

Part III—Building Planning and Construction

CHAPTER 3

BUILDING PLANNING

User note:

About this chapter: Chapter 3 contains a wide array of building planning requirements that are critical to designing a safe and usable building. This includes, but is not limited to, requirements related to: general structural design, fire-resistant construction, light, ventilation, sanitation, plumbing fixture clearances, minimum room area and ceiling height, safety glazing, means of egress, automatic fire sprinkler systems, smoke and carbon monoxide alarm systems, accessibility, solar energy systems, swimming pools, spas and hot tubs.

SECTION R300 HEIGHT AND AREA LIMITATIONS

R300.1 General. Buildings of VB, unprotected wood-framed construction, as that term is defined in Section 602 of the building subcode, shall be not more than two stories, not more than 35 feet in height (10 668 mm), and not more than 4,800 square feet in area per floor. For the purpose of applying this subsection, a habitable attic shall not constitute a story in a two-story dwelling.

R300.2 Increases in height. The building shall be not more than three stories and not more than 55 feet (16 764 mm) in height where the building is equipped throughout with an automatic sprinkler system installed in accordance with the National Fire Protection Association (NFPA) Standard 13D or Section P2904.

R300.3 Increases in area. The area of a building may be increased as provided in Sections R300.3.1 and R300.3.2 below.

R300.3.1 Automatic sprinkler system. The area limitation shall be unlimited where a building is equipped throughout with an automatic sprinkler system installed in accordance with NFPA Standard 13D or Section P2904.

R300.3.2 Frontage. The area limitation shall be permitted to be increased two percent for each one percent of excess frontage where a building has more than 25 percent of the building perimeter fronting on a street or other unoccupied space. The unoccupied space shall be on the same lot or dedicated for public use, shall be not less than 30 feet in width (9144 mm), and shall have access from a street by a posted fire lane that is not less than 18 feet in width (5486 mm).

R300.4 Buildings of VA construction. Buildings of VA, protected wood-framed construction, as that term is defined in Section 602 of the building subcode, shall be not more than three stories, not more than 40 feet in height (12 192 mm), and not more than 10,200 square feet in area per floor.

R300.4.1 Increases in height. Buildings of VA construction greater than three stories in height shall be designed and constructed in accordance with the building subcode.

R300.4.2 Increases in area. Buildings of VA construction shall be permitted to be increased in area in accordance with Section R300.3.

R300.5 Buildings of other types of construction. The height and area limits allowable for buildings of construction Type VA shall apply to other construction types, as they are defined in Section 602 of the building subcode, provided that the fire ratings of building elements meet or exceed the requirements for Type VA in Tables 601 and 602 of the building subcode.

SECTION R301 DESIGN CRITERIA

R301.1 Application. Buildings and structures, and parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads, snow loads, wind loads and seismic loads as prescribed by this code. The construction of buildings and structures in accordance with the provisions of this code shall result in a system that provides a complete load path that meets the requirements for the transfer of loads from their point of origin through the load-resisting elements to the foundation. Buildings and structures constructed as prescribed by this code are deemed to comply with the requirements of this section.

R301.1.1 Alternative provisions. As an alternative to the requirements in Section R301.1, the following standards are permitted subject to the limitations of this code and the limitations therein. Where engineered design is used in conjunction with these standards, the design shall comply with the *International Building Code*.

1. AWC *Wood Frame Construction Manual* (WFCM).
2. AISI *Standard for Cold-Formed Steel Framing—Prescriptive Method for One- and Two-Family Dwellings* (AISI S230).
3. ICC *Standard on the Design and Construction of Log Structures* (ICC 400).

R301.1.2 Construction systems. The requirements of this code are based on platform and balloon-frame construc-

tion for light-frame buildings. The requirements for concrete and masonry buildings are based on a balloon framing system. Other framing systems must have equivalent detailing to ensure force transfer, continuity and compatible deformations.

R301.1.3 Engineered design. Where a building of otherwise conventional construction contains structural elements exceeding the limits of Section R301 or otherwise not conforming to this code, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design in accordance with the *International Building Code* is permitted for buildings and structures, and parts thereof, included in the scope of this code.

R301.2 Climatic and geographic design criteria. Buildings shall be constructed in accordance with the provisions of this code as limited by the provisions of this section. Additional criteria shall be established by the local *jurisdiction* and set forth in Table R301.2(1).

R301.2.1 Wind design criteria. Buildings and portions thereof shall be constructed in accordance with the wind provisions of this code using the ultimate design wind speed in Table R301.2(1) as determined from Figure R301.2(5)A. The structural provisions of this code for wind loads are not permitted where wind design is required as specified in Section R301.2.1.1. Where different construction methods and structural materials are used for various portions of a building, the applicable requirements of this section for each portion shall apply. Where not otherwise specified, the wind loads listed in Table R301.2(2) adjusted for height and exposure using Table R301.2(3) shall be used to determine design load performance requirements for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors. Asphalt shingles shall be designed for wind speeds in accordance with Section R905.2.4. A continuous load path shall be provided to transmit the applicable uplift forces in Section R802.11.1 from the roof assembly to the foundation.

