HCAi Department of Health Care Access and Information
2020 West El Camino Avenue, Suite 800
Sacramento, CA 95833
hcai.ca.gov

Hospital Building Safety Board
Structural and Nonstructural Regulations Committee

AGENDA
October 7, 2026
10:00 a.m. – 4:00 p.m.

The Committee may not discuss or act on any matter raised during the public comment section that is not included on this agenda, except to place the matter on a future meeting agenda. (Government Code §§ 11125, 11125.7, subd. (a).)

Locations:
2020 West El Camino Ave, Conference Room 930, Sacramento, CA 95833
355 South Grand Avenue, Conference Room 1901, Los Angeles, CA 90071
Teams Meeting Access; Meeting ID: 290 814 239 069 88; Passcode: NP7MF3yw
Call in: (916) 535-0978; Phone Conference ID: 449 632 959#

Item #1 Call to Order and Welcome

Facilitator: Jim Malley, SE, Senior Principal, Degenkolb Engineers; Committee Chair (or designee)

Item #2 Roll Call and Meeting Advisories/Expectations

Facilitator: Veronica Yuke, HCAI; HBSB Executive Director (or designee)

Item #3 Review and approve the draft July 29, 2026, meeting report/minutes

- Discussion and public input

Facilitator: Jim Malley (or designee)

Item #4 Proposed amendments to the 2028 California Building Standards Code Title 24, Part 2

A. Chapter 16/16A: Modifications to ASCE 7

1) ASCE 7 Chapter 12, Table 12.2-1. Permit the following structural systems currently not permitted by OSHPD:

a. Special steel plate shear wall

b. Steel special truss moment frames

Item #4: Proposed amendments to the 2028 California Building Standards Code Title 24, Part 2

Hospital Building Safety Board Structural and Nonstructural Regulations Committee

10/07/2026

A. Chapter 16/16A: Modifications to ASCE 7

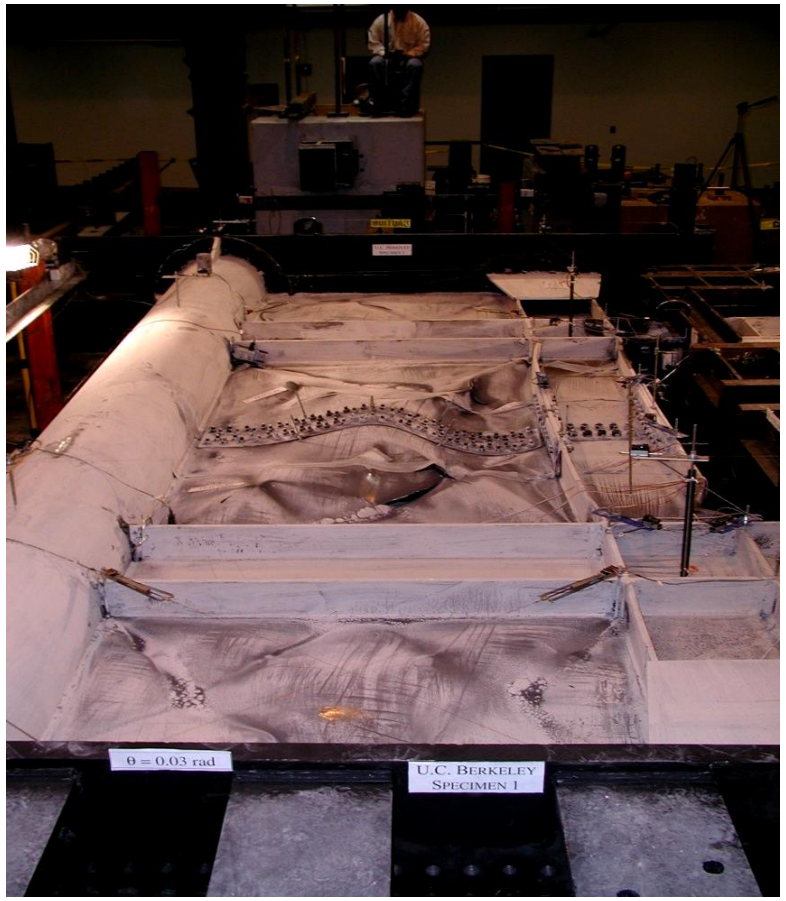
1) ASCE 7 Chapter 12, Table 12.2-1. Permit the following structural systems currently not permitted by OSHPD:

