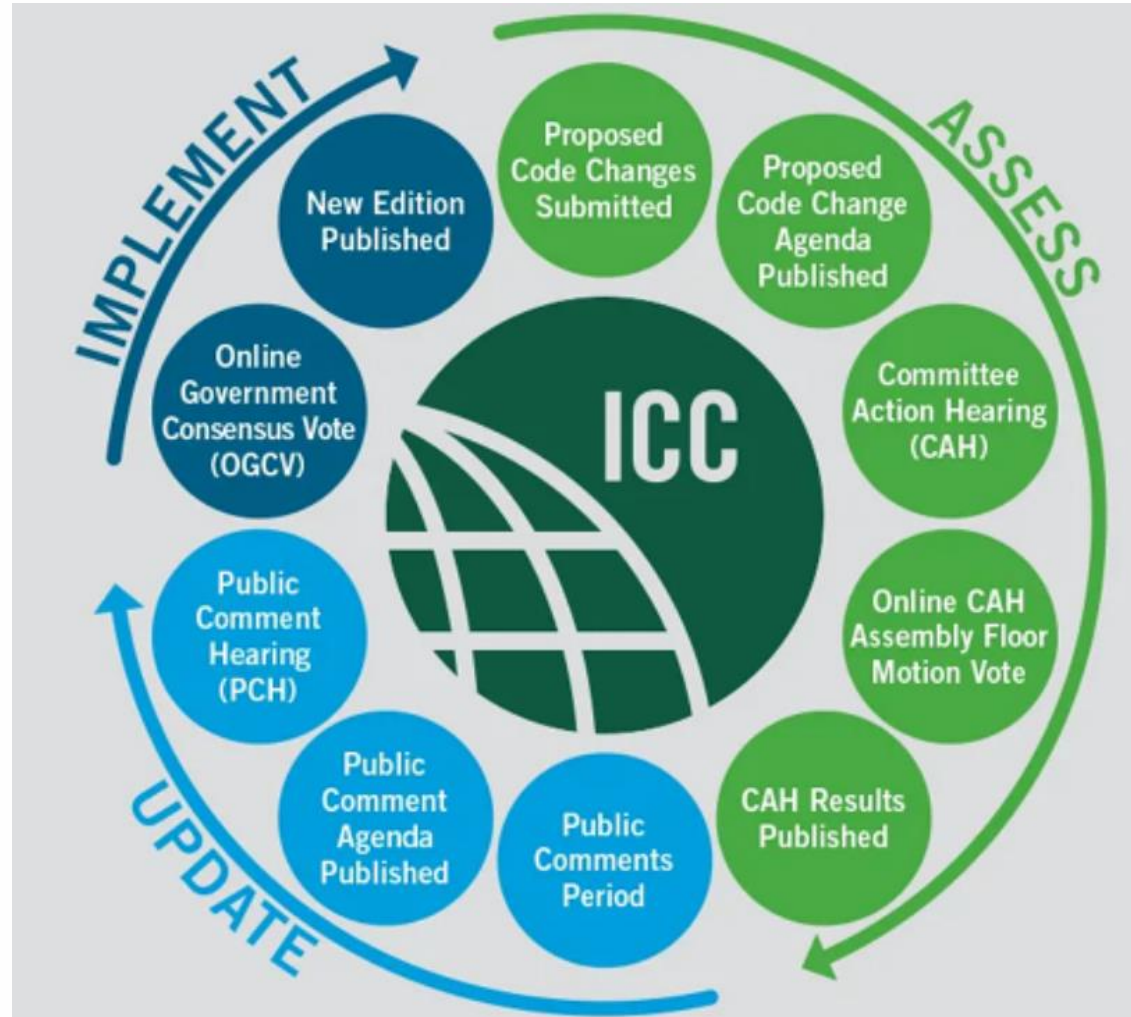
Governing Bodies and Code Changes

IBC and FBC are on a 3-year code cycle.

The basic purposes of a periodic code development cycle are to:

- Correct errors
- Correct omissions
- Introduce new tech
- Align with other accepted codes and standards
- New findings from building science research
- Respond to assessments following catastrophic events
- Replace outdated provisions

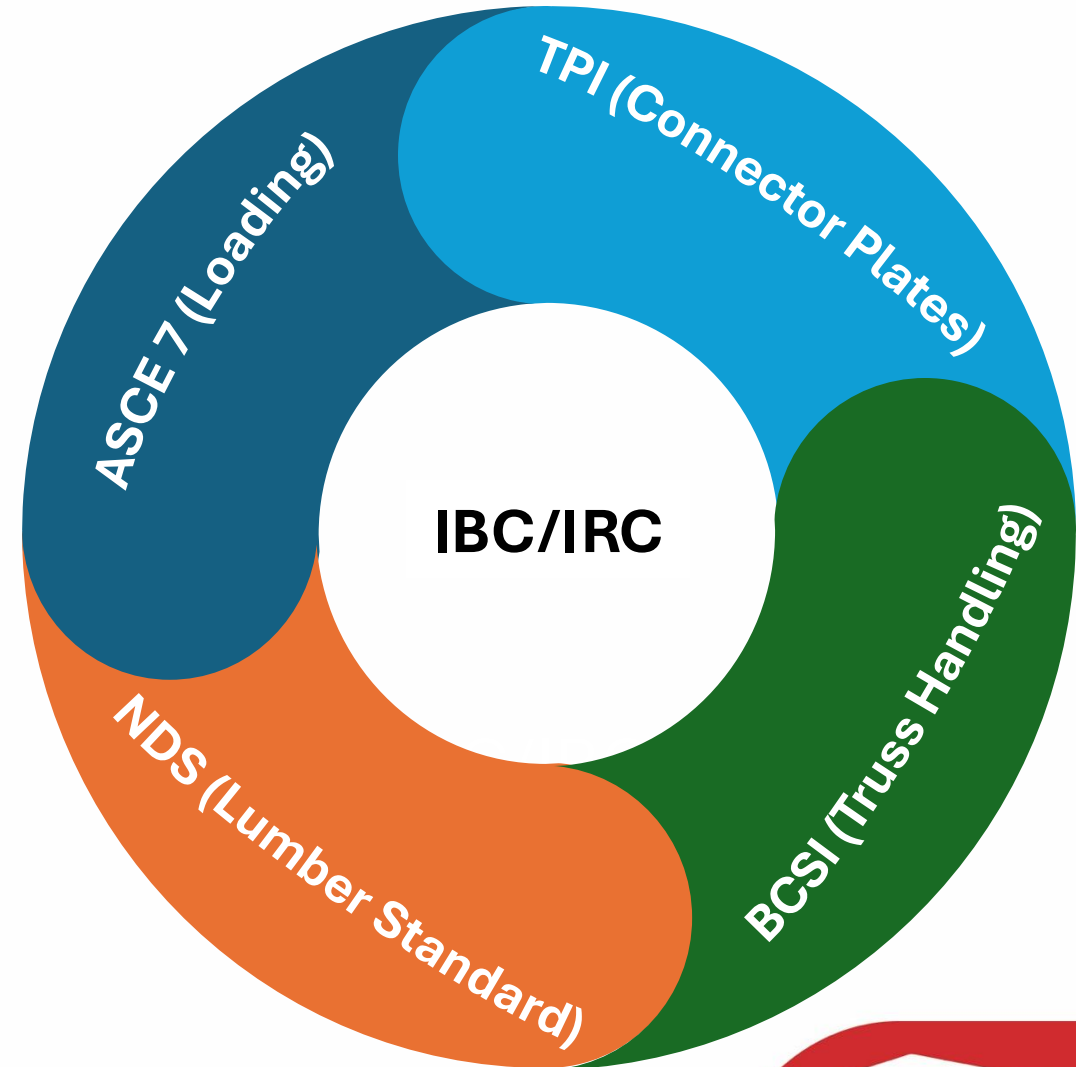
Governing Bodies and Code Changes



How Codes and Standards are Connected

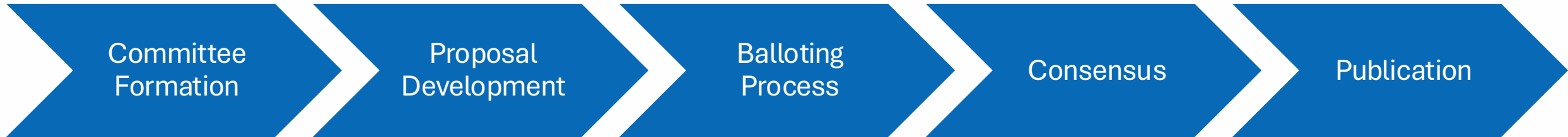
Standards are:

- Technical criteria on a specific topic
- Developed by industry organizations
- The building blocks for building codes



How Codes and Standards are Connected

- Reference standards have different development cycles than code. ASCE 7 every 6 years
- When a new code is released the most current reference standards are typically referenced



How Codes and Standards are Connected

2021 IRC

ASCE/SEI 7-16

Minimum Design Loads and Associated Criteria for Buildings and Other Structures

ANSI/TPI 1-2014

National Design Standard for Metal Plate Connected Wood Truss Construction

ANSI/AWC NDS 2018

National Design Specification for Wood Construction
2024 NDS Supplement

ANSI/SBCA BCSI 2015

Building Component Safety Information – Guide to Good Practice for Handling, Installing, Restraining, & Bracing of Metal Plate Connected Wood Trusses