R301.2.1.1 Wind limitations and wind design required. The wind provisions of this code shall not apply to the design of buildings where wind design is required in accordance with Figure R301.2(5)B.

Exceptions:

1. For concrete construction, the wind provisions of this code shall apply in accordance with the limitations of Sections R404 and R608.
2. For structural insulated panels, the wind provisions of this code shall apply in accordance with the limitations of Section R610.
3. For cold-formed steel light-frame construction, the wind provisions of this code shall apply in accordance with the limitations of Sections R505, R603 and R804.

In regions where wind design is required in accordance with Figure R301.2(5)B, the design of buildings for wind loads shall be in accordance with one or more of the following methods:

1. AWC *Wood Frame Construction Manual* (WFCM).
2. ICC *Standard for Residential Construction in High-Wind Regions* (ICC 600).
3. ASCE *Minimum Design Loads for Buildings and Other Structures* (ASCE 7).
4. AISI *Standard for Cold-Formed Steel Framing—Prescriptive Method For One- and Two-Family Dwellings* (AISI S230).
5. *International Building Code*.

The elements of design not addressed by the methods in Items 1 through 5 shall be in accordance with the provisions of this code.

Where ASCE 7 or the *International Building Code* is used for the design of the building, the wind speed map and exposure category requirements as specified in ASCE 7 and the *International Building Code* shall be used.

R301.2.1.1.1 Sunrooms. *Sunrooms* shall comply with AAMA/NPEA/NSA 2100. For the purpose of applying the criteria of AAMA/NPEA/NSA 2100 based on the intended use, *sunrooms* shall be identified as one of the following categories by the permit applicant, design professional or the property owner or owner's agent in the construction documents. Component and cladding pressures shall be used for the design of elements that do not qualify as main windforce-resisting systems. Main windforce-resisting system pressures shall be used for the design of elements assigned to provide support and stability for the overall *sunroom*.

Category I: A thermally isolated *sunroom* with walls that are open or enclosed with insect screening or 0.5 mm (20 mil) maximum thickness plastic film. The space is nonhabitable and unconditioned.

Category II: A thermally isolated *sunroom* with enclosed walls. The openings are enclosed with translucent or transparent plastic or glass. The space is nonhabitable and unconditioned.

Category III: A thermally isolated *sunroom* with enclosed walls. The openings are enclosed with translucent or transparent plastic or glass. The *sunroom* fenestration complies with additional requirements for air infiltration resistance and water penetration resistance. The space is nonhabitable and unconditioned.

Category IV: A thermally isolated *sunroom* with enclosed walls. The *sunroom* is designed to be heated or cooled by a separate temperature control or system and is thermally isolated from the primary structure. The *sunroom* fenestration

complies with additional requirements for water penetration resistance, air infiltration resistance and thermal performance. The space is nonhabitable and conditioned.

Category V: A *sunroom* with enclosed walls. The sunroom is designed to be heated or cooled and is open to the main structure. The *sunroom* fenestration complies with additional requirements for water penetration resistance, air infiltration resistance and thermal performance. The space is habitable and conditioned.

R301.2.1.2 Protection of openings. Exterior glazing in buildings located in windborne debris regions shall be protected from windborne debris. Glazed opening protection for windborne debris shall meet the requirements of the Large Missile Test of ASTM E1996 and ASTM E1886 as modified in Section 301.2.1.2.1. Garage door glazed opening protection for windborne debris shall meet the requirements of an *approved* impact-resisting standard or ANSI/DASMA 115.

Exception: Wood structural panels with a thickness of not less than $\frac{7}{16}$ inch (11 mm) and a span of not more than 8 feet (2438 mm) shall be permitted for opening protection. Panels shall be precut and attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be predrilled as required for the anchorage method and shall be secured with the attachment hardware provided. Attachments shall be designed to resist the component and cladding loads determined in accordance with either Table R301.2(2) or ASCE 7, with the permanent corrosion-resistant attachment hardware provided and anchors permanently installed on the building. Attachment in accordance with Table R301.2.1.2 is permitted for buildings with a *mean roof height* of 45 feet (13 728 mm) or less where the ultimate design wind speed, V_{ult} , is 180 mph (290 kph) or less.

R301.2.1.2.1 Application of ASTM E1996. The text of Section 2.2 of ASTM E1996 shall be substituted as follows:

2.2 ASCE Standard:

ASCE 7-10 American Society of Civil Engineers *Minimum Design Loads for Buildings and Other Structures*

The text of Section 6.2.2 of ASTM E1996 shall be substituted as follows:

6.2.2 Unless otherwise specified, select the wind zone based on the ultimate design wind speed, V_{ult} , as follows:

6.2.2.1 Wind Zone 1–130 mph \leq ultimate design wind speed, $V_{ult} < 140$ mph.

6.2.2.2 Wind Zone 2–140 mph \leq ultimate design wind speed, $V_{ult} < 150$ mph at greater than 1 mile (1.6 km) from the coastline. The coastline shall be measured from the mean high-water mark.