   a. Special steel plate shear wall
   b. Steel special truss moment frames

A. Chapter 16/16A: Modifications to ASCE 7

1a) Special steel plate shear wall

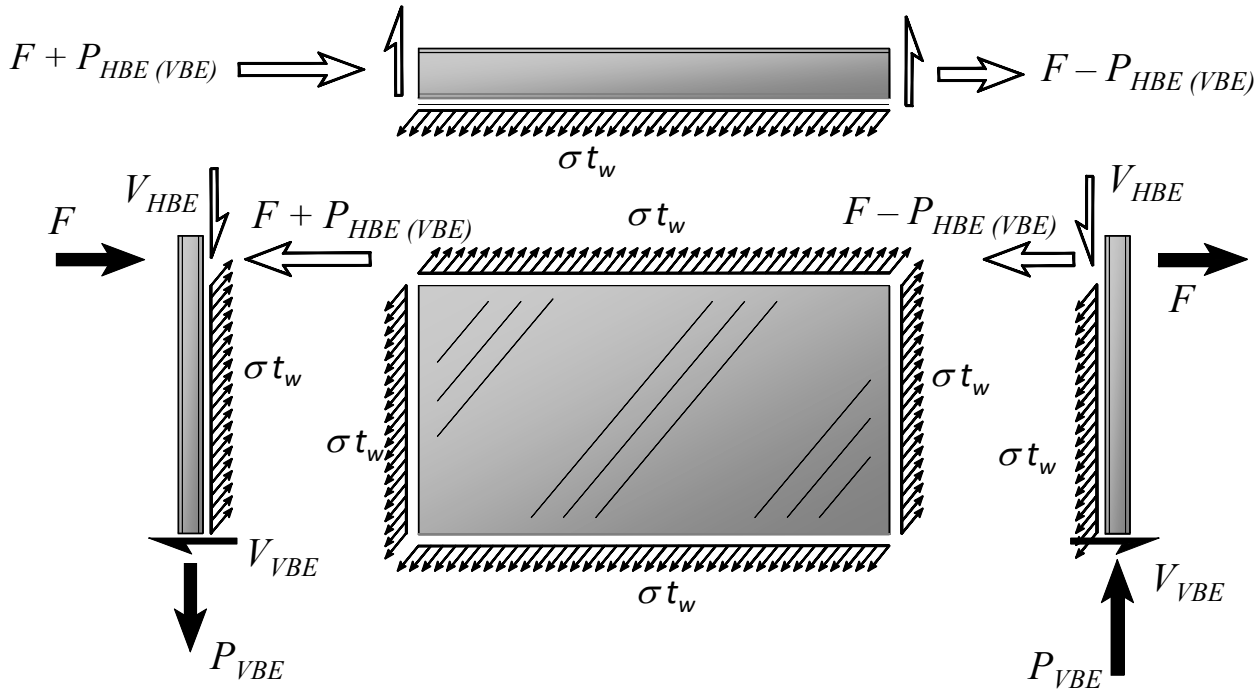
- First adopted in 2005 edition of AISC 341
- Based on research in Canada and the U.S.
- Design approach similar to plate girders – thin plate tension field theory
- Previous concerns expressed by OSHPD related to post event buckling of panels requiring evacuation
  - No loss in lateral strength results from until significant tearing of the plate occurs due to ability of plate to readjust the load path



A. Chapter 16/16A: Modifications to ASCE 7

1a) Special steel plate shear wall

$$V_n = 0.42 F_y t_w L_{cf} \sin 2\alpha$$

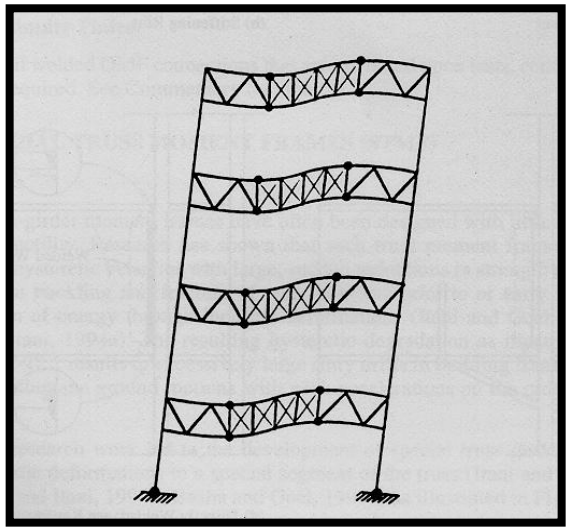


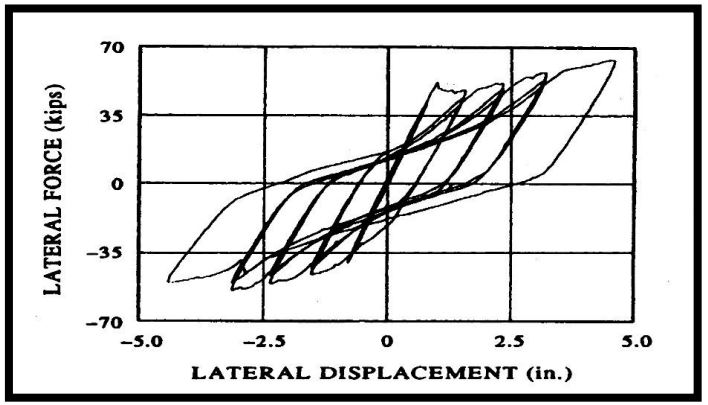
HCAi Department of Health Care Access and Information