2024 IRC

ASCE/SEI 7-22

Minimum Design Loads and Associated Criteria for Buildings and Other Structures

ANSI/TPI 1-2022

National Design Standard for Metal Plate Connected Wood Truss Construction

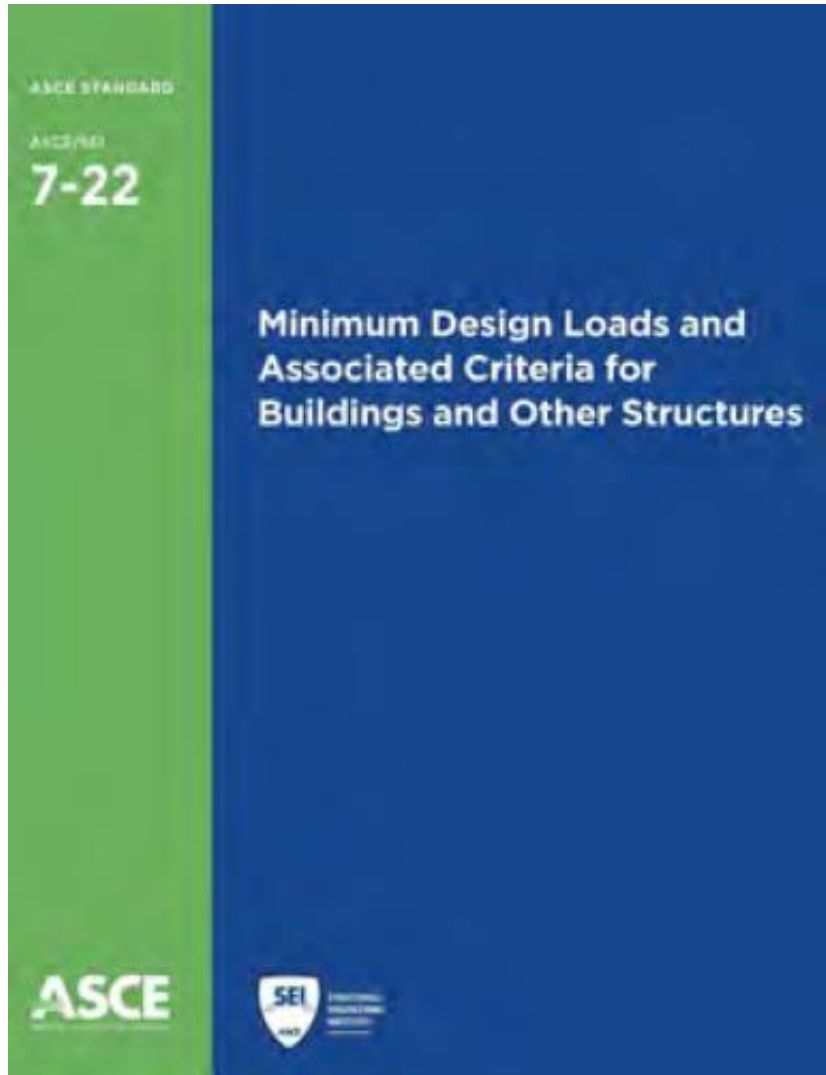
ANSI/AWC NDS 2024

National Design Specification for Wood Construction
2024 NDS Supplement

ANSI/SBCA BCSI 2018

Building Component Safety Information – Guide to Good Practice for Handling, Installing, Restraining, & Bracing of Metal Plate Connected Wood Trusses

Key Changes in ASCE 7

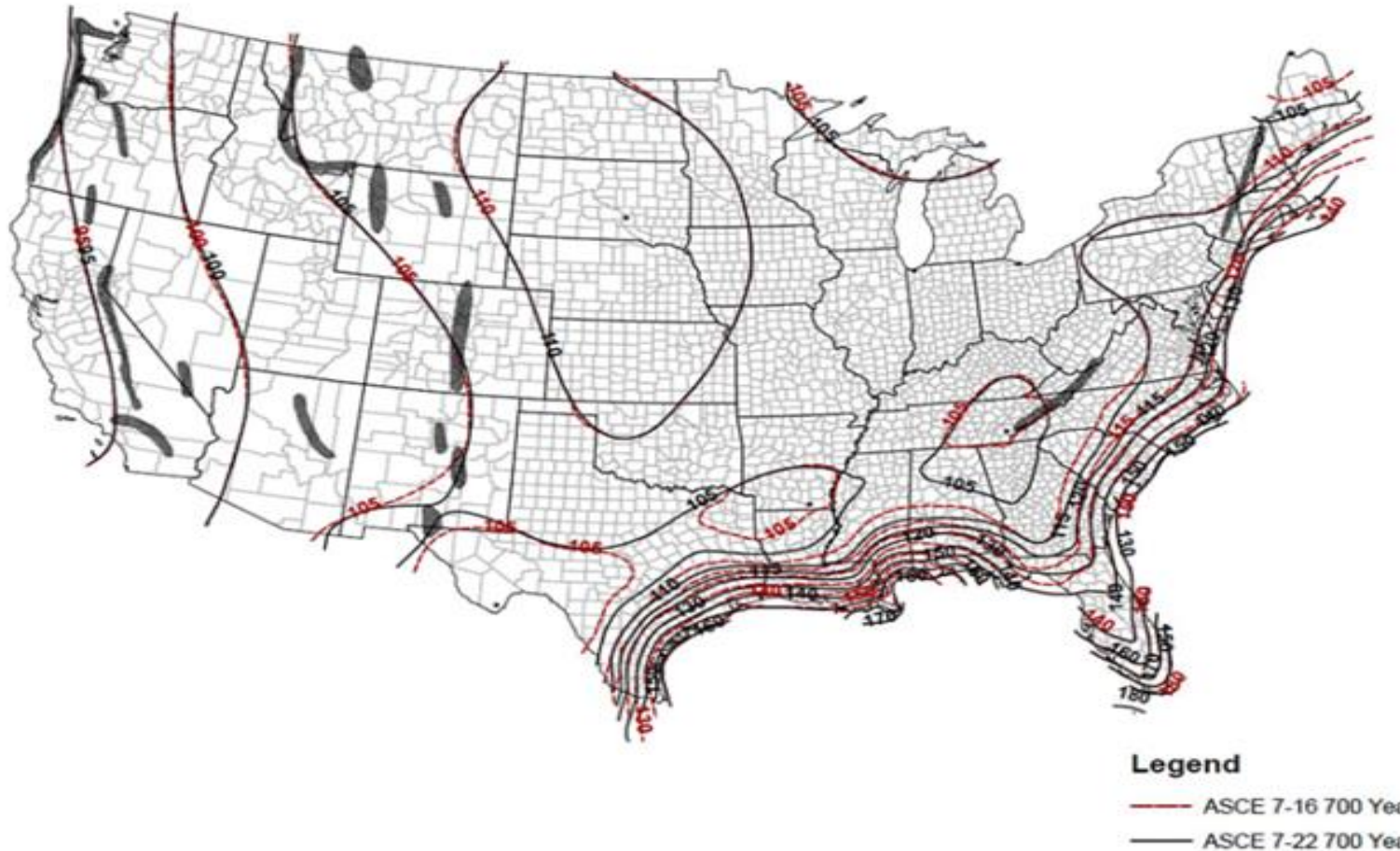


Changes from ASCE 7-16 to ASCE 7-22 Wind:

- Basic wind speed maps
- Changes to Wind-Borne Debris Region (WBDR)
- A more simplified graph for $G C_p$ with only three zones
- Tornado wind loading

Changes in ASCE 7-22: Wind

The basic wind speed maps in ASCE 7-22 have been updated, primarily in hurricane-prone areas, you can expect increased wind speed under ASCE 7-22



Wind Borne Debris Region (WBDR)

26.12.3.1 Wind-Borne Debris Region. Glazed openings shall be protected in accordance with Section 26.12.3.2 in the following location:

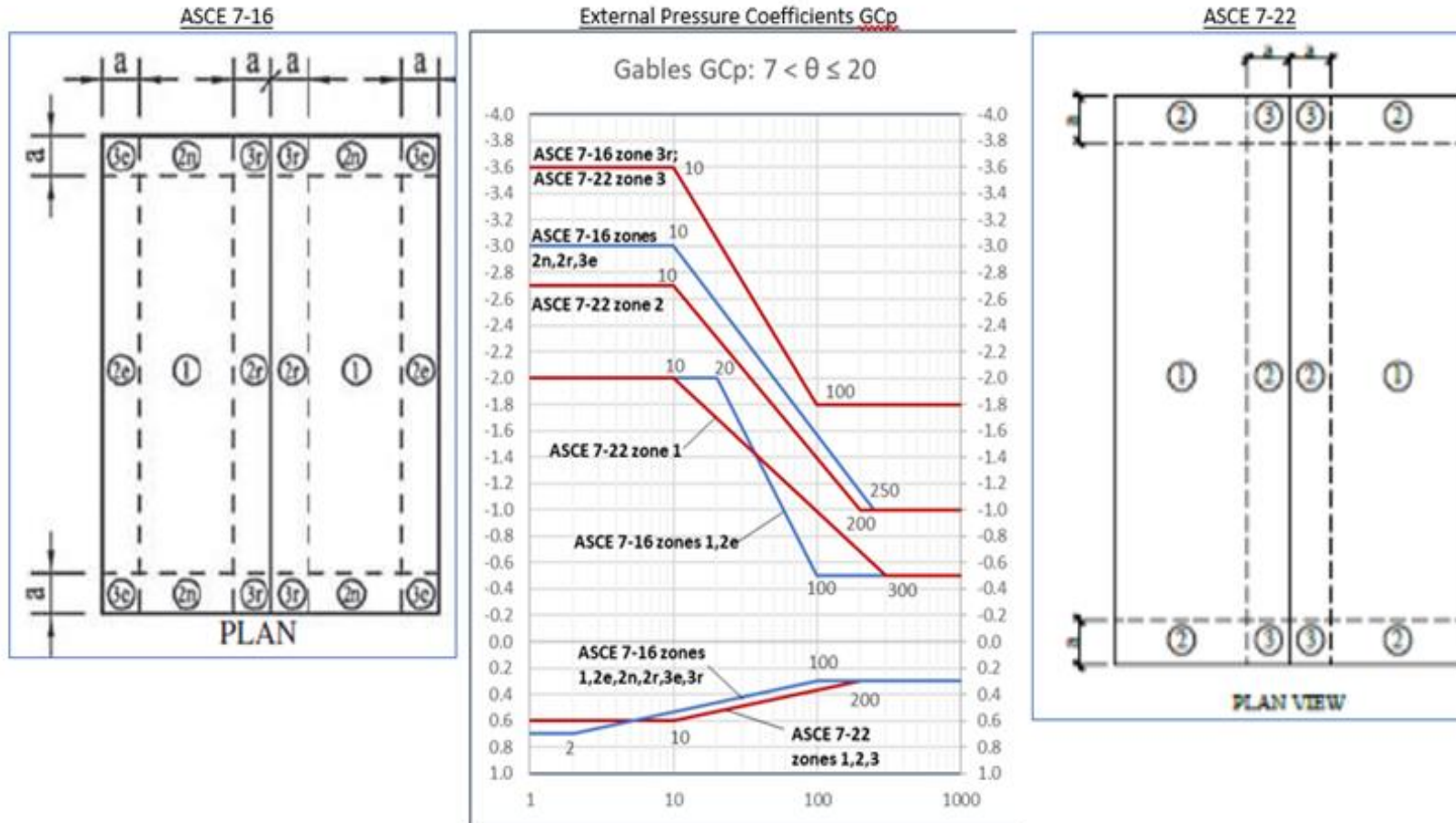
- Locations where the basic wind speed is equal to or greater than 140 mph
- Locations within 1 mile of any body of water and an Exposure D condition exists upwind of the water line



