

NFPA 5000®-2018 Edition

Building Construction and Safety Code®

TIA Log No.: 1395

Reference: Various sections in Chapters 3, 32, 35, 36, 38, 39, 41, and 44

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www.nfpa.org/5000

1. *Revise 3.3.117 to read as follows:*

3.3.117 Components and Cladding. Elements of the building envelope or elements of building appurtenances and rooftop structures and equipment that do not qualify as part of the main wind-force resisting system [ASCE/SEI 7:26.2] (BLD-SCM)

2. *Revise 3.3.121.2 to read as follows:*

3.3.121.2 Reinforced Concrete. Concrete reinforced with no less reinforcement than the minimum amount required by ACI 318, prestressed or nonprestressed, and designed on the assumption that the two materials act together in resisting forces. [ASCE/SEI 7:11.2] (BLD-SCM)

3. *Revise 3.3.156 to read as follows:*

3.3.156 Design Earthquake. The earthquake effects that are two-thirds of the risk-targeted ~~corresponding~~ maximum considered earthquake effects. [ASCE/SEI 7:11.2] (BLD-SCM)

4. *Revise 3.3.217.2 to read as follows:*

3.3.217.2 Load Factor. A factor that accounts for deviations of the actual load from the nominal load, for uncertainties in the analysis that transforms the load into a load effect, and for the probability that more than one extreme load will occur simultaneously. [ASCE/SEI 7:1.2.1] (BLD-SCM)

5. *Revise 3.3.373 to read as follows:*

3.3.373 Limit State. A condition beyond which a structure or member becomes unfit for service and is judged either to be no longer useful for its intended function (serviceability limited state) or to be unsafe (strength limit state). [ASCE/SEI 7:1.2.1] (BLD-SCM)

6. *Revise 3.3.386 and 3.3.386.1 to read as follows:*

3.3.386 Loads. Forces or other actions that result from the weight of all building materials, occupants and their possessions, environmental effects, differential movement, and restrained dimensional changes. Permanent loads are ~~these~~ loads in which variations over time are rare or of small magnitude. All other loads are variable loads. (See also 3.3.386.5, Nominal Loads.) [ASCE/SEI 7:1.2.1] (BLD-SCM)

3.3.386.1 Dead Loads. Dead loads consist of the weight of all materials of construction incorporated into the building including, but not limited to, walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items and fixed service equipment, including the weight of cranes and material handling systems. [ASCE/SEI 7:3.1.1] (BLD-SCM)

7. *Revise 3.3.386.4 to read as follows:*

3.3.386.4 Live Loads. ~~Live loads are those~~ A loads produced by the use and occupancy of the building or other structure ~~and do that does~~ not include construction or environmental loads, such as wind load, snow load, rain load, earthquake load, flood load, or dead load.

[ASCE/SEI 7:4.1] (BLD-SCM)

3.3.386.4.1 Roof Live Load: ~~A~~ Liveloads on a roof ~~are those~~ produced (1) during maintenance by workers, equipment, and materials; and (2) during the life of the structure by movable objects, such as planters ~~or other similar small decorative appurtenances, that are not occupancy related.~~ An occupancy-related live load on a roof such as rooftop assembly areas, rooftop decks, and vegetative or landscaped roofs with occupiable areas, is considered to be a live load rather than a roof live load~~and by people.~~ [ASCE/SEI 7:4.1] (BLD-SCM)

8. *Revise 3.3.411 to read as follows:*

3.3.411 Maximum Considered Earthquake (MCE) Ground Motion. The most severe earthquake effects considered by this *Code* as defined in Chapter 11 of ASCE/SEI 7, Section 11.4. [~~ASCE/SEI 7:11.2~~] (BLD-SCM)

9. *Revise 3.3.457 to read as follows:*

3.3.457 Openings. Apertures or holes in the building envelope that allow air to flow through the building envelope and ~~which that~~ are designed as “open” during design winds as defined by ASCE/SEI 7. [ASCE/SEI 7:26.2] (BLD-SCM)

10. *Revise 3.3.567 to read as follows:*

3.3.567 Seismic Design Category. A classification assigned to a structure based on its ~~Occupancy Risk~~ Risk Category and the severity of the design earthquake ground motion at the site as defined in Section 11.4 of ASCE/SEI 7. [ASCE/SEI 7:11.2] (BLD-SCM)