A. Chapter 16/16A: Modifications to ASCE 7

1b) Steel special truss moment frames

- First adopted in 2002 edition of AISC 341
- Based on research by Goel and recent work by Chao
- Concept similar to EBF's
- Ductile Special Segment acts like link beam
- Remainder of truss remains elastic
- Both cross-braced and Vierendeel configurations
- Span Limited to 65 feet/Depth to 6 feet
- Previous OSHPD concerns related to post event buckling of special segment diagonals requiring evacuation
  - Similar to SPSW no loss of strength due to buckling





A. Chapter 16/16A: Modifications to ASCE 7

1) ASCE 7 Chapter 12, Table 12.2-1. Permit the following structural systems currently not permitted by OSHPD:

1617A.1.4 ASCE 7, Table 12.2-1. *Modify ASCE 7, Table 12.2-1 as follows:*

…

B. BUILDING FRAME SYSTEMS

3. Steel ordinary concentrically braced frames— *Not permitted by OSHPD.*

9. Intermediate Precast Shear Walls—*Not permitted by OSHPD.*

25. Light-framed walls with shear panels of all other materials—*Not permitted by OSHPD and DSA-SS.*

~~27. Special steel plate shear wall—*Not permitted by OSHPD.*~~

C. MOMENT-RESISTING FRAME SYSTEMS

2. ~~Steel special truss moment frames—*Not permitted by OSHPD.*~~

3. …

Item #4 Continued

2) ASCE 7 Chapter 12. Drift scaling required when equation 12.8-7 is triggered only for near fault sites in site Class CD and better soils.

A. Chapter 16/16A: Modifications to ASCE 7

2) ASCE 7 Chapter 12. Drift scaling required when equation 12.8-7 is triggered only for near fault sites in site Class CD and better soils.

1617A.1.11a ASCE 7, Section 12.8.6.1 [OSHPD 1 & 4] *Replace ASCE 7, Section 12.8.6.1, by the following:*

EXCEPTION: Equation (12.8-6) need not be considered for computing drift. *Equation (12.8-7) need not be considered for computing drift for Site Classes D, DE and E sites or where the site is not classified as near fault in accordance with Section 11.4.1.*

A. Chapter 16/16A: Modifications to ASCE 7

2) ASCE 7 Chapter 12. Drift scaling required when equation 12.8-7 is triggered only for near fault sites in site Class CD and better soils.

1617A.1.11b ASCE 7, Section 12.9.1.4.2 [OSHPD 1 & 4] *Modify ASCE 7, Section 12.9.1.4.2, by adding the following exception to the end of that section as follows:*

EXCEPTION: This requirement need not be considered for Site Classes D, DE and E sites or where the site is not classified as near fault in accordance with Section 11.4.1.

A. Chapter 16/16A: Modifications to ASCE 7

2) ASCE 7 Chapter 12. Drift scaling required when equation 12.8-7 is triggered only for near fault sites in site Class CD and better soils.

1617A.1.11c ASCE 7, Section 12.9.2.5.4 [OSHPD 1 & 4] *Replace ASCE 7, Section 12.9.2.5.4, Exception by the following:*

EXCEPTION: *The factors η_X or η_Y as applicable, are permitted to be taken as 1.0 for the purpose of determining combined displacements where any of the following conditions apply:*

1) *The design base shear in the given direction is not controlled by Equation (12.8-7),*
2) *The Site Class is D, DE, or E, or,*
3) *Where the site is not classified as near-fault in accordance with Section 11.4.1*

Item #4 Continued

3) ASCE 7 Chapter 13, Section 3.3.1 and Table 13.5-1. Permit light frame interior partition walls to be designed in accordance with the requirements in ASCE 7-16. Design seismic ground motion seismic parameters should comply with ASCE 7-22.

A. Chapter 16/16A: Modifications to ASCE 7

3) ASCE 7 Chapter 13, Section 3.3.1 and Table 13.5-1. Permit light frame interior partition walls to be designed in accordance with the requirements in ASCE 7-16. Design seismic ground motion seismic parameters should comply with ASCE 7-22.

1617A.1.18a ASCE 7, Section 3.3.1 [OSHPD 1 & 4] *Modify ASCE 7, Table 13.5-1, Interior nonstructural walls and partitions, as follows:*

Interior partition walls are permitted to be designed in accordance with the requirements in ASCE 7-16, Section 13.3.1 and Table 13.5-1, however the design seismic ground motions shall be in accordance with ASCE 7-22 and this code.

Item #4 Continued

4) ASCE 7 Chapter 13, Section 13.6.7.2; NFPA 13-22, Section 18.5.10. Net Vertical Forces. Amend Section 18.5.10, Net Vertical Forces, by aligning with the provisions of ASCE 7 Chapter 13, Section 13.6.7.2. This amendment ensures consistency with current seismic safety standards.