6.2.2.3 Wind Zone 3–150 mph (58 m/s) \leq ultimate design wind speed, $V_{ult} \leq 170$ mph (76 m/s), or 140 mph (54 m/s) \leq ultimate design wind speed, $V_{ult} \leq 170$ mph (76 m/s) and within 1 mile (1.6 km) of the coastline. The coastline shall be measured from the mean high-water mark.

6.2.2.4 Wind Zone 4–ultimate design wind speed, $V_{ult} > 170$ mph (76 m/s).

**TABLE R301.2.1.2
WINDBORNE DEBRIS PROTECTION FASTENING
SCHEDULE FOR WOOD STRUCTURAL PANELS^{a, b, c, d}**

FASTENER TYPE	FASTENER SPACING (inches) ^{a, b}		
	Panel span \leq 4 feet	4 feet < panel span \leq 6 feet	6 feet < panel span \leq 8 feet
No. 8 wood-screw-based anchor with 2-inch embedment length	16	10	8
No. 10 wood-screw-based anchor with 2-inch embedment length	16	12	9
$\frac{1}{4}$ -inch lag-screw-based anchor with 2-inch embedment length	16	16	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 4.448 N, 1 mile per hour = 0.447 m/s.

- a. This table is based on 180 mph ultimate design wind speeds, V_{ult} , and a 45-foot mean roof height.
- b. Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners shall be located not less than 1 inch from the edge of the panel.
- c. Anchors shall penetrate through the exterior wall covering with an embedment length of not less than 2 inches into the building frame. Fasteners shall be located not less than $2\frac{1}{2}$ inches from the edge of concrete block or concrete.
- d. Panels attached to masonry or masonry/stucco shall be attached using vibration-resistant anchors having an ultimate withdrawal capacity of not less than 1,500 pounds.

R301.2.1.3 Wind speed conversion. Where referenced documents are based on nominal design wind speeds and do not provide the means for conversion between ultimate design wind speeds and nominal design wind speeds, the ultimate design wind speeds, V_{ult} , of Figure R301.2(5)A shall be converted to nominal design wind speeds, V_{asd} , using Table R301.2.1.3.

TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD ^o	WIND DESIGN			SEISMIC DESIGN CATEGORY ⁱ	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP ^e	ICE BARRIER UNDERLAYMENT REQUIRED ^h	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^j
	Speed ^d (mph)	Topographic effects ^k	Special wind region ^l		Windborne debris zone ^m	Weathering ^a	Frost line depth ^b					
See Bulletin 19-1	See Bulletin 19-1	N/A	N/A	N/A	Severe	2'8" SNJ; 3'0" NNJ	Moderate to Heavy	13°F	See Bulletin 07-3	LFFPA	1500 or less	See Note j
MANUAL J DESIGN CRITERIAⁿ (see Table 1a from ACCA Manual J; fill in criteria from the closest municipality)												
Elevation		Latitude	Winter heating	Summer cooling	Altitude correction factor	Indoor design temperature	Design temperature cooling	Heating temperature difference				
Cooling temperature difference		Wind velocity heating	Wind velocity cooling	Coincident wet bulb	Daily range	Winter humidity	Summer humidity					

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

N/A = Not applicable.

- a. Where weathering requires a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code, the frost line depth strength required for weathering shall govern. The weathering column shall be filled in with the weathering index, "negligible," "moderate" or "severe" for concrete as determined from Figure R301.2(4). The grade of masonry units shall be determined from ASTM C34, C55, C62, C73, C90, C129, C145, C216 or C652.
- b. New Jersey is divided into two zones: SNJ consists of Monmouth and Burlington Counties and all counties to the south; NNJ consists of Mercer and Middlesex Counties and all counties to the north. Where the frost line depth requires deeper footings than indicated in Figure R403.1(1), the frost line depth strength required for weathering shall govern. The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.
- c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.
- d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(5)A]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.
- e. The outdoor design dry-bulb temperature shall be selected from the columns of 97 1/2-percent values for winter from Appendix D of the *International Plumbing Code*. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official. [Also see Figure R301.2(1).]
- f. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.
- g. See the local floodplain administrator (LFFPA). The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction's entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of the currently effective FIRMs and FBFMs or other flood hazard map adopted by the authority having jurisdiction, as amended.
- h. In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1, R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall fill in this part of the table with "NO."
- i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99 percent) value on the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."
- j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."
- k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall indicate "NO" in this part of the table.
- l. In accordance with Figure R301.2(5)A, where there is local historical data documenting unusual wind conditions, the jurisdiction shall fill in this part of the table with "YES" and identify any specific requirements. Otherwise, the jurisdiction shall indicate "NO" in this part of the table.
- m. In accordance with Section R301.2.1.2 the jurisdiction shall indicate the wind-borne debris wind zone(s). Otherwise, the jurisdiction shall indicate "NO" in this part of the table.
- n. The jurisdiction shall fill in these sections of the table to establish the design criteria using Table 1a or 1b from ACCA Manual J or established criteria determined by the jurisdiction.
- o. The jurisdiction shall fill in this section of the table using the Ground Snow Loads in Figure R301.2(6).