The impact of this change is illustrated for Panama City, FL

External Pressure Coefficient (GC_p)

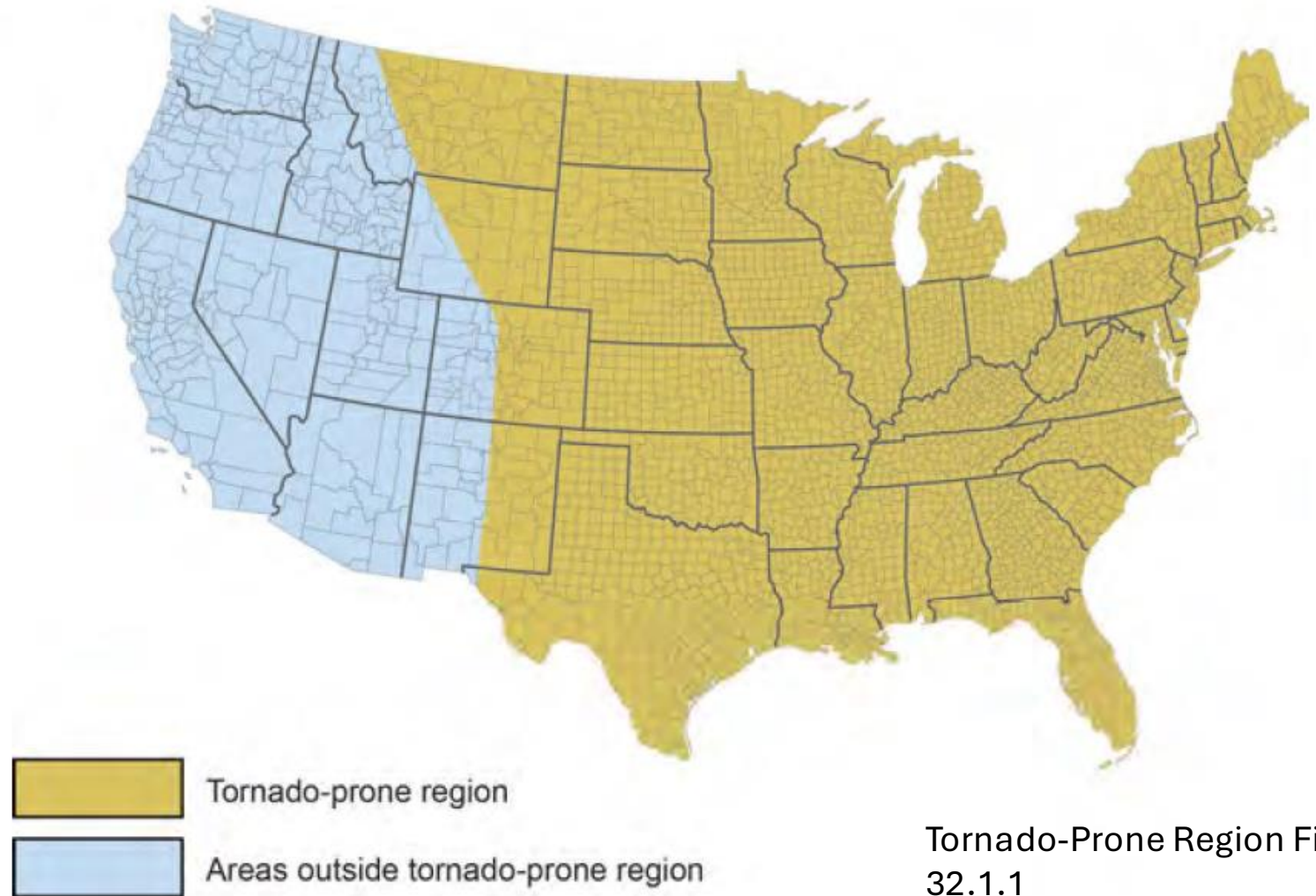
Figure 30.3-2B Gable roof angles greater than 7 degrees but less than or equal 20 degrees



External Pressure Coefficients GC_p Roof angles greater than 7° but less than or equal to 20°