A. Chapter 16/16A: Modifications to ASCE 7

4) ASCE 7 Chapter 13, Section 13.6.7.2; NFPA 13-25, Section 18.5.10. Net Vertical Forces. Amend Section 18.5.10, Net Vertical Forces, by aligning with the provisions of ASCE 7 Chapter 13, Section 13.6.7.2. This amendment ensures consistency with current seismic safety standards

Excerpt from ASCE 7-22

13.6.7.2 Fire Protection Sprinkler Piping Systems. Fire protection sprinkler piping, pipe hangers, and bracing designed and constructed in accordance with NFPA 13 shall be deemed to meet the force and displacement requirements of this section. Clearances for sprinkler drops and sprigs and other equipment shall conform to 13.2.4.1. The exceptions of Section 13.6.7.3 shall not apply.

A. Chapter 16/16A: Modifications to ASCE 7

4) ASCE 7 Chapter 13, Section 13.6.7.2; NFPA 13-25, Section 18.5.10. Net Vertical Forces. Amend Section 18.5.10, Net Vertical Forces, by aligning with the provisions of ASCE 7 Chapter 13, Section 13.6.7.2. This amendment ensures consistency with current seismic safety standards

Excerpt from NFPA 13 2025

18.5.10 Net Vertical Forces.

Where the C_p exceeds 0.5 and the brace angle is less than 45 degrees from vertical or where the C_p exceeds 1.0 and the brace angle is less than 60 degrees from vertical, the braces shall be arranged to resist the net vertical force produced by the horizontal load.

A. Chapter 16/16A: Modifications to ASCE 7

4) NFPA Section 18.5.12.1

18.5.12.1

The designated angle category for the fastener(s) used in the sway brace installation shall be determined in accordance with **Figure 18.5.12.1**.

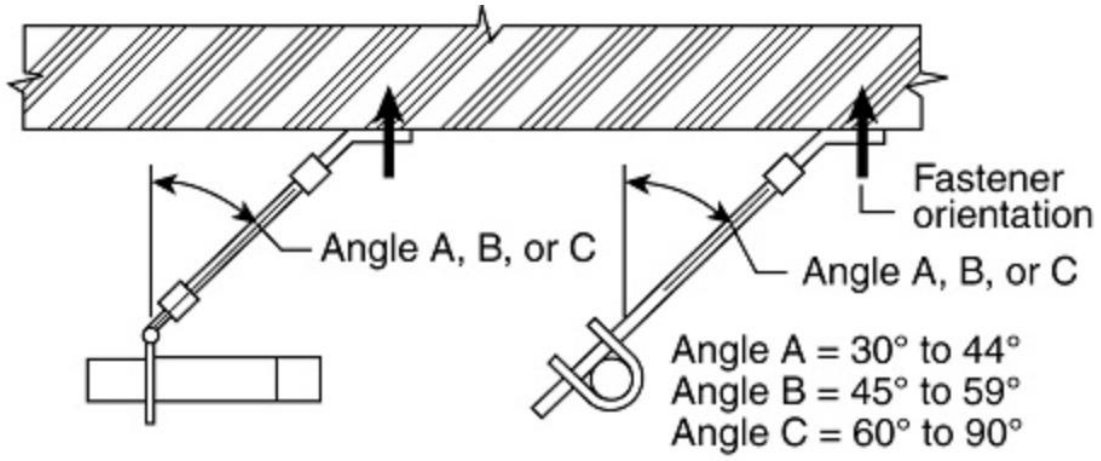
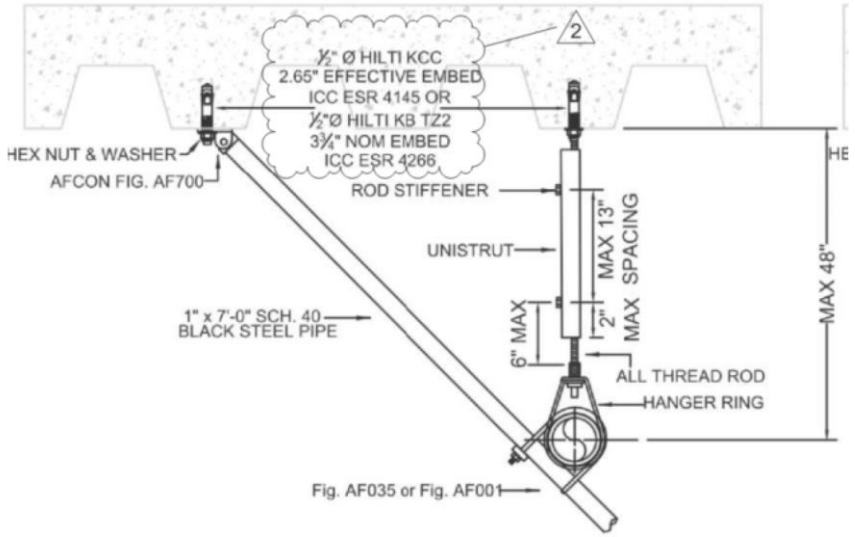


Figure 18.5.12.1 Designation of Angle Category Based on Angle of Sway Brace and Fastener Orientation.