11. *Revise 3.3.585 to read as follows:*

3.3.585 Site Class. A classification assigned to a site based on the types of soils present and their engineering properties as defined in Chapter 20 of ASCE/SEI 7, Section 20. [~~ASCE/SEI 7:11.2~~] (BLD-SCM)

12. *Revise 3.3.627.1 to read as follows:*

3.3.627.1 Design Strength. The product of the nominal strength and a resistance factor, ϕ . [ASCE/SEI 7:1.2.1] (BLD-SCM)

13. *Revise 3.3.677.1 to read as follows:*

3.3.677.1 Bearing Wall. Any wall meeting either of the following classifications: (1) any metal or wood stud wall that supports more than 100 lb/linear ft (~~1400~~ 1459 N/linear-m) of vertical load in addition to its own weight or (2) any concrete or masonry wall that supports more than 200 lb/linear ft (~~2900~~ 2919 N/linear-m) of vertical load in addition to its own weight. [ASCE/SEI 7:11.2] (BLD-SCM)

14. *Revise 3.3.677.11 to read as follows:*

3.3.677.11 Nonstructural Wall. ~~All~~ All walls other than a bearing walls or shear walls. [ASCE/SEI 7:11.2] (BLD-SCM)

15. *Revise 3.3.677.14 to read as follows:*

3.3.677.14 Shear Wall. A wall, bearing or nonbearing, designed to resist lateral seismic forces acting in the plane of the wall (sometimes referred to as a vertical diaphragm). [ASCE/SEI 7:11.2] (BLD-SCM)

16. Revise 32.15 to read as follows:

32.15 Rooftop Heliports. Rooftop Heliports shall be designed according to NFPA 418, and the design loads of heliports shall be in accordance with 35.14.36.10.

17. Revise 35.1.2.2 to read as follows:

35.1.2.2 Basic Requirements.

The basic requirements of strength, serviceability, self-straining forces, and analysis shall be in accordance with Section 1.3.1 through 1.3.6 excluding Section 1.3.1.3 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.

18. Revise 35.1.2.4 to read as follows:

35.1.2.4 General Structural Integrity.

The requirements for general structural integrity shall be in accordance with Sections 1.4.1 through 1.4.54 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.

19. Revise 35.1.2.8.1.2 to read as follows:

35.1.2.8.1.2 Drift limits applicable to earthquake loading shall be in accordance with Section 12.12 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.

20. Revise 35.2 to read as follows:

35.2 Special Definitions. A list of special terms used in this chapter, which are extracted from ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, and are reprinted with the permission of ASCE, follows. (See flood-related definitions in Section 39.2).

21. Revise 35.2.6 to read as follows:

35.2.6 Components and Cladding. Elements of the building envelope or elements of the building appurtenances and rooftop structures and equipment that do not qualify as part of the main wind-force resisting system. [ASCE/SEI 7:26.2]

22. Revise 35.2.7.1 and 35.2.7.2 to read as follows:

35.2.7.1 Plain Concrete. Concrete that ~~either is~~ either unreinforced or contains less reinforcement than the minimum amount specified in ACI 318 for reinforced concrete. [ASCE/SEI 7:11.2]

35.2.7.2 Reinforced Concrete. Concrete reinforced with no less reinforcement than the minimum amount required by ACI 318, prestressed or nonprestressed, and designed on the assumption that the two materials act together in resisting forces. [ASCE/SEI 7:11.2]

23. Revise 35.2.8 to read as follows:

35.2.8 Design Earthquake.

The earthquake effects that are two-thirds of the corresponding risk-targeted maximum considered earthquake (MCE_R) effects. [ASCE/SEI 7:11.2]

24. Revise 35.2.12.1 and 35.2.12.2 to read as follows:

35.2.12.1 Importance Factor (I). A factor that accounts for the degree of risk to human life, health, and welfare associated with damage to property or loss of use ~~or~~ functionality.