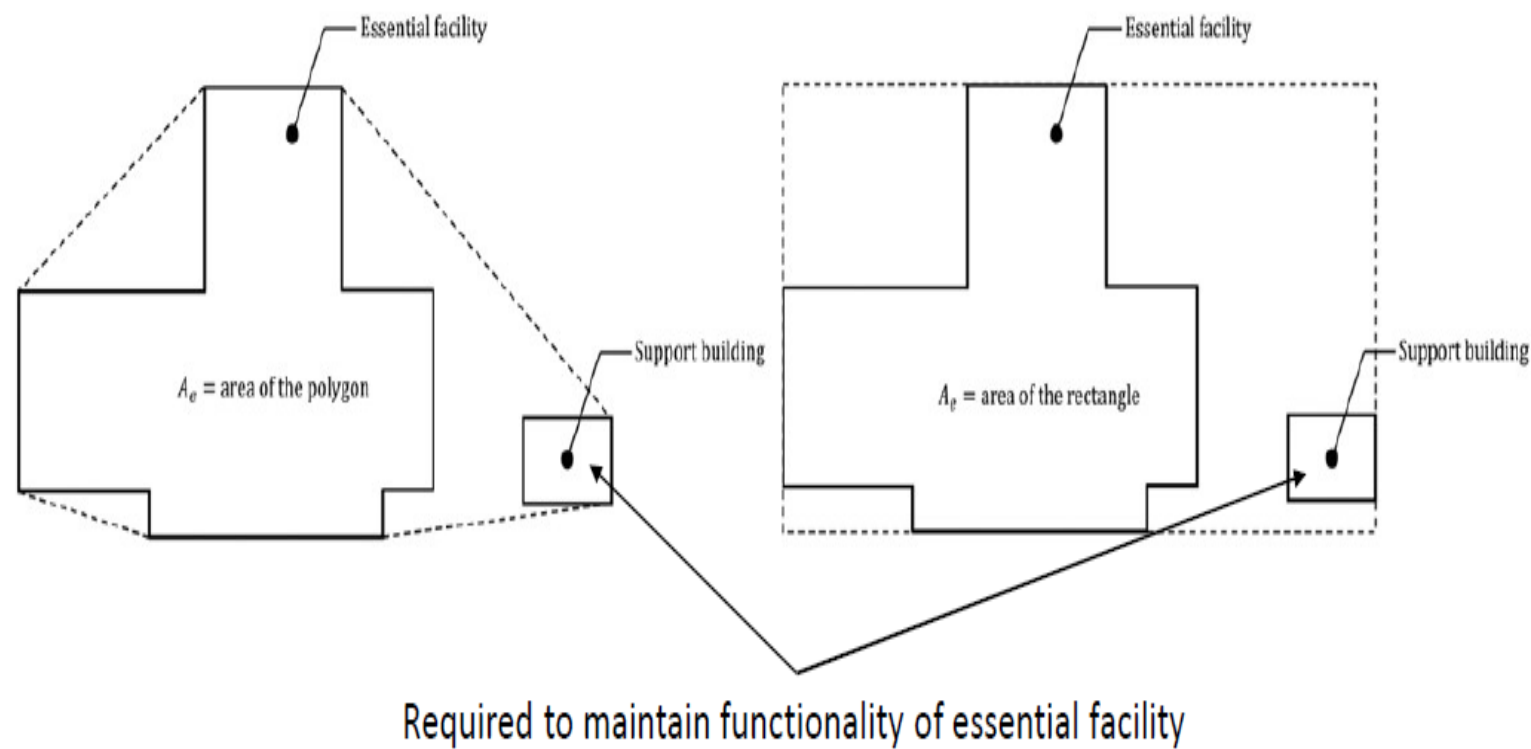
Chapter 32 Tornado Loads

- Tornado Prone Region
- Effective Plan Area
- Risk CAT III and IV



Tornado-Prone Region Figure 32.1.1

Tornado Loads Effective Plan Area



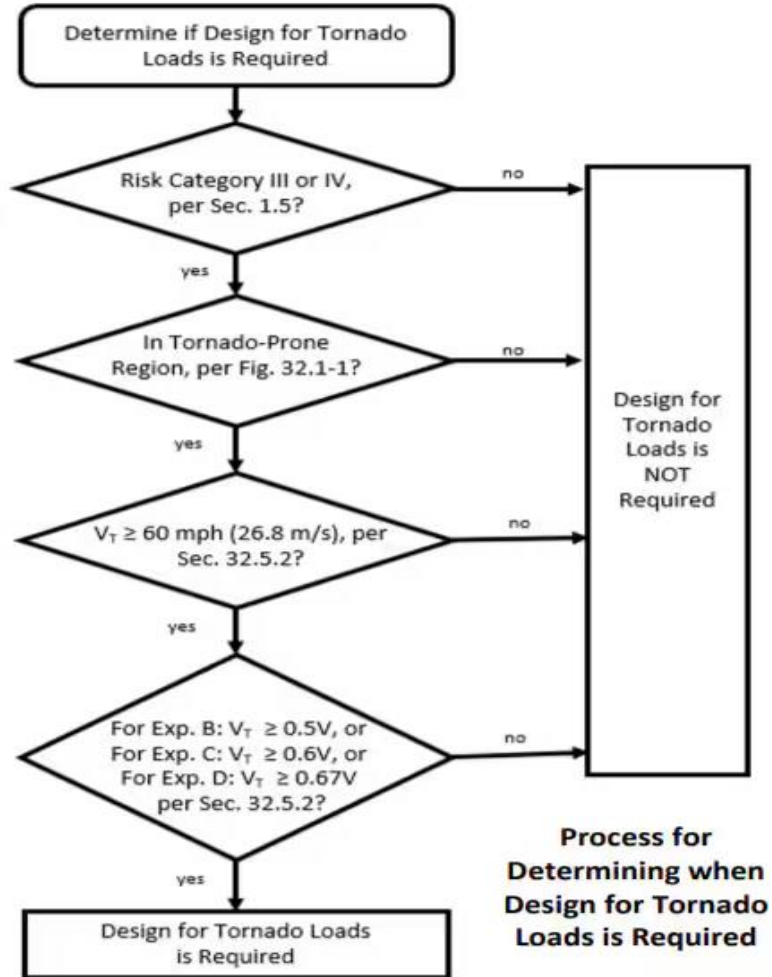
Effective Plan Area	Risk CAT III Figure	Risk CAT IV Figure
1	32.5-1A	32.5-2A
2,000	32.5-1B	32.5-2B
10,000	32.5-1C	32.5-2C
40,000	32.5-1D	32.5-2D
100,000	32.5-1E	32.5-2E
250,000	32.5-1F	32.5-2F
1,000,000	32.5-1G	32.5-2G
4,000,000	32.5-1H	32.5-2H

Chapter 32 Tornado Loads



- 32.5: Tornado Hazard Wind Speed Maps
- 32.5-2E Risk Category IV: effective plan area of 100,000 sq ft

Tornado Prone Regions Exception



Tornado Loads Not Required if:

- $V_T < 60 \text{ mph}$
- $V_T \geq 60 \text{ mph}$
 - For Exposure B: $V_T < 0.5V$
 - For Exposure C: $V_T < 0.6V$
 - For Exposure D: $V_T < 0.67V$

Changes in ASCE 7-22: Snow

- Ground Snow (P_g) – Updated maps
- Allowable Stress Design (ASD) Load combination equations that included snow have been modified
- Thermal Factor (C_t) – Revised
- Importance Factor for Snow (I_s) – Eliminated
- Winter Wind Parameter (W_2) – New variable for calculating drift heights and unbalanced snow

Ground Snow Load, P_g

ASCE 7-22

- 2% Annual probability of exceedance, 50-year mean recurrence interval

ASCE 7-16

- Risk-Targeted Snow Loading
- Ground Snow P_g changes for each Building Category

Design Methodology

LRFD (Load and Resistance Factor Design):

A design method where loads are increased (factored) to account for uncertainties, and materials are assigned reduced strengths to ensure a consistent level of safety

ASD (Allowable Stress Design):

A design method where actual loads are applied directly (no load factors), and the resulting stresses must not exceed the material's allowable stress. ASD is common in wood-framed roof design as it is simpler and a less conservative approach where loads are well defined

Service Level Load vs Ultimate Load

- Prior versions of ASCE 7 snow were at a service level load
- ASCE 7-22 shows snow as ultimate load. The ultimate snow load or strength-based loads must be converted to Allowable Stress Design (ASD) snow load, $P_{g(asd)}$

$$P_{g(asd)} = 0.7 P_g$$

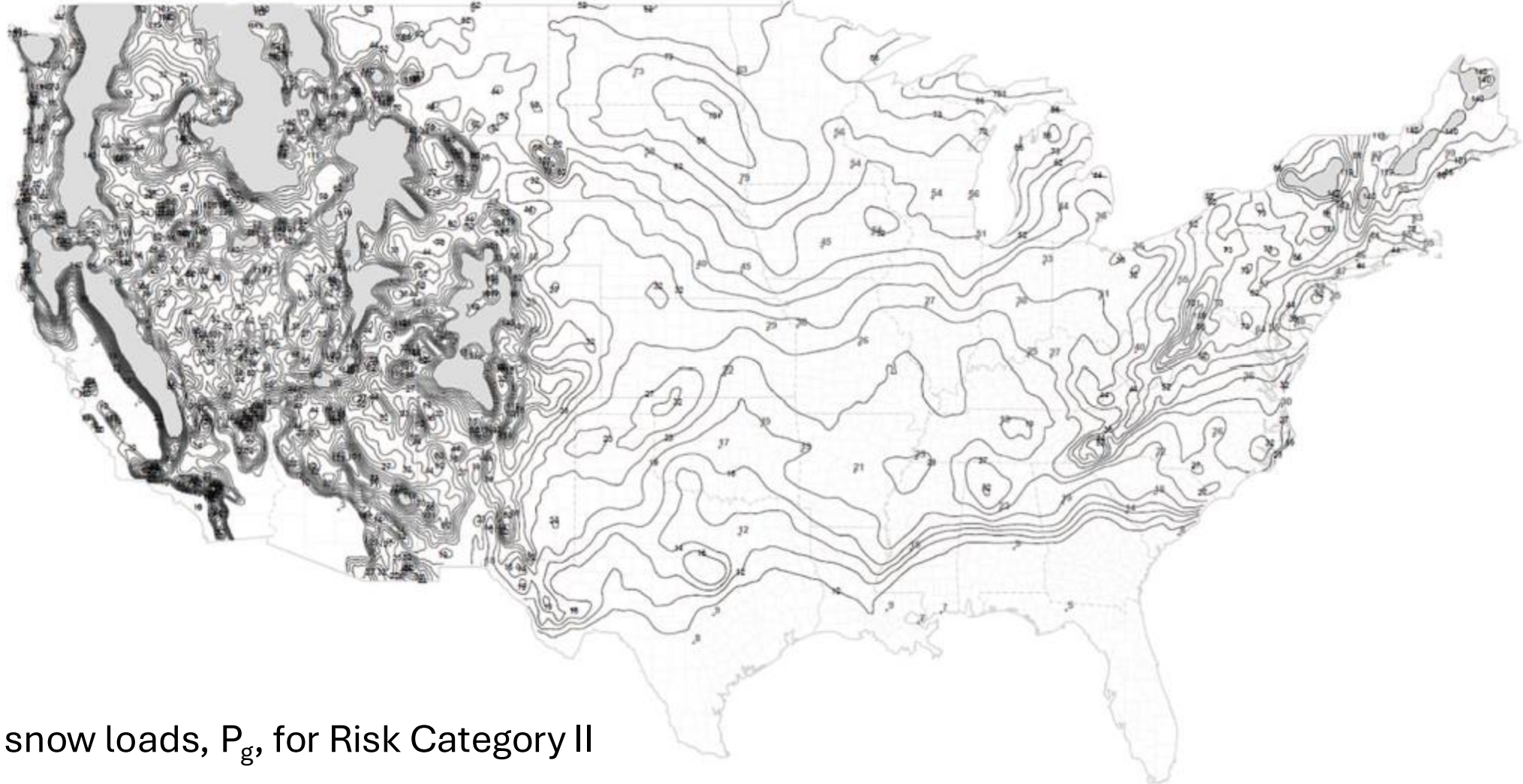
Snow Load Combinations: ASD

$$D+0.7S$$

$$D+0.75L+0.75(0.7S)$$

$$D+0.75L+0.75(0.6(W \text{ or } W_t))+0.75(0.7S)$$

ASCE 7-22 Snow Maps



Ground snow loads, P_g , for Risk Category II

ASCE 7: Snow Hazard Tool Omaha, NE

1 Enter Structure Information

Enter Location *i* ☐ Snap to Address *i*

ADDRESS LAT/LONG FIND ON MAP

Omaha, Nebraska X SEARCH

2 Requested Data

Standard Version *i*
ASCE/SEI 7-22 NEW! ASCE/SEI 41 now available

Risk Category *i* Site Soil Class *i*
II Default

Measurements
☒ Customary ☐ SI

Load Types *Select all*

☐ Wind ☐ Seismic
☐ Ice ☒ Snow
☐ Rain ☐ Flood
☐ Tsunami ☐ Tornado

VIEW RESULTS

ASCE 7-22: Snow Hazard Tool Omaha, NE

Location

Omaha, Nebraska, ,

Elevation

1044 ft with respect to North American Vertical Datum of 1988 (NAVD 88)

Lat:

41.258652

Long:

-95.937195

Standard:

ASCE/SEI 7-22

Risk Category:

II

Soil Class:

Default

Snow

52 lb/ft²

Overlay ☐

DETAILS

FULL REPORT

SUMMARY

ASCE 7-22

$$p_g = 52psf$$
$$p_{g(asd)} = 36.4psf$$

ASCE 7-16

$$p_g = 25psf$$

REPORT SUMMARY	
Site Information	
Address:	Omaha, Nebraska, ,
Elevation:	1044 ft (NAVD 88)
Lat:	41.258652
Long:	-95.937195
Standard:	ASCE/SEI 7-22
Risk Category:	II
Soil Class:	Default
Snow	
Ground Snow Load, p_g	52 lb/ft ²
20-year MRI Value, p_g	15.26 lb/ft ²
Winter Wind Parameter, W_2	0.55
Mapped Elevation	1073.1 ft
Ground Snow Loads for IRC only, $p_{g(asd)}$	36.4 lb/ft ²

REPORT SUMMARY	
Snow	
Ground Snow Load, p_g	25 lb/ft ²
Mapped Elevation	1044.7 ft

Flat Roof Snow, $P_{f(asd)}$

ASCE 7-22 $P_{f(asd)} = 0.7C_eC_tP_{g(asd)}$

VS

ASCE 7-16 $P_f = 0.7C_eC_tI_sP_g$

I_s : Snow Importance Factor, Removed

C_e : Exposure Factor, No change

C_t : Thermal Factor...