Fire sprinkler pipe bracing

18.5.10 Net Vertical Forces.

Where the C_p exceeds 0.5 and the brace angle is less than 45 degrees from vertical or where the C_p exceeds 1.0 and the brace angle is less than 60 degrees from vertical, the braces shall be arranged to resist the net vertical force produced by the horizontal load.



NFPA – 13 (25) Relevant Sections

- **18.5.9.1 ***
  - The horizontal seismic load for the braces shall be as determined in 18.5.9.6

- **18.5.9.2**
  - The weight of the system being braced (W_p) shall be taken as 1.15 times the weight of the water-filled piping. *(See A.18.5.9.1.)*

- **18.5.9.3**
  - The horizontal force, F_{pw}, acting on the brace shall be taken as $F_{pw} = C_p W_p$, where $C_p = 0.754\ S_{DS}$, and S_{DS} is the short period response parameter.

NFPA – 13 (25) Relevant sections

- **18.5.9.2**
  - The weight of the system being braced (W_p) shall be taken as 1.15 times the weight of the water-filled piping. *(See A.18.5.9.1.)*

- **18.5.9.3**
  - The horizontal force, F_{pw}, acting on the brace shall be taken as $F_{pw} = C_p W_p$, where $C_p = 0.754\ S_{DS}$, and S_{DS} is the short period response parameter.

- **18.5.10 Net Vertical Forces**
  - Where the C_p exceeds 0.5 and the brace angle is less than 45 degrees from vertical or where the C_p exceeds 1.0 and the brace angle is less than 60 degrees from vertical, the braces shall be arranged to resist the net vertical force produced by the horizontal load.