[ASCE/SEI 7:1.2.1]

35.2.12.2 Load Factor. A factor that accounts for deviations of the actual load from the nominal load, for uncertainties in the analysis that transforms the load into a load effect, and for the probability that more than one extreme load will occur simultaneously. [ASCE/SEI 7:1.2.1]

25. Revise 35.2.14, 35.2.15 and 35.2.15.1 to read as follows:

35.2.14 Limit State. A condition beyond which a structure or member becomes unfit for service and is judged either to be no longer useful for its intended function (serviceability limit state) or to be unsafe (strength limited state). [ASCE/SEI 7:1.2.1]

35.2.15 Loads. Forces or other actions that result from the weight of all building materials, occupants and their possessions, environmental effects, differential movement, and restrained dimensional changes. Permanent loads are ~~these~~ loads in which variations over time are rare or of small magnitude. All other loads are variable loads. (See also 3.3.384.5, *Nominal Loads*.) [ASCE/SEI 7:1.2.1]

35.2.15.1 Dead Loads. Dead loads consist of the weight of all materials of construction incorporated into the building including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding and other similarly incorporated architectural and structural items, and fixed service equipment including the weight of cranes and material handling systems. [ASCE/SEI 7:3.1.1]

26. Revise 35.2.16 to read as follows:

35.2.16 Maximum Considered Earthquake Ground Motion. The most severe earthquake effects considered by this *code* as defined in Chapter 11 of ASCE/SEI 7, ~~Section 11.4~~. [ASCE/SEI 7: 11.2].

27. Revise 35.2.18 to read as follows:

35.2.18 Openings. Apertures or holes in the building envelope that allow air to flow through the building envelope and ~~which that~~ are designed as “open” during design winds as defined by ASCE/SEI 7. [ASCE/SEI 7:26.2]

28. Revise 35.2.20 to read as follows:

35.2.20 Seismic Design Category. A classification assigned to a structure based on its ~~Occupancy~~ Risk Category and the severity of the design earthquake ground motion at the site as defined in Section 11.4 of ASCE/SEI 7, ~~Section 11.4~~. [ASCE/SEI 7:11.2]

29. Revise 35.2.22 to read as follows:

35.2.22 Site Class.

A classification assigned to a site based on the types of soils present and their engineering properties as defined in Chapter 20 of ASCE/SEI 7, ~~Section 20~~. [ASCE/SEI 7:11.2]

30. Revise 35.2.26.1 to read as follows:

35.2.26.1 Bearing Wall. Any wall meeting either of the following classifications:

- (1) Any metal or wood stud wall that supports more than 100 lb/linear ft (~~1400~~1459 N/linear-m) of vertical load in addition to its own weight or
- (2) Any concrete or masonry wall that supports more than 200 lb/linear ft (~~2900~~2919 N/linear-m) of vertical load in addition to its own weight

[ASCE/SEI 7:11.2]

31. *Revise 35.2.26.6 and 35.2.26.7 to read as follows:*

35.2.26.6 Nonstructural Wall. All walls other than a bearing walls or shear walls.

[ASCE/SEI 7:11.2]

35.2.26.7 Shear Wall. A wall, bearing or nonbearing, designed to resist lateral seismic forces acting in the plane of the wall (sometimes referred to as a vertical diaphragm). [ASCE/SEI

7:11.2]

32. *Delete the extract information following Table 35.3.1 to read as follows:*

~~[ASCE/SEI 7: Table 1-1]~~

33. *Revise 35.3.1.1 to read as follows:*

35.3.1.1* Minimum design loads for structures shall incorporate the applicable importance factors given in ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, Table 1.5-2. (See A.35.3.1.1.)

34. *Revise 35.3.2 and 35.3.3 to read as follows:*

35.3.2 Multiple Risk Categories. Where buildings or other structures are divided into portions with independent structural systems, the classification for each portion shall be permitted to be determined independently in accordance with ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, Section 1.5.2.

35.3.3 Multiple Use. Where a structure is occupied ~~for~~by two or more occupancies not included in the same occupancy category, the structure shall be assigned the classification of the highest occupancy category corresponding to the various occupancies. Where structures have two or more portions that are structurally separated in accordance with Section 12.12.3 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, each portion shall be separately classified. Where a structurally separated portion of a structure provides required access to, provides required egress from, or shares life safety components with another portion having a higher occupancy category, both portions shall be assigned the higher occupancy category.