Exposure Factor, C_e

Based on Terrain Category and Exposure:

- Minimum of 0.7 for a fully exposed Alaska home, in which no trees exist within 2-mile radius of the site
- Maximum of 1.2 for sheltered home in a wooded area
- Value of 1.0 for category B & C with partially exposed roof

Table 7.3-1. Exposure Factor, C_e .

Surface Roughness Category	Exposure of Roof ^a		
	Fully Exposed ^b	Partially Exposed	Sheltered
B (see Section 26.7)	0.9	1.0	1.2
C (see Section 26.7)	0.9	1.0	1.1
D (see Section 26.7)	0.8	0.9	1.0
Above the tree line in windswept mountainous areas	0.7	0.8	N/A
In Alaska, in areas where trees do not exist within a 2 mi (3 km) radius of the site	0.7	0.8	N/A

The terrain category and roof exposure condition chosen shall be representative of the anticipated conditions during the life of the structure. An exposure factor shall be determined for each roof of a structure.

Thermal Factor, (Ct)

Table 7.3-2. Thermal Factor, C_t .

Thermal condition ^a	C_t
All structures except as indicated as follows	See Table 7.3-3
Unheated structures, open-air structures, structures kept just above freezing [40 to 50 °F (4 to 10 °C)], and other structures with cold, ventilated roofs meeting the minimum requirements of the applicable energy code	1.2
Freezer building	1.3
Continuously heated greenhouses ^b with a roof having a thermal resistance (R-value) less than 2.0 h·ft ² ·°F/Btu (0.4 m ² ·K/W) or a thermal transmittance (U-factor) greater than 0.5 Btu/h·ft ² ·°F (2.5 W/m ² ·K)	0.85

ASCE 7-22

Table 7.3-2 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 × ft ² /Btu (4.4 K × m ² /W)	1.1
Unheated and open air structures	1.2
Freezer building	1.3
Continuously heated greenhouses ^b with a roof having a thermal resistance (R-value) less than 2.0°F × h × ft ² /Btu (0.4 K × m ² /W)	0.85

ASCE 7-16

Thermal Factor for Unventilated Roofs

- Thermal Resistance: R -value
- Ground Snow: p_g

Table 7.3-3. Thermal Factor, C_t , for Heated Structures with Unventilated Roofs.^a

R_{roof} (h·ft ² ·°F/Btu [m ² ·K/W])	U_{roof} (Btu/h·ft ² ·°F [W/m ² ·K])	P_g (psf [kPa])						
		≤10 [0.48]	20 [0.96]	30 [1.44]	40 [1.92]	50 [2.40]	60 [2.88]	≥70 [3.36]
≤20 [3.52]	≥0.050 [0.284]	1.20	1.11	1.05	1.01	1.00	1.00	1.00
30 [5.28]	0.033 [0.189]	1.20	1.17	1.14	1.13	1.12	1.11	1.10
40 [7.04]	0.025 [0.142]	1.20	1.19	1.17	1.16	1.16	1.15	1.15
50 [8.80] ^b	0.020 [0.114] ^b	1.20	1.20	1.19	1.19	1.19	1.18	1.18

^a For values of P_g and R_{roof} that fall between those shown in the table, linear interpolation may be used to determine the value of C_t .

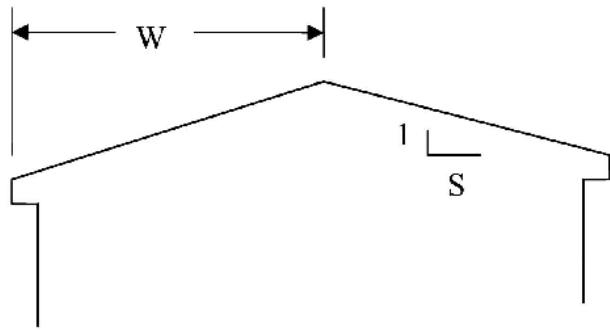
^b For values of $R_{\text{roof}} > 50$ h·ft²·°F/Btu (8.80 m²·K/W) or $U_{\text{roof}} < 0.020$ Btu/h·ft²·°F (0.114 W/m²·K), C_t should be taken as equal to 1.2.

Unbalanced Snow and Snow Drift

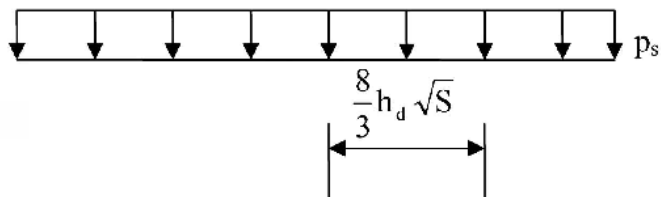
New Drift Height Equation



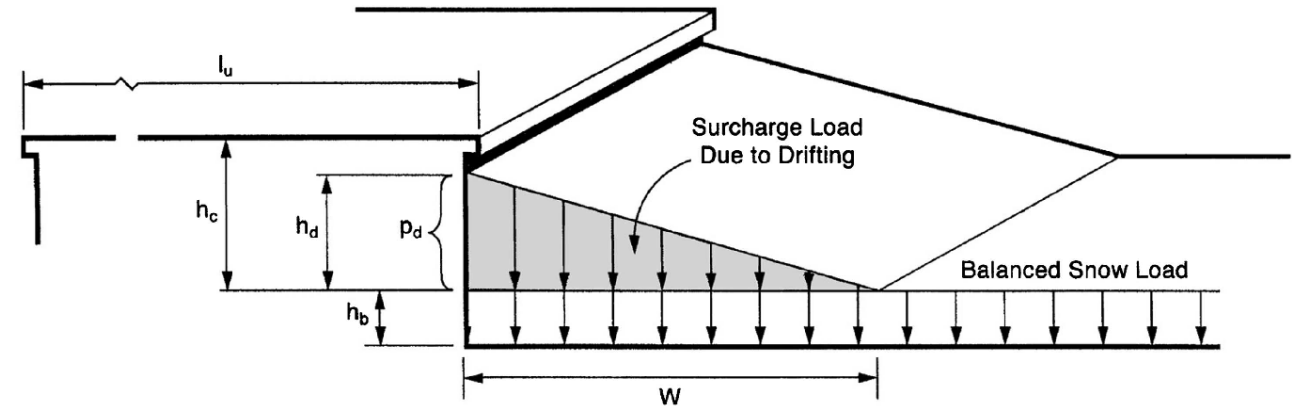
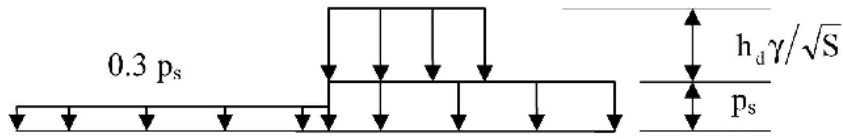
$$h_d = 1.5 \sqrt{\frac{P_{g(asd)}^{0.74} l_u^{0.70} W_2^{1.7}}{\gamma}}$$



Balanced



Unbalanced
Other



Winter Wind Parameter (W_2)

W_2 = Percent of time wind speed is above 10 mph (4.6 m/s) during winter (October through April)

REPORT SUMMARY

Site Information

Address:	Omaha, Nebraska, ,
Elevation:	1044 ft (NAVD 88)
Lat:	41.258652
Long:	-95.937195
Standard:	ASCE/SEI 7-22
Risk Category:	II
Soil Class:	Default

Snow

Ground Snow Load, p_g	52 lb/ft ²
20-year MRI Value, p_g	15.26 lb/ft ²
Winter Wind Parameter, W_2	0.55
Mapped Elevation	1073.1 ft
Ground Snow Loads for IRC only, $p_{g(asd)}$	36.4 lb/ft ²

Winter Wind Parameter (W_2)