NFPA – 13 (25) – Example Check Net Vertical Forces

- **Case 1**

$C_p > 0.5$ & $\gamma < 45^0$

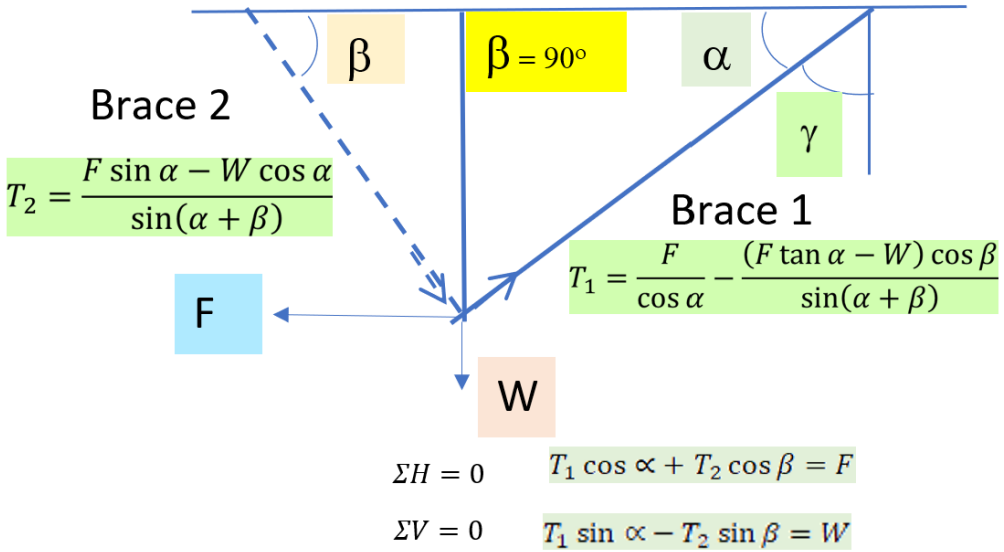
Check

$S_{DS} = 1.2$

$C_p = 0.754\ S_{DS} = 0.9 > 0.5$

$F_{pw} = 0.9\ (1.15)\ W_p = 1.04\ W_p$

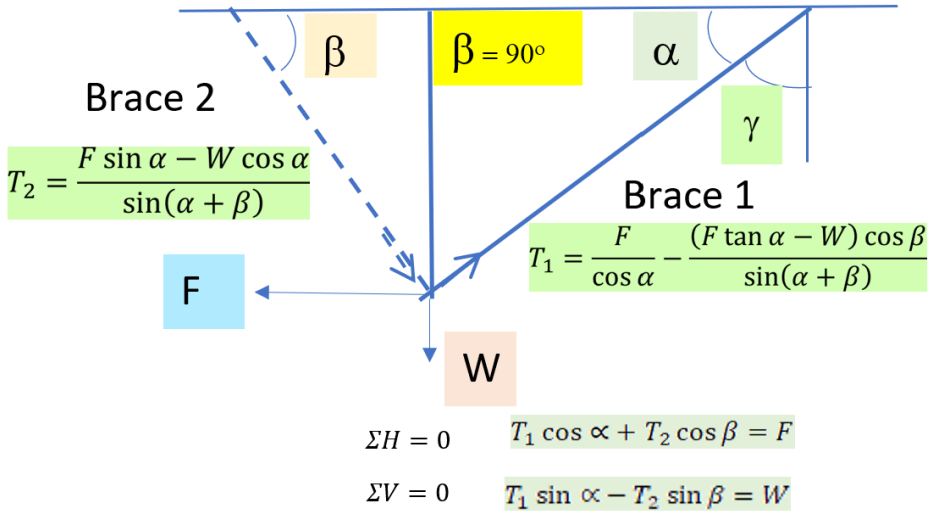
$F_v = (1- 0.2S_{DS})\ W_p = 0.76\ W_p$



NFPA – 13 (25) – Example Check Net Vertical Forces

- **Case 1a**

$C_p > 0.5$ & $\gamma < 45^0$, $\mathbf{S_{DS} = 1.2}$



W =	100
S_{DS} =	1.2
C_p =	0.90
F_{pw} =	1.04

Gamma	Alpha	Beta	W	F	Brace 1 (T_1)	Brace 2 (T_2)
Degrees	Degrees	Degrees	lbs	lbs	lbs	lbs
45	**45**	**90**	76	104	**147.2**	**-28.1**
40	50	90	76	104	161.9	-48.0
35	55	90	76	104	181.4	-72.6
30	60	90	76	104	208.1	-104.2

Brace force sign convention:

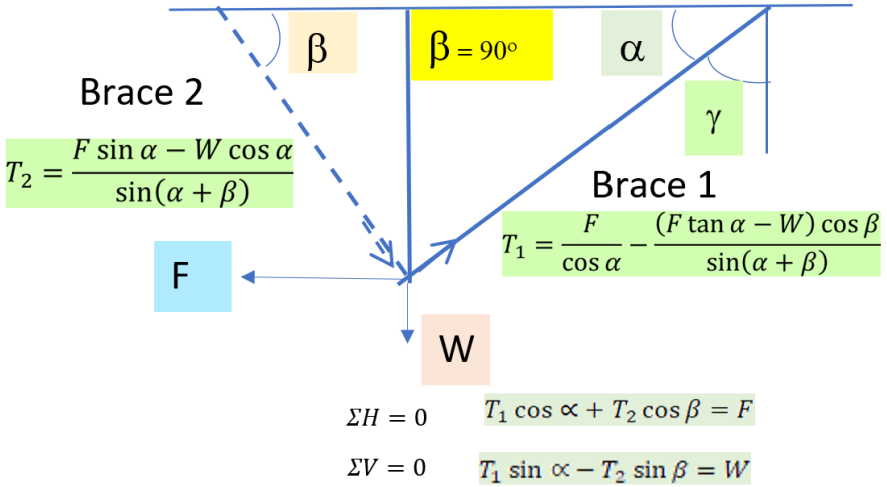
Tension + ve

Compression - ve

NFPA – 13 (25) – Example Check Net Vertical Forces

- **Case 1b**

$C_p > 0.5$ & $\gamma < 45^0$, **S_{DS} = 0.67**



W =	100
S_{DS} =	0.67
C_p =	0.51
F_{pw} =	0.58

Gamma	Alpha	Beta	W	F	Brace 1 (T_1)	Brace 2 (T_2)
Degrees	Degrees	Degrees	lbs	lbs	lbs	lbs
45	**45**	**90**	87	58	**82.2**	**28.5**
40	50	90	87	58	90.4	17.4
35	55	90	87	58	101.3	3.6
30	60	90	87	58	116.2	-14.0

Brace force sign convention:

Tension + ve

Compression - ve

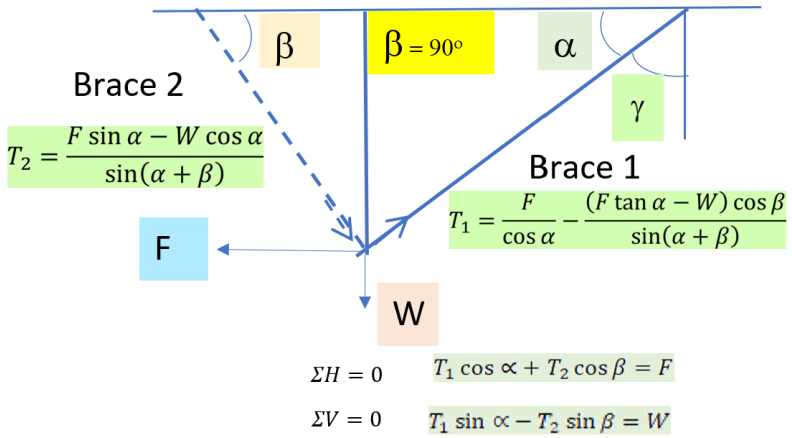
NFPA – 13 (25) – Example Check Net Vertical Forces