TABLE R301.2(2)
COMPONENT AND CLADDING LOADS FOR A BUILDING WITH A MEAN
ROOF HEIGHT OF 30 FEET LOCATED IN EXPOSURE B (ASD) (psf)^{a, b, c, d, e}

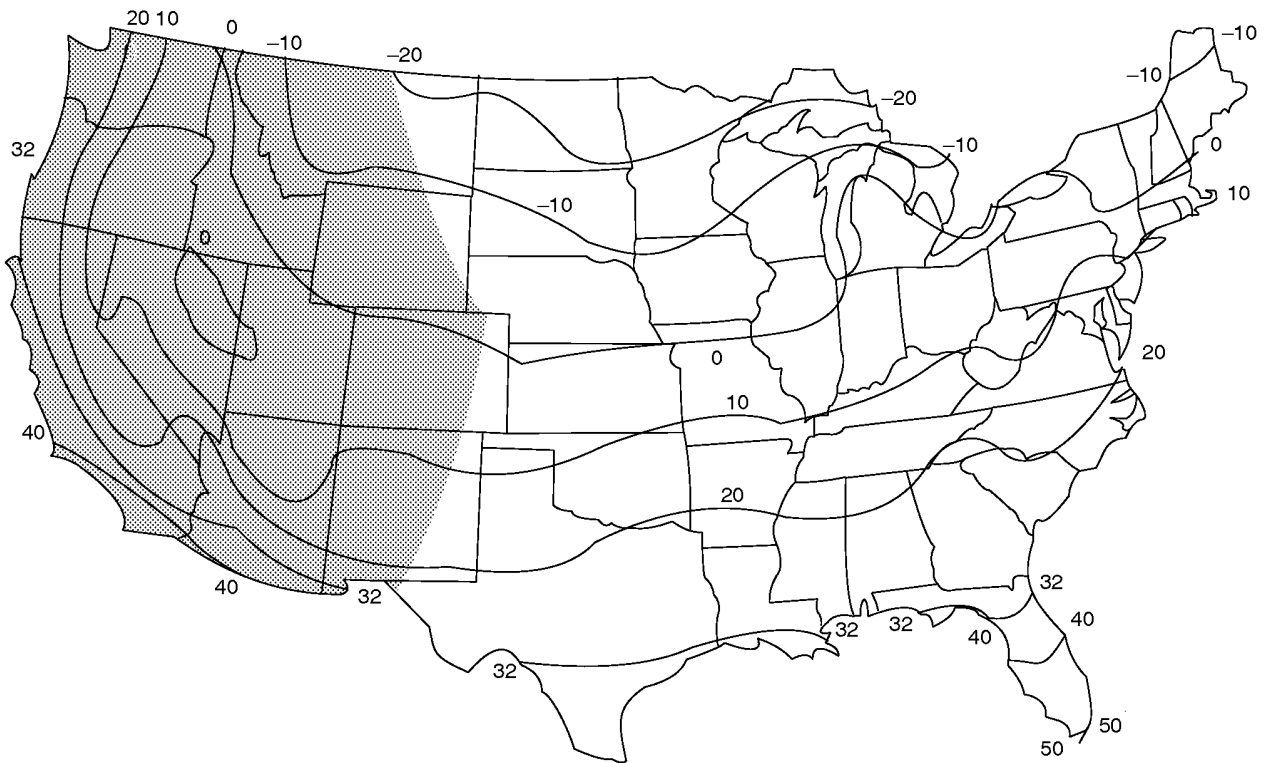
	ZONE	EFFECTIVE WIND AREA (feet ²)	ULTIMATE DESIGN WIND SPEED, <i>V_{ULT}</i> (mph)																	
			110		115		120		130		140		150		160		170		180	
Roof 0 to 7 degrees	1	10	10.0	-13.0	10.0	-14.0	10.0	-15.0	10.0	-18.0	10.0	-21.0	9.9	-24.0	11.2	-27.0	12.6	-31.0	14.2	-35.0
	1	20	10.0	-12.0	10.0	-13.0	10.0	-15.0	10.0	-17.0	10.0	-20.0	9.2	-23.0	10.6	-26.0	11.9	-30.0	13.3	-34.1
	1	50	10.0	-12.0	10.0	-13.0	10.0	-14.0	10.0	-17.0	10.0	-19.0	8.5	-22.0	10.0	-26.0	10.8	-29.0	12.2	-32.9
	1	100	10.0	-11.0	10.0	-13.0	10.0	-14.0	10.0	-16.0	10.0	-19.0	7.8	-22.0	10.0	-25.0	10.0	-28.0	11.3	-32.0
	2	10	10.0	-21.0	10.0	-23.0	10.0	-26.0	10.0	-30.0	10.0	-35.0	9.9	-40.0	11.2	-46.0	12.6	-52.0	14.2	-58.7
	2	20	10.0	-19.0	10.0	-21.0	10.0	-23.0	10.0	-27.0	10.0	-31.0	9.2	-36.0	10.6	-41.0	11.9	-46.0	13.3	-52.4
	2	50	10.0	-16.0	10.0	-18.0	10.0	-19.0	10.0	-23.0	10.0	-26.0	8.5	-30.0	10.0	-34.0	10.8	-39.0	12.2	-44.1
	2	100	10.0	-14.0	10.0	-15.0	10.0	-16.0	10.0	-19.0	10.0	-22.0	7.8	-26.0	10.0	-30.0	10.0	-33.0	11.3	-37.9
	3	10	10.0	-33.0	10.0	-36.0	10.0	-39.0	10.0	-46.0	10.0	-53.0	9.9	-61.0	11.2	-69.0	12.6	-78.0	14.2	-88.3
	3	20	10.0	-27.0	10.0	-29.0	10.0	-32.0	10.0	-38.0	10.0	-44.0	9.2	-50.0	10.6	-57.0	11.9	-65.0	13.3	-73.1
	3	50	10.0	-19.0	10.0	-21.0	10.0	-23.0	10.0	-27.0	10.0	-32.0	8.5	-36.0	10.0	-41.0	10.8	-47.0	12.2	-53.1
	3	100	10.0	-14.0	10.0	-15.0	10.0	-16.0	10.0	-19.0	10.0	-22.0	7.8	-26.0	10.0	-30.0	10.0	-33.0	11.3	-37.9
Roof > 7 to 27 degrees	1	10	10.0	-11.0	10.0	-13.0	10.0	-14.0	10.5	-16.0	12.2	-19.0	14.0	-22.0	15.9	-25.0	17.9	-28.0	20.2	-32.0