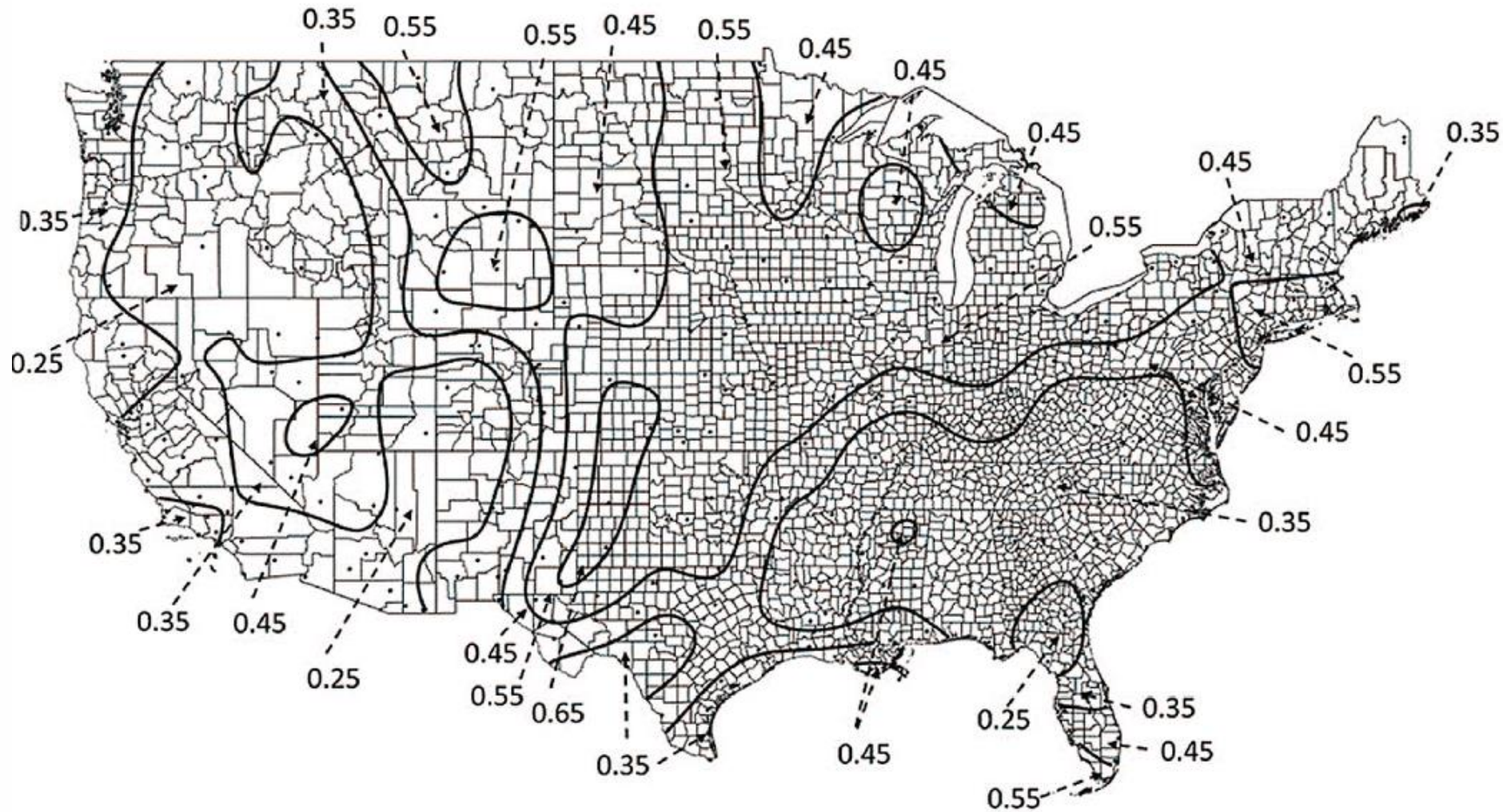


Figure 7.6-1. Map of winter wind parameter, W_2 .

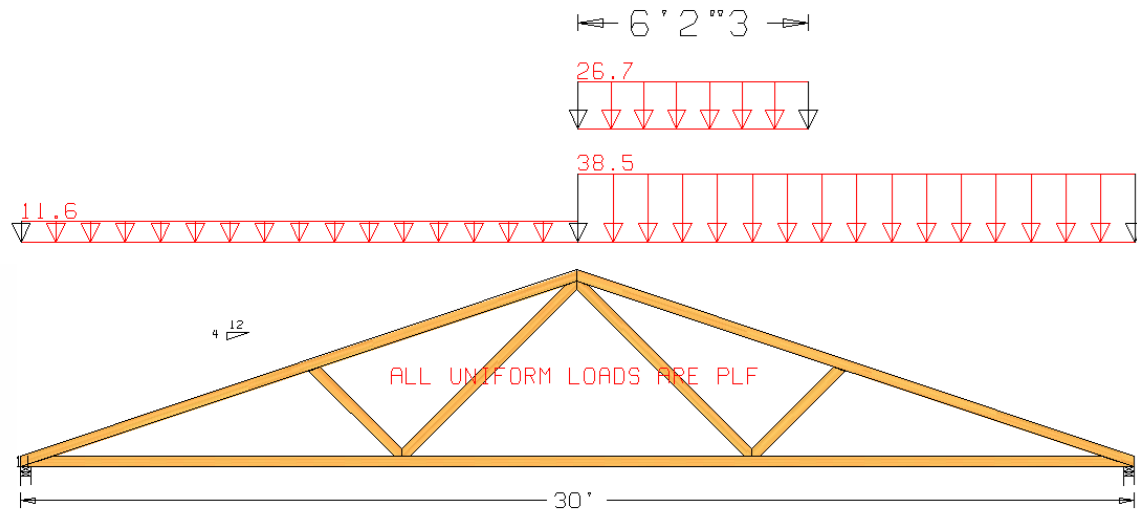
Note: The winter wind parameter W_2 is available at <https://asce7hazardtool.on-line>.

Snow Example

ASCE 7-16

$$P_g = 25 \text{ psf}, C_e = 1.0, C_t = 1.1, C_s = 1.0, I_s = 1.0$$

$$P_f = 0.7 * 1.0 * 1.1 * 1.0 * 25 = 19.25 \text{ psf}$$

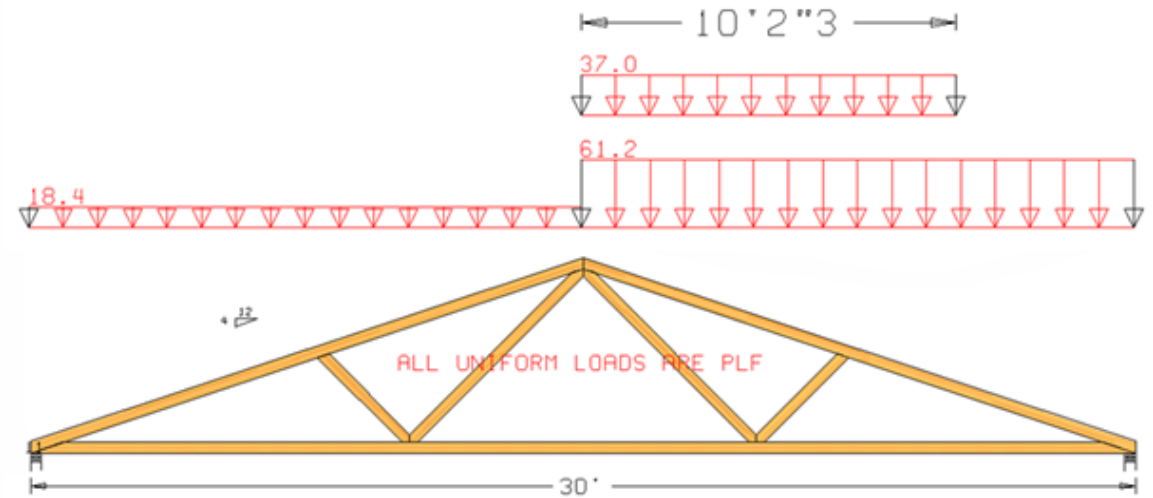


ASCE 7-22

$$P_g = 52 \text{ psf}, C_e = 1.0, C_t = 1.2, C_s = 1.0, W_2 = 0.55$$

$$P_{g(amd)} = 0.7 * 52 = 36.4 \text{ psf}$$

$$P_{f(amd)} = 0.7 * 1.0 * 1.2 * 36.4 = 30.58 \text{ psf}$$



ANSI/TPI 1-2022

Chapter 1

1. **1.6 DEFINITIONS** “Extended-Chord-bearing Truss”

Chapter 2

2. **2.3.5.5 Information of Truss Design Drawings** - TDD must state that permanent lateral and diagonal braces must be installed as

Chapter 3

3. **3.4.8 Lumber Wane** - alert inspectors that lumber wane could be prohibited

4. **3.7.2.1 Plate Placement** - clarification only.

5. **3.7.2.2 Alternative Positioning Procedure** - Extended-Chord-bearing Joints

6. **3.7.3 Plate Rotation** - Extended-Chord-bearing Joints

7. **3.8 Repressing** - clarify that repressing plates to attain full connector plate grip strength only applies to plates that were not fully embedded during manufacture.

Chapter 4

8. **4.3.4 Steel Thickness** – 0.0003 in.

9. **4.6.2 Requirements** - The requirements to measure hardness, width and length, and tooth bending ability were removed.

10. **4.7 Tolerances** - Tolerances for Metal Connector Plate inspections were revised to coordinate with the changes in Section 4.6.2.

Chapter 5

11. **5.1.2.5 Measuring Devices** – Clarifies that the units in Section 5 are resolution of measurement rather than accuracy of measurement and adds an accuracy requirement for measuring equipment.

12. **5.2.6.7 Structural Composite Lumber** – An additional provision was added to this section which states that connector plate lateral design values shall be limited to the shear design value for the SCL matching the application.

13. **5.3.2.1 Test Specimen Selection** – There is now a limit ($\leq 5\%$) on the allowed thickness over the minimum thickness for tested Metal Connector Plates.

Chapter 6

14. **6.1.1.3 Joint Model** provide guidance and limitations on modeling translational and rotational stiffness for Truss Joints.