35. *Revise 35.4.2.4 and 35.4.2.5 to read as follows:*

35.4.2.4 Wind Load. The following information related to wind loads shall be shown (*see Section 35.9*), regardless of whether wind loads govern the lateral design of the building:

- ~~(1) Basic wind speed (mph)~~
- ~~(2) Wind importance factor (*I*) and risk category~~
- ~~(3) Wind exposure — with wind exposure and applicable wind direction indicated if more than one wind exposure is utilized~~
- ~~(4) Building classification as enclosed, partially enclosed, or open, and protection of openings where required~~
- ~~(5) Topographic factor (*K_{zt}*)~~

~~(6) Wind design pressure (p) to be used for the design of exterior components and cladding not specifically designed by the responsible registered design professional with p for each exposure indicated if more than one exposure is utilized~~

(1) Risk category and MRI

(2) Basic wind speed (V , mph)

(3) Ground surface roughness (B, C, or D)

(4) Height

(5) Velocity pressure coefficient (K_z)

(6) Building classification as enclosed, partially enclosed, or open, and protection of openings where required

(7) Internal pressure coefficient (GC_{pi})

(8) Effective wind area (EWA)

(9) External pressure coefficient (GC_p)

(10) Topographic factor (K_{zt})

(11) Elevation factor (K_e) if taken as other than 1.0

(12) Directionality factor (K_d)

(13) Wind design pressure (p)

35.4.2.5 Earthquake Design Data. The following information related to seismic design shall be shown (*see Section 35.10*), regardless of whether seismic loads govern the lateral design of the building:

- (1) Mapped maximum considered earthquake spectral response acceleration at short periods (S_s) and at a period of 1 second (S_1)
- (2) Site class
- (3) Design earthquake spectral response acceleration at short periods (S_{DS}) and at a period of 1 second (S_{D1})
- (4) Risk category
- (5) Seismic importance factor (I)
- (6) Seismic design category
- (7) ~~Basic-Designated~~ seismic force-resisting system
- (8) Analysis procedure

36. *Revise 35.5 to read as follows:*

35.5 Dead Loads. Dead loads shall be determined in accordance with Section 3.1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.

37. *Delete 35.5.1 and 35.5.2 in their entirety.*

38. *Revise 35.6.1.2 to read as follows:*

35.6.1.2^{*} Floors and other structural elements of buildings ~~in the locations specified in Table 4-14.3.1 of ASCE/SEI 7~~ shall be designed to support the uniformly distributed live loads prescribed in 35.6.2 or the minimum concentrated loads prescribed in 35.6.3, whichever produces the greater stresses.

39. *Revise section 35.6.2 to read as follows:*

35.6.2 Uniformly Distributed Live Loads.

35.6.2.1 The minimum, uniformly distributed live loads used in the design of buildings and other structures ~~in pounds per square foot shall be as set forth in Table 4-14.3.1~~ shall be in accordance with Section 4.3 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

~~35.6.2.2~~ The live loads in Table 4-14.3.1 of ASCE/SEI 7 shall be minimum loads to be used for the occupancies listed.

~~35.6.2.3~~ Where the building will be subjected to greater live loads than those specified in Table 4-14.3.1 Section 4.3 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, such loads shall be utilized for design including, but not limited to, the requirements in ~~35.6.2.3.1 through 35.6.2.3.3~~ 35.6.1.14.1 and 35.6.1.14.2.

~~35.6.2.3.1 ...~~

~~35.6.2.3.1.1 ...~~

~~35.6.2.3.1.2 ...~~

~~35.6.2.3.2 ...~~

~~35.6.2.3.3 ...~~

~~35.6.2.3.3.1 ...~~

~~35.6.2.3.3.2 ...~~

40. Revise section 35.6.3 to read as follows:

35.6.3 Concentrated Loads.

35.6.3.1 Provision shall be made in designing floors and other structural elements of buildings for a concentrated load as set forth in Table 4-14.3.1 in accordance with Section 4.4 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

~~35.6.3.2 ...~~

35.6.3.3 Stage floors shall meet the following requirements:

- (1) Stage floors shall be designed to support not less than a 2000 lb (8.9 kN) concentrated load on a 1 ft² (0.09 m²) area at any point.
- (2) The concentrated load specified in 35.6.3.3(1) shall not be required to be applied simultaneously with the required uniform load.

35.6.3.3 The concentrated load on stair treads shall be in accordance with Section 4.16 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

41. Revise section 35.6.4 to read as follows:

35.6.4 Garage Loads, Sidewalks, Vehicular Driveways, and Yards Subject to Trucking

35.6.4.1 Passenger Vehicle Garages. Floors in garages or portions of a building used for the storage of motor vehicles shall be designed in accordance with Section 4.10.1 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.6.4.2 Live Loads for Areas Subject to Truck, Bus, and Emergency Vehicle Traffic.