	1	20	10.0	-11.0	10.0	-12.0	10.0	-13.0	10.0	-16.0	11.1	-18.0	12.8	-21.0	14.5	-24.0	16.4	-27.0	18.4	-31.1
	1	50	10.0	-11.0	10.0	-12.0	10.0	-13.0	10.0	-15.0	10.0	-18.0	11.1	-20.0	12.7	-23.0	14.3	-26.0	16.0	-29.9
	1	100	10.0	-10.0	10.0	-11.0	10.0	-12.0	10.0	-15.0	10.0	-17.0	9.9	-20.0	11.2	-22.0	12.6	-25.0	14.2	-29.0
	2	10	10.0	-20.0	10.0	-22.0	10.0	-24.0	10.5	-29.0	12.2	-33.0	14.0	-38.0	15.9	-44.0	17.9	-49.0	20.2	-55.8
	2	20	10.0	-19.0	10.0	-20.0	10.0	-22.0	10.0	-26.0	11.1	-31.0	12.8	-35.0	14.5	-40.0	16.4	-45.0	18.4	-51.2
	2	50	10.0	-16.0	10.0	-18.0	10.0	-20.0	10.0	-23.0	10.0	-27.0	11.1	-31.0	12.7	-35.0	14.3	-40.0	16.0	-45.4
	2	100	10.0	-15.0	10.0	-16.0	10.0	-18.0	10.0	-21.0	10.0	-24.0	9.9	-28.0	11.2	-32.0	12.6	-36.0	14.2	-40.9
	3	10	10.0	-30.0	10.0	-33.0	10.0	-36.0	10.5	-43.0	12.2	-49.0	14.0	-57.0	15.9	-65.0	17.9	-73.0	20.2	-82.4
	3	20	10.0	-28.0	10.0	-31.0	10.0	-34.0	10.0	-40.0	11.1	-46.0	12.8	-53.0	14.5	-60.0	16.4	-68.0	18.4	-77.0
	3	50	10.0	-26.0	10.0	-28.0	10.0	-31.0	10.0	-36.0	10.0	-42.0	11.1	-48.0	12.7	-55.0	14.3	-62.0	16.0	-69.9
	3	100	10.0	-24.0	10.0	-26.0	10.0	-28.0	10.0	-33.0	10.0	-39.0	9.9	-44.0	11.2	-51.0	12.6	-57.0	14.2	-64.6
Roof > 27 to 45 degrees	1	10	11.9	-13.0	13.1	-14.0	14.2	-15.0	16.7	-18.0	19.4	-21.0	22.2	-24.0	25.3	-27.0	28.5	-31.0	32.0	-35.0
	1	20	11.6	-12.0	12.7	-13.0	13.8	-14.0	16.2	-17.0	18.8	-20.0	21.6	-23.0	24.6	-26.0	27.7	-29.0	31.1	-33.2
	1	50	11.2	-11.0	12.2	-12.0	13.3	-13.0	15.6	-16.0	18.1	-18.0	20.8	-21.0	23.6	-24.0	26.7	-27.0	29.9	-30.8
	1	100	10.9	-10.0	11.9	-11.0	12.9	-12.0	15.1	-15.0	17.6	-17.0	20.2	-20.0	22.9	-22.0	25.9	-25.0	29.0	-29.0
	2	10	11.9	-15.0	13.1	-16.0	14.2	-18.0	16.7	-21.0	19.4	-24.0	22.2	-28.0	25.3	-32.0	28.5	-36.0	32.0	-40.9