15. **6.2.2.4.2 Allowable Out-of-Plane Load Resistance for a Pair of Metal Connector Plates** – connector plates loaded perpendicular to the plane of a Truss.

16. **6.2.2.5 Person Loading** – A new 300-pound point load to be checked at each chord mid-point concurrently with just dead load using a load duration factor of 1.6 or less.

17. **6.4.2.3 Alternative Repetitive System Factors** limits the use of system behavior adjustment factors

18. **6.4-2 (Table) Bending Capacity Modification Factors** – The K_m factor is no longer restricted to compression members only.

19. **6.4.12 Horizontal Shear Volume Factor (C_v)** – A new adjustment factor (C_v) has been added for checking wood shear at Extended-Chord-bearing Joints.

20. **6.5 Corrosive Conditions** – provides guidance for specific corrosive conditions.

Chapter 7

21. **7.2.3 Point of Lateral Restraint** – This new section defines the requirement of a lateral restraint

22. **7.3.2.1 Web Reinforcement to Increase Buckling Capacity** – provides provisions for designing reinforced compression Webs (e.g., T-Braced-, L-braced-, I-braced-, and Scab-reinforced-Webs).

23. **7.3.6 – L'/d Ratios for Compression & Tension Members** - designing compression members that exceed the prescriptive L'/d ratios.

24. **7.3.8 Rolling Shear** – This new section includes provisions for checking rolling shear.

25. **7.3.9.3 Bearing Plate Increase Factor** – An exception has been added for using the bearing plate increase factor.

26. **7.3.12 – Bearing Reinforcement** – Provisions have been added for designing bearing reinforcement (bearing blocks).

27. **7.3.13 Extended-Chord Bearing Trusses** – maximum reactions for Extended-Chord-bearing Trusses (e.g., Top Chord bearing) beyond the prescriptive table.

28. **7.5.2.4 Load Not Continuous Across All Plies** – This new section provides guidance for determining load distribution to the individual plies of a multi-ply girder truss loaded from one face and both faces.

29. **7.5.3.3 Effective Depth of Chord Member** – New design method

30. **7.5.3.7 Additional Repetitive Increase** – Additional repetitive member factors for bending stress have been added for multiply Trusses.

31. **Table 7.6-1 Deflection Limits for Trusses** – A new deflection limit was added to Table 7.6-1 for exposed vertical Webs and integral parapets.

32. **7.6.2.3 Deflection Calculation for Parallel Chord Trusses** – Trusses was revised to include the deflection that occurs at Extended-Chord-bearing Joints.

Chapter 8

33. **8.3.2.3 Additional Consideration for Extended-Chord-Bearing Joints** – Lateral resistance values for connector plates at Extended-Chord-bearing Joints are reduced by 20%.

34. **8.6 Combined Shear and Tension** – This section has been modified to address mid-panel splices cut at an angle.

ANSI/TPI 1-2022 Plating

- 4.3.4 Steel Thickness – 0.0003 in.
- 6.4.12 Horizontal Shear Volume Factor (C_v) – A new adjustment factor (C_v) has been added for checking wood shear at Extended-Chord-Bearing Joints
- 7.3.8 Rolling Shear – This new section includes provisions for checking rolling shear
- 7.5.3.3 Effective Depth of Chord Member – New design method

Plate Thickness:

- Decrease in plate thickness

Rolling Shear:

- NDS address shear parallel to grain
- TPI addresses shear stress perpendicular to grain
- Created a Horizontal Shear Volume Factor C_v
- Mostly top chord bearings

Effective Depth:

- NDS address tension parallel to grain
- TPI addresses tension perpendicular to grain

ANSI/TPI 1-2022 Web Reinforcement

7.3.2.1 Web Member Reinforcement to Increase Buckling Capacity:

- Applies to both webs/studs, with or without lateral loads
- Changes in analysis
 - Effective moment of inertia
 - Effective radius of gyration
 - Effective dimensions
 - Moment due to eccentricity
- New reinforcement types added

7.3.6 L'/d Ratios for Compression & Tension Members:

- P-Delta: Method for calculating initial deformation of low compression webs

ANSI/TPI 1-2022 Web Reinforcement

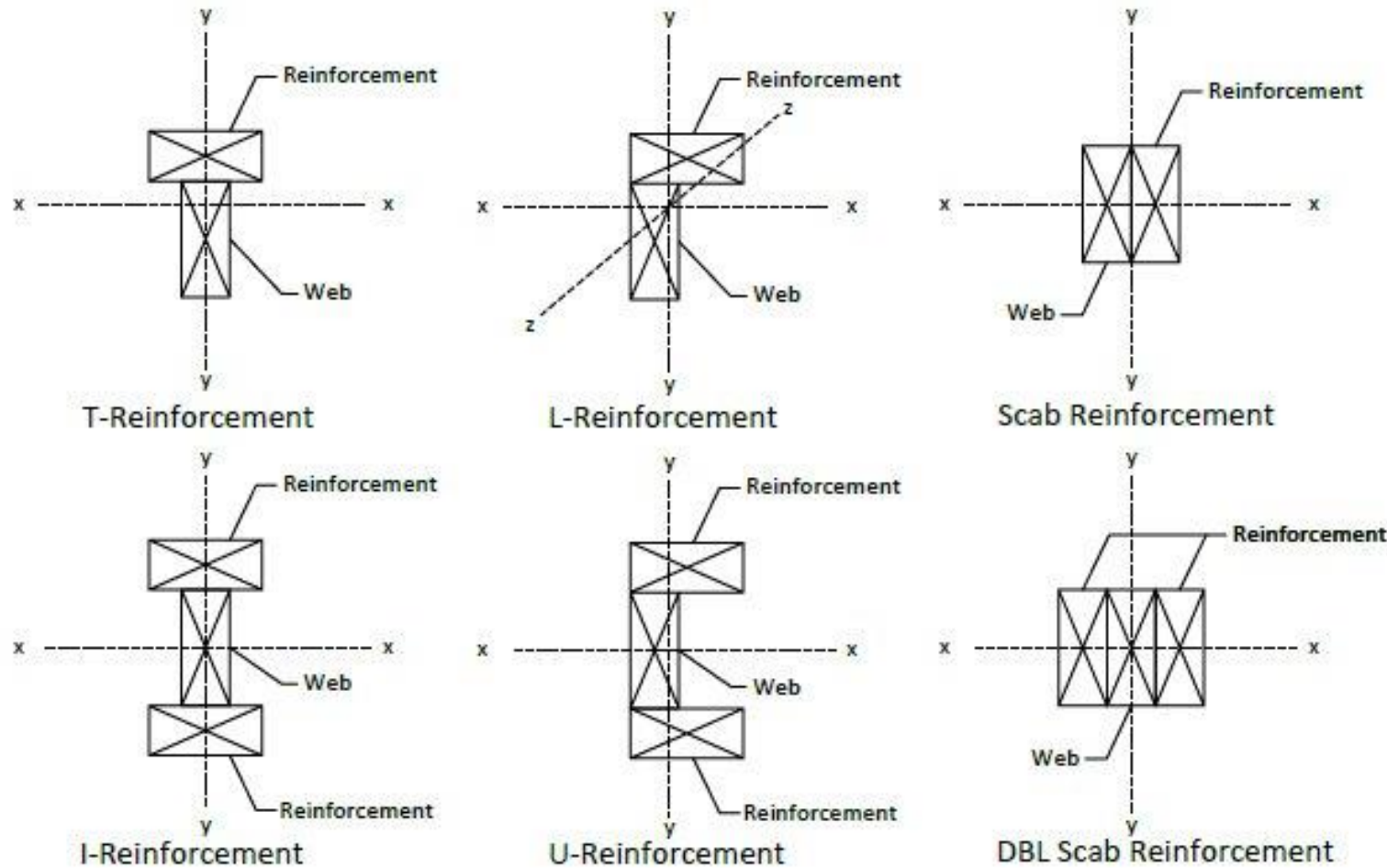


Figure 7.3-1 Web Reinforcement Types

Old Reinforcement:

- T (Narrow or Wide Face)
- L
- Scab

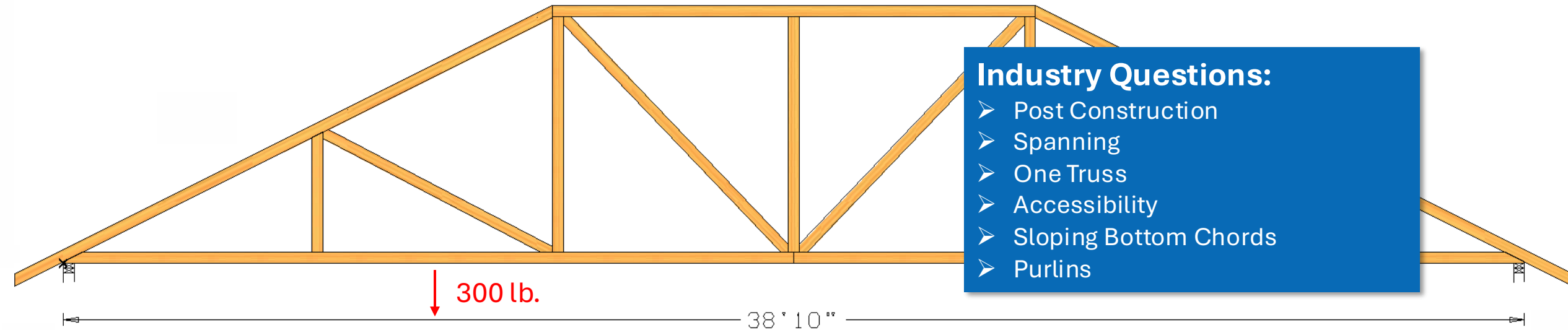
New Reinforcement:

- I or (2) T-Narrow
- U or (2) L
- Double Scab

ANSI/TPI 1-2022 Person Loading

6.2.2.5 Person Loading:

In addition to any load cases required for the applicable end use, each roof Truss spanning 18 feet or more shall be designed for a single concentrated load at the mid-point of any Chord panel that is not sheathed with structural wood sheathing. This concentrated load shall be 300 lbs. and shall be applied concurrently with dead load. It shall not be applied concurrently with any other load. The load duration factor for this load case shall be 1.6 or less.