35.6.4.2.1

Minimum live loads for areas subject to truck, bus, and emergency vehicle traffic shall be as specified in Table 35.6.4.2.1 but shall be not less than 50 psf (2.4 kN/m²).

Table 35.6.4.2.1 Uniform and Concentrated Loads

Loading Class [†]	Uniform Load [lb/linear ft of lane (kN/linear m of lane)]	Concentrated Load [‡] [lb (kN)]	
		For Moment Design	For Shear Design
H20-44 and HS20-44	640 (9.3)	18,000 (80)	26,000 (115)
H15-44 and HS15-44	480 (7.0)	13,500 (60)	19,500 (87)

[†]An H loading class designates a two-axle truck with a semitrailer. An HS loading class designates a tractor truck with a semitrailer. The numbers following the letter classification indicate the gross weight, in tons, of the standard truck and the year the loadings were instituted.

[‡]See 35.6.4.2.2 for the loading of multiple spans.

35.6.4.2.2

The concentrated load and uniform load shall be uniformly distributed over a 10 ft (3050 mm) width on a line normal to the centerline of the lane placed within a lane 12 ft (3660 mm) in width.

35.6.4.2.2.1

The loads shall be placed within their individual lanes so as to produce the maximum stress in each structural member.

35.6.4.2.2.2

Single spans shall be designed for the uniform load in Table 35.6.4.1, and one simultaneous concentrated load shall be positioned to produce the maximum effect.

35.6.4.2.2.3

Multiple spans shall be designed for the uniform load in Table 35.6.4.1 on the spans, and two simultaneous concentrated loads in two spans shall be positioned to produce the maximum negative moment effect.

35.6.4.2.2.4

Multiple-span design loads, for other effects, shall be the same as for single spans.

35.6.4.3 Live Loads on Sidewalks, Vehicular Driveways, and Yards Subject to Trucking.

Live loads on sidewalks, vehicular driveways, and yards subject to trucking shall be in accordance with Section 4.15 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.

42. Revise section 35.6.5 to read as follows:

35.6.5 Handrails, Guardrails, Grab Bars, Vehicle Barrier Systems, and Fixed Ladders.

35.6.5.1—All required handrails, guardrails, grab bars, vehicle barrier systems, and fixed ladders shall be designed and constructed to the structural loading conditions in Section 4.5 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.

35.6.5.2...

43. Revise section 35.6.6 to read as follows:

35.6.6* Impact Loads. Provisions for the live loads specified in 35.6.2 shall be made in the structural design for occupancies and loads that involve vibration and impact forces, as

required in Section 4.6 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

44. Revise section 35.6.7, to read as follows:

35.6.7 Reduction in Uniform Live Loads.

35.6.7.1

Reductions in the minimum required design live load, except for roof uniform live loads, shall be permitted in accordance with Section 4.7 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.6.7.2

Reductions in the minimum design roof uniform live loads shall be permitted in accordance with Section 4.8 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

45. Revise section 35.6.8 to read as follows:

35.6.8 Crane Loads. All craneways and supporting construction shall be designed and constructed to comply with Section 4.9 in ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

46. Add new sections 35.6.10 through 35.6.14 to read as follows:

35.6.10 Helipad Loads. Loads on helipads shall be in accordance with Section 4.11 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.6.11 Uninhabitable Attics. Loads in uninhabitable attics shall be in accordance with Section 4.12 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.6.12 Library Stack Rooms. Loads in library stack rooms shall be in accordance with Section 4.13 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.6.13 Solar Panel Systems. Roof structures that support solar panel systems shall be designed in accordance with Section 4.17 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.6.14 Reviewing Stands, Grandstands, and Bleachers.

35.6.14.1 Footboards in reviewing stands, grandstands, and bleachers shall be designed to resist 120 lb/linear ft (180 kg/linear m).

35.6.14.2 Reviewing stands, grandstands, bleachers, and supporting structures shall meet the requirements of Section 4.14 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

47. Revise 35.7.2 through 35.7.4 to read as follows:

35.7.2 Minimum Roof Live Loads. Ordinary roofs, either flat, pitched, or curved, shall be designed for the live loads as specified in Table 4.14.3-1 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.7.3 Rain Loads. Rain loads, where utilized in the combination of loads specified in Chapter 35.15, shall be calculated in accordance with Chapter 8 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.7.3.1 ...