	2	20	11.6	-14.0	12.7	-16.0	13.8	-17.0	16.2	-20.0	18.8	-23.0	21.6	-27.0	24.6	-30.0	27.7	-34.0	31.1	-39.1
	2	50	11.2	-13.0	12.2	-15.0	13.3	-16.0	15.6	-19.0	18.1	-22.0	20.8	-25.0	23.6	-29.0	26.7	-32.0	29.9	-36.8
	2	100	10.9	-13.0	11.9	-14.0	12.9	-15.0	15.1	-18.0	17.6	-21.0	20.2	-24.0	22.9	-27.0	25.9	-31.0	29.0	-35.0
	3	10	11.9	-15.0	13.1	-16.0	14.2	-18.0	16.7	-21.0	19.4	-24.0	22.2	-28.0	25.3	-32.0	28.5	-36.0	32.0	-40.9
	3	20	11.6	-14.0	12.7	-16.0	13.8	-17.0	16.2	-20.0	18.8	-23.0	21.6	-27.0	24.6	-30.0	27.7	-34.0	31.1	-39.1
	3	50	11.2	-13.0	12.2	-15.0	13.3	-16.0	15.6	-19.0	18.1	-22.0	20.8	-25.0	23.6	-29.0	26.7	-32.0	29.9	-36.8
	3	100	10.9	-13.0	11.9	-14.0	12.9	-15.0	15.1	-18.0	17.6	-21.0	20.2	-24.0	22.9	-27.0	25.9	-31.0	29.0	-35.0
Wall	4	10	13.1	-14.0	14.3	-15.0	15.5	-16.0	18.2	-19.0	21.2	-22.0	24.3	-26.0	27.7	-30.0	31.2	-33.0	35.0	-37.9
	4	20	12.5	-13.0	13.6	-14.0	14.8	-16.0	17.4	-19.0	20.2	-22.0	23.2	-25.0	26.4	-28.0	29.7	-32.0	33.4	-36.4
	4	50	11.7	-12.0	12.8	-14.0	13.9	-15.0	16.3	-17.0	19.0	-20.0	21.7	-23.0	24.7	-27.0	27.9	-30.0	31.3	-34.3
	4	100	11.1	-12.0	12.1	-13.0	13.2	-14.0	15.5	-17.0	18.0	-19.0	20.6	-22.0	23.5	-25.0	26.5	-29.0	29.8	-32.7
	4	500	10.0	-10.0	10.6	-11.0	11.6	-12.0	13.6	-15.0	15.8	-17.0	18.1	-20.0	20.6	-22.0	23.2	-25.0	26.1	-29.0
	5	10	13.1	-17.0	14.3	-19.0	15.5	-20.0	18.2	-24.0	21.2	-28.0	24.3	-32.0	27.7	-37.0	31.2	-41.0	35.0	-46.8
	5	20	12.5	-16.0	13.6	-17.0	14.8	-19.0	17.4	-22.0	20.2	-26.0	23.2	-30.0	26.4	-34.0	29.7	-39.0	33.4	-43.7
	5	50	11.7	-14.0	12.8	-16.0	13.9	-17.0	16.3	-20.0	19.0	-23.0	21.7	-27.0	24.7	-31.0	27.9	-35.0	31.3	-39.5
	5	100	11.1	-13.0	12.1	-14.0	13.2	-16.0	15.5	-19.0	18.0	-22.0	20.6	-25.0	23.5	-28.0	26.5	-32.0	29.8	-36.4
	5	500	10.0	-10.0	10.6	-11.0	11.6	-12.0	13.6	-15.0	15.8	-17.0	18.1	-20.0	20.6	-22.0	23.2	-25.0	26.1	-29.0