- **Case 2**

$C_p > 1.0$ & $\gamma < 60^0$, **$S_{DS} = 1.35$**

W =	100
S_{DS} =	1.35
C_p =	1.02
F_{pw} =	1.17

Gamma	**Alpha**	**Beta**	**W**	**F**	**Brace 1 (T_1)**	**Brace 2 (T_2)**
Degrees	Degrees	Degrees	lbs	lbs	lbs	lbs
60	**30**	**90**	73	117	**135.2**	**5.4**
55	35	90	73	117	142.9	-9.0
50	40	90	73	117	152.8	-25.2
45	45	90	73	117	165.5	-44.1
40	50	90	73	117	182.1	-66.5
35	55	90	73	117	204.1	-94.2
30	60	90	73	117	234.1	-129.8



Brace force sign convention:

Tension + ve

Compression - ve

A. Chapter 16/16A: Modifications to ASCE 7

4) ASCE 7 Chapter 13, Section 13.6.7.2; NFPA 13-25, Section 18.5.10. Net Vertical Forces. Amend Section 18.5.10, Net Vertical Forces, by aligning with the provisions of ASCE 7 Chapter 13, Section 13.6.7.2. This amendment ensures consistency with current seismic safety standards

1617A.1.25a ASCE 7, Section 13.6.7.2 [OSHPD 1 & 4] *Modify NFPA 13-25, Section 18.5.10, Net Vertical Forces, as follows:*

Where the C_p exceeds 0.5 and the brace angle is less than 45 degrees from vertical or where the C_p exceeds 1.0 and the brace angle is less than 60 degrees from vertical, *or where C_p exceeds 0.5 and the brace angle is between 45 degrees and 60 degrees from vertical, results in a net upwards vertical force*, the braces shall be arranged to resist the net vertical force produced by the horizontal load.

Item #4 Continued

5) Distribution Systems. Amend CBC Section ASCE 7-22 Table 13.1-1, pertaining to the OSHPD amendment, by adopting the provisions of ASCE 7. This revision harmonizes requirements with national standards and promoting uniformity in system design.

A. Chapter 16/16A: Modifications to ASCE 7

5) Distribution Systems. Amend CBC Section ASCE 7-22 Table 13.1-1, pertaining to the OSHPD amendment, by adopting the provisions of ASCE 7. This revision harmonizes requirements with national standards and promoting uniformity in system design.

A. Chapter 16/16A: Modifications to ASCE 7

1617A.1.18 ASCE 7, Section 13.1.4 *Replace ASCE 7, Section 13.1.4, with the following:*

…

[OSHPD 1, 2, 4 & 5] Exemptions:

1. *Furniture except storage cabinets as noted in Table 13.5-1.*
2. *Nonstructural components and equipment, that are attached to the building, provided that the component weighs 20 pounds (9 kg) or less or, in the case of a distribution system, 5 pounds per foot (73 N/m) or less and $I_p = 1.0$. Seismic design and seismic details need not be provided.*
3. *Seismic design need not be provided for discrete architectural, mechanical and electrical components and equipment that are attached to the building and anchorage is detailed on the construction documents, provided that the component weighs 400 pounds (181.4 kg) or less, and the center of mass is located 4 feet (1219 mm) or less above the adjacent floor or roof level that directly support the component and flexible connections are provided between the component and associated ductwork, piping and conduit where required.*

Item #4 Continued

6) Requirement for peer review/witness when wind tunnel tests in accordance with ASCE 7 Chapter 31 and ASCE 49 are used in lieu of ASCE 7 wind design loads.

A. Chapter 16/16A: Modifications to ASCE 7

6) Requirement for peer review/witness when wind tunnel tests in accordance with ASCE 7 Chapter 31 and ASCE 49 are used in lieu of ASCE 7 wind design loads.

SECTION 1617A—MODIFICATIONS TO ASCE 7

1617A.1 General. *The text of ASCE 7 shall be modified as indicated in Sections 1617A.1.1 through 1617A.1.41.*

1617A.1.1 ASCE 7, Section 1.3. *Modify ASCE 7, Section 1.3 by adding Section 1.3.8 as follows:*

1.3.8 Structural design criteria. *Where design is based on ASCE 7, Chapters 16, 17, 18 or 31, the seismic ground motion, wind tunnel test-based design recommendations, analysis and design methods, material assumptions, testing requirements and acceptance criteria shall be submitted to the enforcement agency as an alternative system.*

[DSA-SS] *Peer review requirements in Section 322 of the California Existing Building Code shall apply to design reviews required by ASCE 7, Chapters 17, 18, 31 and ASCE 49.*

[OSHPD 1 & 4] *Peer review requirements in Section 1617A.1.41 of this code shall apply to design reviews required by ASCE 7, Chapters 17 and 18.*

A. Chapter 16/16A: Modifications to ASCE 7

6) Requirement for peer review/witness when wind tunnel tests in accordance with ASCE 7 Chapter 31 and ASCE 49 are used in lieu of ASCE 7 wind design loads.

1617A.1.1 ASCE 7, Section 1.3.