~~35.7.3.2 ...~~

~~35.7.3.3 ...~~

35.7.4 Special-Purpose Roofs. Roofs that have occupancy functions, such as roof gardens, assembly occupancies, or other special purposes, shall be permitted to have their uniformly distributed live load reduced in accordance with the requirements of Section 4.8.3 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

48. Revise 35.8.1.2 to read as follows:

35.8.1.2 ~~Design~~ Ground snow loads and design roof snow loads shall be determined in accordance with ~~Section~~ Chapter 7 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, but the design roof load shall be not less than that determined by Section 35.7.

49. Delete section 35.8.2 in its entirety, including associated Annex A.35.8.2 and all Tables and Maps.

50. Revise 35.9.1.3.1 and 35.9.1.3.2 to read as follows:

35.9.1.3.1 Wind loads on every building or structure shall be determined by the provisions of Chapters 26 through 31 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.9.1.3.2 As an alternative to the requirement of 35.9.1.3.1, wind loads determined by the following shall be permitted, subject to the limitations therein:

- (1) ANSI/NAAMM FP 1001, *Guide Specifications for Design of Metal Flagpoles Manual*
- (2) Wind tunnel tests conducted in accordance with Chapter 31 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- (3) TIA-222-G, *Structural Standards for Steel Antenna Towers and Antenna Structures*
- (4) For bleachers and grandstands, the requirements of 35.9.1.5
- (5) For residential structures, AISI S230

51. Delete sections 35.9.2 and 35.9.3 in their entirety, including associated Annex material and all Tables and Figures.

52. Revise section 35.10 to read as follows:

35.10 Earthquake Loads.

35.10.1 General. All structures and nonstructural components, and portions thereof, shall be designed and constructed to resist the effects of earthquake motions as prescribed by ~~Sections~~ Chapters 11 through 23 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

~~35.10.2 ...~~

~~35.10.3 ...~~

~~35.10.4 ...~~

~~35.10.5 ...~~

~~35.10.6 ...~~

~~35.10.7 ...~~

35.10.8² Seismic Design of Steel Structures. The seismic design of steel structures shall be in accordance with the provisions of Chapter 44 of this *Code*. The provisions of Section 14.1

of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, shall not apply.

53. Revise section 35.11 to read as follows:

35.11 Lateral Soil Loads. In the absence of a geotechnical soil analysis, soil loads in accordance with Section 3.2.1 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, ~~in Table 35.11~~ shall be used as the minimum design lateral soil loads.

54. Delete Table 35.11 in its entirety.

55. Revise 35.12.2 to read as follows:

35.12.2 Design Flood Loads. Design flood loads shall be determined in accordance with Chapter 5 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

56. Revise 35.13 to read as follows:

35.13 Ice Loads — Atmospheric Icing Loads. Ice loads as a result of atmospheric icing shall be determined in accordance with Chapter 10 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

57. Revise 35.14.2.2 to read as follows:

35.14.2.2 The loads required by 35.14.2.1 shall be determined in accordance with Section 3.2.2 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

58. Delete section 35.14.3 in its entirety.

59. Revise 35.15.1 and 35.15.2 to read as follows:

35.15.1 All buildings and other structures shall be designed using the provisions of Sections 2.1 through 2.4 and Section 2.6, as applicable, of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

35.15.2 Either Section 2.3 and Section 2.6.1 or Section 2.4 and Section 2.6.2 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, shall be used exclusively for proportioning elements of a particular construction material throughout the structure.

60. Revise 36.1.1 to read as follows:

36.1.1 In addition to the requirements of this chapter, structures assigned to Seismic Design Category c, Seismic Design Category E, and Seismic Design Category F shall comply with the applicable requirements in ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

61. Revise paragraphs 36.6.2.4, 36.6.2.5 and 26.6.2.6 to read as follows:

36.6.2.4 Thickness Based on Soil Loads, Unbalanced Backfill Height, and Wall Height. Subject to the limitations of Chapter 14 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, ~~Section 14~~, the thickness of foundation walls shall comply with the requirements of Table 36.6.2.2(a) for plain masonry

and plain concrete walls or Table 36.6.2.2(b), Table 36.6.2.2(c), and Table 36.6.2.2(d) for reinforced concrete and masonry walls.