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 mile per hour = 0.447 m/s, 1 pound per square foot = 0.0479 kPa.

- a. The effective wind area shall be equal to the span length multiplied by an effective width. This width shall be permitted to be not less than one-third the span length. For cladding fasteners, the effective wind area shall not be greater than the area that is tributary to an individual fastener.
- b. For effective areas between those given, the load shall be interpolated or the load associated with the lower effective area shall be used.
- c. Table values shall be adjusted for height and exposure by multiplying by the adjustment coefficient in Table R301.2(3).
- d. See Figure R301.2(8) for location of zones.
- e. Plus and minus signs signify pressures acting toward and away from the building surfaces.

TABLE R301.2(3)
HEIGHT AND EXPOSURE ADJUSTMENT COEFFICIENTS FOR TABLE R301.2(2)

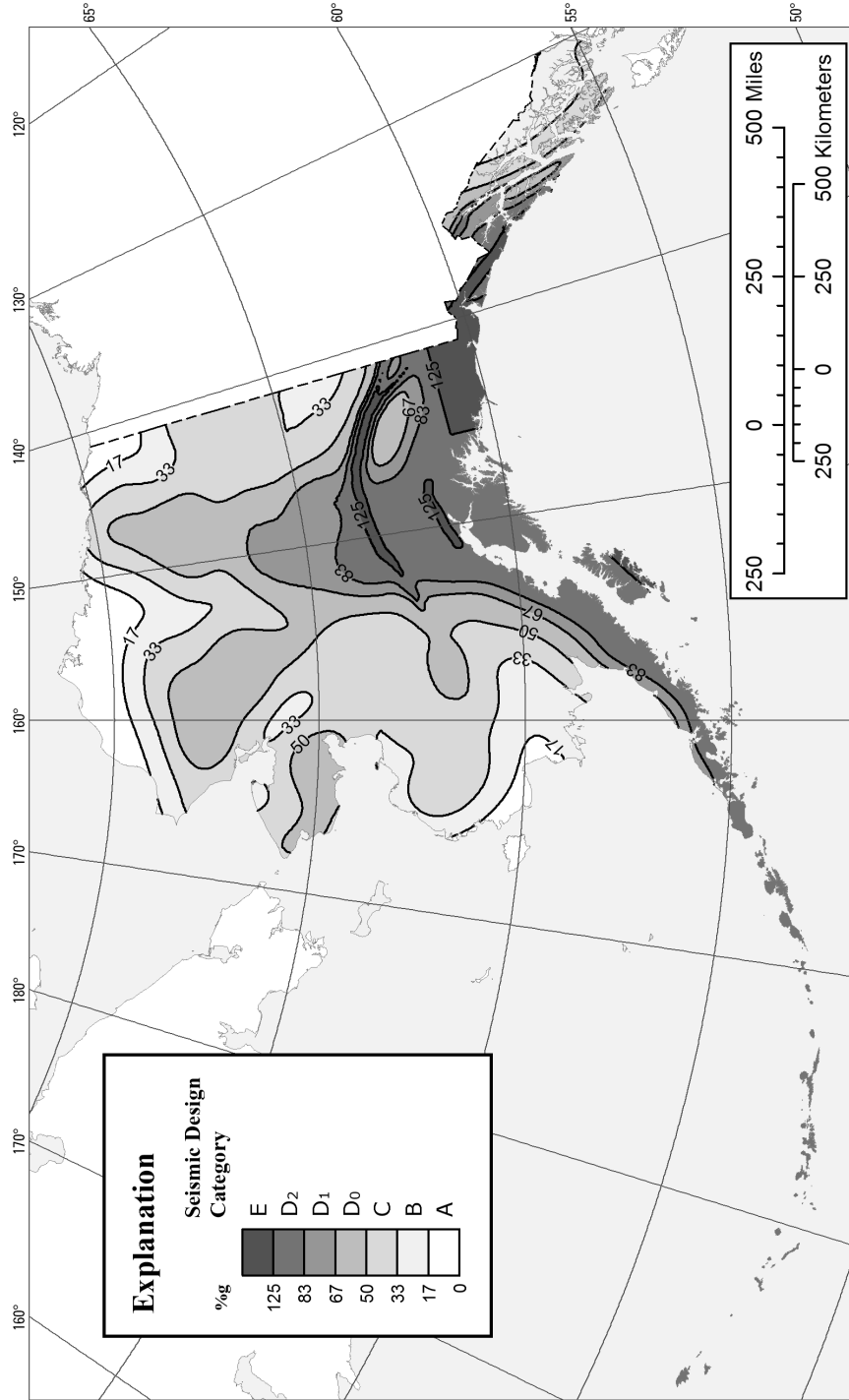
MEAN ROOF HEIGHT	EXPOSURE		
	B	C	D
15	1.00	1.21	1.47
20	1.00	1.29	1.55
25	1.00	1.35	1.61
30	1.00	1.40	1.66
35	1.05	1.45	1.70
40	1.09	1.49	1.74
45	1.12	1.53	1.78
50	1.16	1.56	1.81
55	1.19	1.59	1.84
60	1.22	1.62	1.87



 DESIGN TEMPERATURES IN THIS AREA MUST BE BASED ON ANALYSIS OF LOCAL CLIMATE AND TOPOGRAPHY

For SI: °C = [(°F)-32]/1.8.