Modify ASCE 7, Section 1.3 by adding Section 1.3.8 as follows:

1.3.8 Structural design criteria. *Where design is based on ASCE 7, Chapters 16, 17, 18 or 31 the seismic ground motion, wind tunnel test-based design recommendations, analysis and design methods, material assumptions, testing requirements and acceptance criteria shall be submitted to the enforcement agency as an alternative system.*

[DSA-SS] *Peer review requirements in Section 322 of the California Existing Building Code shall apply to design reviews required by ASCE 7, Chapters 17, 18, 31 and ASCE 49.*

[OSHPD 1 & 4] *Peer review requirements in Section 1617A.1.41 of this code shall apply to design reviews required by ASCE 7, Chapters 17, 18, 31 and ASCE 49.*

Item #4 Continued

B. Chapter 22/22A:

1) Permit use of steel and concrete composite plate shear walls and steel and concrete composite shear walls when the R factor per ASCE 7 is greater than or equal to 7.

C. Chapter 35:

2) Retain reference standard for Anchor qualification ACI 355.2(22) and ACI 355.4(22).

D. Discussion and public input

Facilitator: Roy Lobo, PhD, SE, Principal Structural Engineer; HCAI (or designee)

B. Chapter 22/22A: Modifications to ASCE 7

1) Permit use of steel and concrete composite plate shear walls and steel and concrete composite shear walls when the R factor per ASCE 7 is greater than or equal to 7.

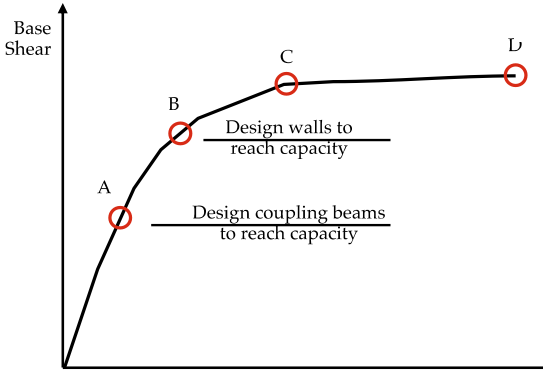
B. Chapter 22/22A: Modifications to ASCE 7

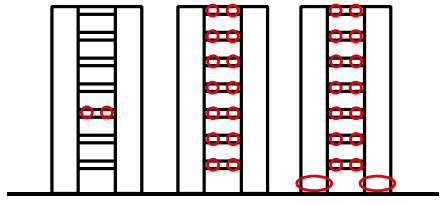
1) Steel and concrete composite plate shear walls and steel /and concrete composite shear walls

- Special Composite Plate Shear Walls – Concrete Filled and Coupled Special Composite Plate Shear Walls – Composite filled (aka. “SpeedCore”)
  - Initial development for nuclear containment structures.
  - First adopted in 2016 edition of AISC 341. Coupled system adopted in 2022.
  - Coupled system fully vetted by P695 evaluation (R=8)
  - All composite systems presently must be done as alternate system.
  - Applications for core wall systems to replace R/C walls in steel framed buildings, resulting in significant time savings.









B. Chapter 22/22A: Modifications to ASCE 7

1) Permit use of steel and concrete composite plate shear walls and steel and concrete composite shear walls when the R factor per ASCE 7 is greater than or equal to 7.

…

2202*A*.2.1 Structural steel seismic force-resisting systems and composite structural steel and concrete seismic force resisting systems. The design, detailing, fabrication and erection of structural steel seismic force-resisting systems and composite structural steel and concrete seismic force-resisting systems shall be in accordance with the provisions of Section 2202*A*.2.1.1 or 2202*A*.2.1.2, as applicable. *Seismic force-resisting systems of structural steel acting compositely with reinforced concrete shall be considered as an alternative system, except as permitted by:*

[DSA-SS] *Section 2202A.6.1.*

[OSHPD 1 & 4] *Section 2202A.4.1.* 3 *and ASCE 7, ASCE 7-22, Table 12.2-1, Item 28*. …

C. Chapter 35

2) Retain reference standard for Anchor qualification ACI 355.2(22) and ACI 355.4(21).

CHAPTER 35 REFERENCED STANDARDS

…

ACI American Concrete Institute, 38800 Country Club Drive, Farmington Hills, MI 48331-3439

…

355.2—22: Qualification of Post-Installed Mechanical Anchors in Concrete and Commentary [OSHPD 1, 1R, 2 & 5]

1617A.1.19, 1901.3.2

355.4—19(21): Qualification of Post-Installed Adhesive Anchors in Concrete and Commentary [OSHPD 1, 1R, 2 & 5]

1617A.1.19, 1901.3.3

Item #5 Comments from the Public/Committee Members on Issues not on this Agenda

The Committee will receive comments from the Public/Committee Members. Matters raised at this time may be taken under consideration for placement on a subsequent agenda.

Facilitator: Jim Malley (or designee)

Item #6 Adjournment