36.6.2.5 Rubble Stone. Subject to the limitations of Chapter 14 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, Section 14, foundation walls of rough or random rubble stone shall be not less than 16 in. (405 mm) thick.

36.6.2.6 Foundation Walls.

Subject to the limitations of Chapter 14 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, Section 14, foundation walls constructed in accordance with Table 36.6.2.2(a), Table 36.6.2.2(b), Table 36.6.2.2(c), or Table 36.6.2.2(d) shall comply with all of the following:

...

62. *Revise paragraphs 38.4.2.1 and 38.4.2.2 to read as follows:*

38.4.2.1 For buildings less than or equal to 60 ft (18 m) in height and located outside hurricane-prone regions, as defined by ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, the roof surface shall be protected in accordance with 38.4.2.1.1 or 38.4.2.1.2.

38.4.2.2 For buildings greater than 60 ft (18 m) in height or located within hurricane-prone regions, as defined by ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, the roof surface shall be protected in accordance with 38.4.2.2.1 through 38.4.2.2.2.

63. *Revise 39.2.10 to read as follows:*

39.2.10 Flood Load. See Chapter 5 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Chapter 5~~.

64. *Revise 41.2.4.3 to read as follows:*

41.2.4.3 Concrete piles, and caisson supporting structures assigned to Seismic Design Category D through Seismic Design Category F shall comply with ACI 318 if not in conflict with the requirements of Chapter 36 of this Code and Section 14.2.3 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.

65. *Revise 41.5 to read as follows:*

41.5 Seismic Requirements. Modifications to ACI 318 requirements shall be in accordance with Chapter 14 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Chapter 14~~, and the additional provisions of this section.

66. *Revise 41.5.1.2 to read as follows:*

41.5.1.2 Anchors designed to resist wall out-of-plane forces with design strengths equal to or greater than the force determined in accordance with Equation 12.11-1 or 12.14-10 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Equation 12.11-1 or 12.14-10~~ shall be deemed to satisfy the overstrength requirement in ACI 318.

67. *Revise 44.2.2.1.1.2 and 44.2.2.1.1.3 to read as follows:*

44.2.2.1.1.2 Where a response modification coefficient, R , in accordance with Table 12.2-1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other*

Structures, ~~Table 12.2-1~~, is used for the design of structural steel buildings assigned to Seismic Design Category B or Seismic Design Category C, the seismic force-resisting system shall be designed and detailed in accordance with the provisions of AISC 341, *Seismic Provisions for Structural Steel Buildings*, except as permitted in 44.2.2.1.1.3 **44.2.2.1.1.3** In Table 12.2-1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Table 12.2-1~~, the response modification coefficient, R , designated for “steel systems not specifically detailed for seismic resistance, excluding cantilever column systems” shall be permitted to be used for systems designed and detailed in accordance with the provisions of AISC 360 only.

68. *Revise 44.2.2.1.1.2 to read as follows:*

44.2.2.1.2 Seismic Design Category D, Seismic Design Category E, or Seismic Design Category F. Seismic force-resisting systems in structural steel buildings assigned to Seismic Design Category D, Seismic Design Category E, or Seismic Design Category F shall be designed and detailed in accordance with AISC 341, except as permitted in Table 15.4-1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Table 15.4.1~~.

69. *Revise 44.2.2.2 to read as follows:*

44.2.2.2 Structural Steel Members. The design, detailing, fabrication, and erection of structural steel members in seismic force-resisting systems other than those covered in 44.2.2.1, including struts, collectors, chords, and foundation elements, shall be in accordance with AISC 341, *Seismic Provisions for Structural Steel Buildings*, where either of the following applies:

- (1) The structure is assigned to Seismic Design Category D, Seismic Design Category E, or Seismic Design Category F, except as permitted in Table 15.4-1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Table 15.4-1~~.
- (2) A response modification coefficient, R , greater than 3 in accordance with Table 12.2-1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Table 12.2-1~~, is used for the design of the structure assigned to Seismic Design Category B or Seismic Design Category C.

70. *Revise 44.3.2 to read as follows:*

44.3.2 Seismic Requirements for Composite Structural Steel and Concrete Construction. Where a response modification coefficient, R , in accordance with Table 12.2-1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Table 12.2-1~~, is used as part of a system of structural steel acting compositely with reinforced concrete, the structure shall be designed and detailed in accordance with the provisions of AISC 341, *Seismic Provisions for Structural Steel Buildings*.