ANSI/TPI 1-2022 Person Loading



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Issued February 6th, 2026
Updated April 24th, 2026

TPI Technical Advisory Committee (TAC)
Technical Interpretation
ANSI/TPI 1-2022 – Section 6.2.2.5 Person Loading
(Updated 4/24/2026)

Purpose

The purpose of this Technical Interpretation is to clarify the application of the 300 lb concentrated person load specified in Section 6.2.2.5 of ANSI/TPI 1-2022, specifically with respect to how that load may be applied to roof trusses when trusses are spaced 30 inches on center or less.

Applicable Standard Language

Section 6.2.2.5 of ANSI/TPI 1-2022 states:

In addition to any load cases required for the applicable end use, each roof Truss spanning 18 feet (549 cm) or more shall be designed for a single concentrated load at the mid-point of any Chord panel that is not sheathed with structural wood sheathing. This concentrated load shall be 300 lbs. (1335 N) and shall be applied concurrently with dead load. It shall not be applied concurrently with any other load. The load duration factor for this load case shall be 1.6 or less.

Technical Interpretation

It is the interpretation of the Truss Plate Institute (TPI) Technical Advisory Committee (TAC) that, for roof trusses spaced 30 inches on center or less, the 300 lb concentrated person load specified in Section 6.2.2.5 may be distributed across two adjacent trusses, such that 150 lb is applied to each of two adjacent trusses. The load shall be applied at the mid-span of the chord panel and concurrently with dead load only.

In addition, the person load is only applicable to chord panels that meet the following criteria, regardless of on center spacing:

Bottom Chord Applicability Criteria

- 1. Accessible Panel Geometry**
The bottom chord panel must be capable of accommodating a rectangular space measuring 42 inches in height by 24 inches in width within the panel.
- 2. Horizontal Bottom Chords Only**
The bottom chord must have a slope less than 2/12.

Top and Bottom Chord Applicability Criterion

- 1. Absence of Sheathing or Wide Spaced Purlins**
The person load is applicable only where there is no structural wood sheathing, or where purlins or bracing members are spaced greater than 24 inches on center.

As used in the provision the word “spanning” is intended to define the distance between bearings. It is not intended to be interpreted as the overall length of the truss.

ANSI/TPI 1-2022 Person Loading

300 lb. Load

Truss spaced > 30" O.C.

300 lb. Load over 2 trusses (150 lb. each)

Truss spaced $\leq$ 30" O.C.

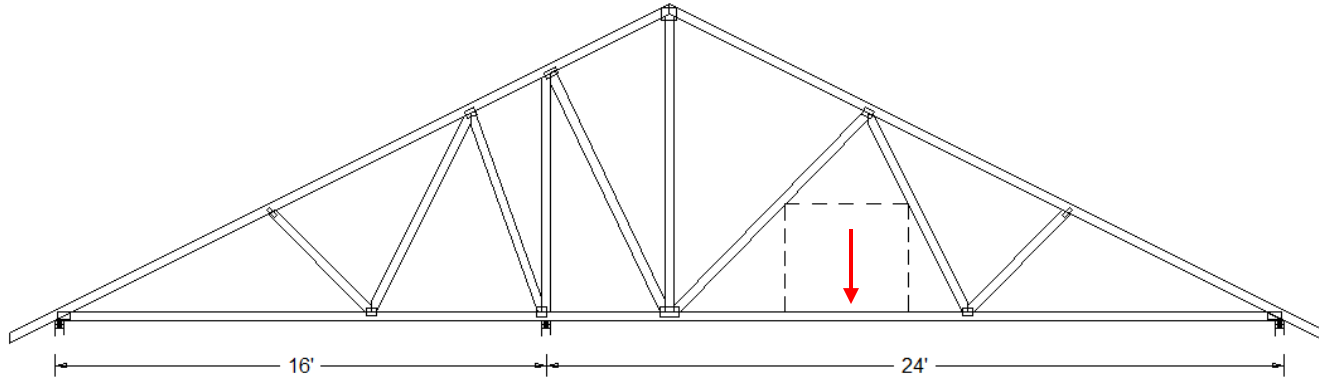
Common Requirements

- Load Applied at chord mid-panel
- Roof truss span is 18 ft or greater
- Applies to top or bottom chord panel
- Apply to BC if web configuration accommodates a 42" H $\times$ 24" W clear rectangular space within panel
- Load combined with dead load only
- Duration factor ≤ 1.6 Person

Load Not Required If

- TC or BC has structural wood sheathing attached
- Purlins are spaced 24" O.C. or less
- Span between adjacent bearings is less than 18 ft
- BC slope is > 2:12

ANSI/TPI 1-2022 Person Loading

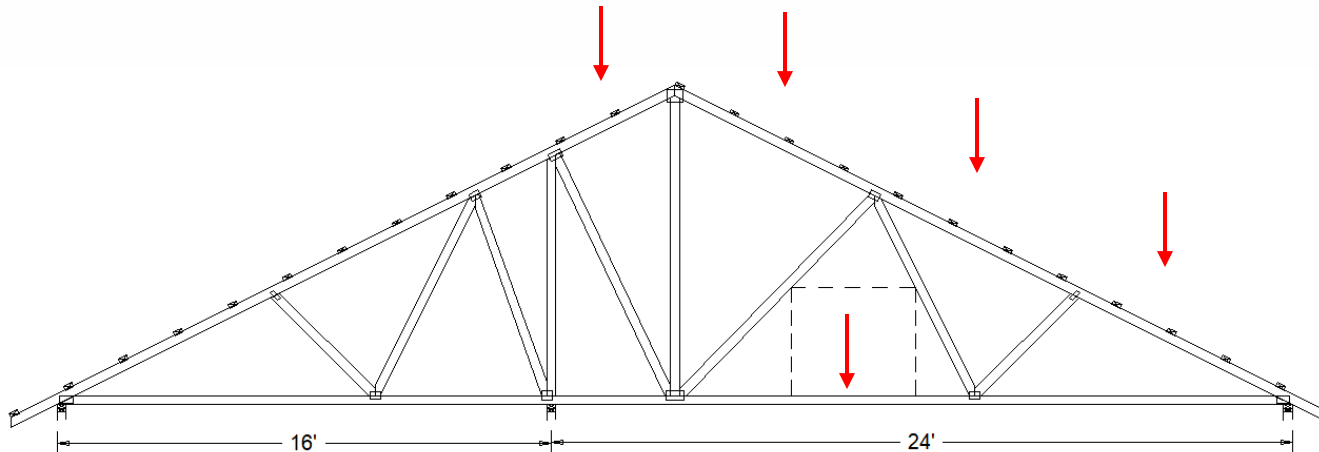


Top chord

Purlins < 24" oc or structural wood sheathing on TC
No person load applied

Bottom chord

Area > 42" high x 24" wide
Person load applied



Top chord

Purlins > 24" oc
Person load applied
No load where span is < 18'

Bottom chord

Area > 42" high x 24" wide
Person load applied

ANSI/TPI 1-2022 Multiple-Ply Girder

Multiple-Ply Girder Design

Section 7.5.2.4

% of face-mounted load carried by each ply (Face-mounted hanger on 1st ply)						
2x_plies:	Ply 1	Ply 2	Ply 3	Ply 4	Ply 5	Ply 6
2-ply girder	50	50				
3-ply girder	37	32	31			
4-ply girder	29	25	24	22		
5-ply girder	28	19	18	18	17	
6-ply girder	25	16	15	15	15	14

ANSI/TPI 1-2022 Standard Responsibilities

Chapter 2 of TPI 1

Standard Responsibilities in the Design and Application of Metal-Plate-Connected Wood Trusses

Key Parties

- Owner
- Building Designer
- Truss Manufacturer
- Truss Designer
- Registered Design Professional (as required)
- Contractor / Installer

Key Topics

- Design responsibilities
- Construction documents
- Truss submittals
- Truss Design Drawings
- Restraint and bracing
- Long-span truss requirements

ANSI/TPI 1-2022 Long Span Truss Requirements

TPI - When a Truss Clear Span is greater than 60 ft:

- Registered Design Professional-designed Temporary Installation Restraint and Bracing
- Registered Design Professional-designed Permanent Individual Truss Member Restraint and Permanent Individual Truss Member Diagonal Bracing
- Special Inspection

IBC

The owner or owner's authorized agent shall contract with a qualified registered design professional for the design of the temporary installation restraint/bracing and permanent individual truss member restraint/bracing for all trusses with clear spans of 60' or greater

BCSI

60 ft is the threshold where prescriptive BCSI bracing ends and engineered bracing begins.

Review

Key Takeaways:

- IBC and FBC are on a 3-year code cycle
- How important standards are to building codes
- Tornadoes: Tornado Prone Region, Effective Plan Area, and Risk CAT III and IV
- ASCE 7-22: Snow Loads
 - Snow Load Maps for each Risk Category
 - Ultimate Ground Snow vs. Ground Snow ASD
 - Winter Wind Parameter (W_2)
 - Thermal Factor (C_t)
- TPI 1-2022
 - Plating changes
 - Web reinforcement changes
 - New 300 lb. Person Load
 - Multiple-Ply Girder Load Transfer Updated
 - Long Span Truss Requirements



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Q&A

Education Session
Evaluation

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