FIGURE R301.2(1)
ISOLINES OF THE 97 1/2 -PERCENT WINTER (DECEMBER, JANUARY AND FEBRUARY) DESIGN TEMPERATURES (°F)



Map prepared by U.S. Geological Survey in collaboration with the Federal Emergency Management Agency (FEMA) funded Building Seismic Safety Council's (BSSC) Code Resource Support Committee (CRSC).

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FIGURE R301.2(2)
SEISMIC DESIGN CATEGORIES
(continued)

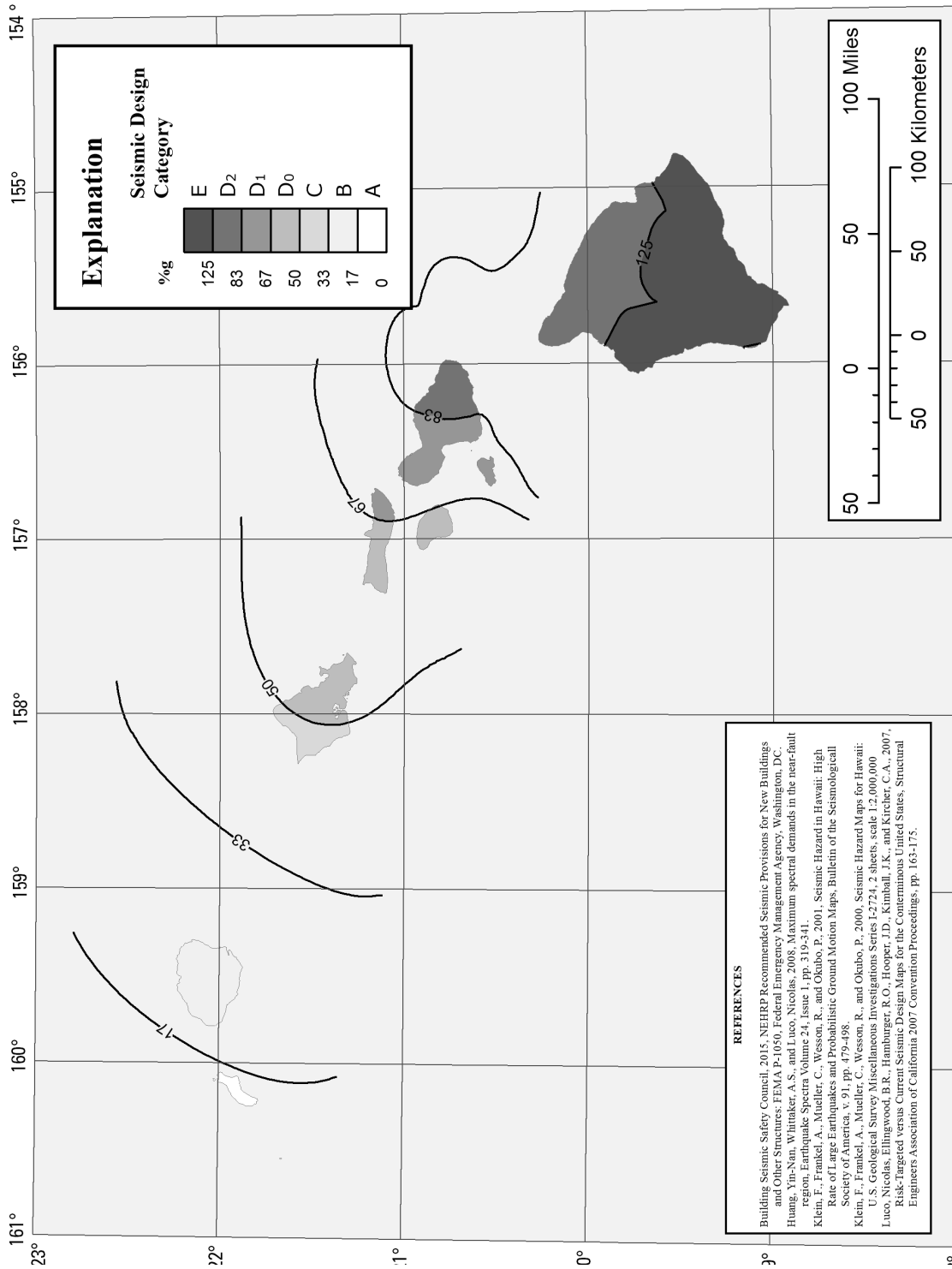


FIGURE R301.2(2)—continued
SEISMIC DESIGN CATEGORIES

(continued)