71. *Revise 44.6.4 to read as follows:*

44.6.4 Where required by ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, the seismic design of steel storage racks shall also be in accordance with the requirements of Section 15.5.3 of ASCE/SEI 7.

72. *Revise 44.7.3 to read as follows:*

44.7.3 Seismic Requirements for Cold-Formed Steel Structures. Where a response modification coefficient, R , in accordance with Table 12.2-1 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Table 12.2-1~~, is used for the design of cold-formed steel structures, the structures shall be designed and detailed in accordance with the requirements of AISI S100, *North American Specification for the Design of Cold-Formed Steel Structural Members*; and for cold-formed steel special bolted moment frames, AISI-S400, *North American Standard for Seismic Design of Cold-Formed Steel Structural Systems*.

73. *Revise 44.8.1.1.1 and 44.8.1.1.2 to read as follows:*

44.8.1.1.1 Except as permitted in 44.8.1.1.2, when a response modification coefficient, R , in accordance with Table 12.2-2 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, is used for the design of cold-formed steel light-frame construction assigned to seismic design category B or C, the seismic force-resisting system shall be designed and detailed in accordance with the requirements of AISI S400, *North American Standard for Seismic Design of Cold-Formed Steel Structural Systems*

44.8.1.1.2 Response modifications for coefficient, R , for “Steel systems not specifically detailed for seismic resistance excluding cantilever column systems” per Table 12.2-1 in ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, shall be permitted for systems designed and detailed in accordance with AISI S240, *North American Standard for Cold-Formed Steel Structural Framing*, and need not be designed and detailed in accordance with AISI S400, *North American Standard for Seismic Design of Cold-Formed Steel Structural Systems*.

74. *Revise Annex A.3.3.68 to read as follows:*

A.3.3.68 Buildings. The term *building* is to be understood as if followed by the words “or portions thereof” (*see also 3.3.634, Structure*). Each portion of a building that is separated from other portions by a fire wall is considered to be a separate building. (This annex not is not extracted from ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.)

75. *Revise Annex A.3.3.475 to read as follows:*

A.3.3.475 Partition. A partition can be permanent or temporary. (This annex note is not extracted from ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*.)

76. *Revise Annex A.35.3.1.1 to read as follows:*

A.35.3.1.1 Table 1.5-2 of ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ~~Table 1.5-2~~, is reprinted in this section with the permission of ASCE/SEI.

77. *Delete Annex A.35.6.1.2 in its entirety, including Table A.35.6.1.2.*

78. *Revise Annex A.38.9.15.5 to read as follows:*

A.38.9.15.5 The FM Data Sheet 1-35, Green Roofs, does not recommend the use of ... Limited testing done at FM Global in 2016 using 1/4 in. (6.4 mm) annealed glass indicates that green roof systems could be used in locations where VASD is greater than or equal to 100 mph (45 m/s, ASCE/SEI 7-05) or VUSD is greater than or equal to 126 mph (57 m/s) in

ASCE/SEI 7-10, Minimum Design Loads for Buildings and Other Structures, or ASCE/SEI 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, for the conditions in Table A.38.9.15.5.

...

79. *Revise Annex A.40.2.3.3 to read as follows:*

A.40.2.3.3 Section 11A.1 of ASCE/SEI 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, ~~Section 11A.1~~, provides nationally recognized guidance for quality assurance for structures subject to earthquake ground motions.

Substantiation: NFPA 5000 references an old edition of ASCE/SEI 7. During the development process, the new edition of ASCE/SEI 7 was not available so the reference to the 2010 edition was maintained. The 2016 edition of ASCE/SEI 7 is now available and updates should be made to reference the most current information available.

Emergency Nature: The proposed TIA intends to accomplish a recognition of an advance in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public.

At the time of the second draft meetings the 2016 edition of ASCE 7 was not available. Significant updates were made to ASCE 7 including the change in terminology from occupancy category to risk category. This TIA incorporates the latest information from ASCE 7 into NFPA 5000 and works to better correlate the two documents.

Anyone may submit a comment by the closing date indicated above. Please identify the TIA number forward to the Secretary, Standards Council. [SUBMIT A COMMENT](#)