

## **SECTION 1609 WIND LOADS**

**1609.1 Applications.** Buildings, structures and parts thereof shall be designed to withstand the minimum wind loads prescribed herein. Decreases in wind loads shall not be made for the effect of shielding by other structures.

**1609.1.1 Determination of wind loads.** Wind loads on every building or structure shall be determined in accordance with Chapter 6 of ASCE 7. The type of opening protection required, the basic wind speed and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.

**Exceptions:**

1. Subject to the limitations of Sections 1609.1.1.1, the provisions of SBCCI SSTD 10 shall be permitted for applicable Group R2 and R3 buildings.
2. Subject to the limitations of Sections 1609.1.1.1, residential structures using the provisions of AF & PA WFCM
3. Designs using NAAMM FP-1001
4. Designs using TIA/EIA 222 shall be permitted for antenna- supporting structures and antennas.

**1609.1.1.1 Applicability.** The provisions of SSTD 10 are applicable only to buildings located within Exposure B or C as defined in Section 1609.4. The provisions of SBCCI SSTD 10 and the AF&PA WFCM shall not apply to buildings sited on the upper half of an isolated hill, ridge, or escarpment meeting the following conditions:

1. The hill, ridge or escarpment is 60 feet (18.3 m) or higher if located in exposure B or 30 feet (9.1 m) or higher if located in exposure C;
2. The maximum average slope of the hill exceeds 10 percent; and
3. The hill, ridge or escarpment is unobstructed upwind by other such topographic features for a distance from the high point of 50 times the height of the hill or 1 mile (1.6 km), whichever is greater.

**1609.1.2 Protection of openings.**

In wind-borne debris regions, glazing in buildings shall be impact-resistant or protected with an impact resistant covering meeting the requirements of an approved impact-resisting standard or ASTM E 1996 and ASTM E 1886 referenced therein as follows:

1. Glazed openings located within 30 feet (9.1 m) of grade shall meet the requirements of the Large Missile Test of ASTM E 1996.
2. Glazed openings located more than 30 feet (9.1 m) above grade shall meet the provisions of the Small Missile Test of ASTM E 1996.

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**Exceptions:**

1. Wood structural panels with a minimum thickness of 7/16 inch (11.1 mm) and maximum panel span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings. Panels shall be precut so that they shall be attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be secured with attachment hardware provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with the provisions of ASCE 7. Attachment in accordance with Table 1609.1.2 is permitted for buildings with a mean roof height of 33 feet (10 058 mm) or less where wind speeds do not exceed 130 mph (57.2 m/s).
2. Glazing in Occupancy Category I as defined in Section 1604.5, including greenhouses that are occupied for growing plants on a production or reseach basis, without public access shall be permitted to be unprotected.
3. Glazing in Occupancy Category II, III, or IV buildings located over 60 feet (18 288 mm) above the ground or over 30 feet (9144 mm) above aggregate surface roofs located within 1,500 feet (458m) of the building shall be permitted to be unprotected.

**1609.1.2.1 Louvers.** Louvers protecting intake and exhaust ventilation ducts not assumed to be open that are located within 30 feet (9144 mm) of grade shall meet the requirements of an approved impact-resisting standard or the Large Missile Test of ASTM E 1996. openings.

**TABLE 1609.1.2  
WIND-BORNE DEBRIS PROTECTION FASTENING  
SCHEDULE FOR WOOD STRUCTURAL PANELS<sup>a,b,c,d</sup>**

FASTENER TYPE	FASTENER SPACING (inches)		
	Panel Span ≤ 4 feet	4 feet < Panel Span ≤ 6 feet	6 feet < Panel Span ≤ 8 feet
No. 6 screws	16	12	9
No. 8 screws	16	16	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 4.4 N,  
1 mile per hour = 0.44 m/s.

- a. This table is based on a maximum wind speed of 130 mph (58 m/s) and mean roof height of 33 feet (10 m) or less.
- b. Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners Shall be located a minimum of 1 inch from the edge of the panel.
- c. Fasteners shall be long enough to penetrate through the exterior wall covering a minimum of 1.75 inches into the wood wall framing; a minimum of 1.25 inches into concrete block or concrete; or

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- into steel framing by at least three threads. Fasteners shall be located a minimum of 2.5 inches from the edge of the concrete block or concrete.
- d. Where screws are attached to masonry or masonry/stucco, they shall be attached utilizing vibration-resistance anchors having a minimum withdrawal capacity of 490 pounds

**1609.2 Definitions.**

The following words and terms shall, for the purposes of Section 1609.6, have the meanings shown herein.

**HURRICANE-PRONE REGIONS.** Areas vulnerable to hurricanes defined as:

1. The U.S. Atlantic Ocean and Gulf of Mexico coasts where the basic wind speed is greater than 90 mph (39.6 m/s) and
2. Hawaii, Puerto Rico, Guam, Virgin Islands and American Samoa.

**WIND-BORNE DEBRIS REGION.**

Portions of hurricane-prone regions that are within one mile (1.6 km) of the coastal mean high water line where the basic wind speed is 110 mph (48 m/s) or greater; or portions of the hurricane-prone regions where the basic wind speed is 120 mph (53 m/s) or Hawaii.

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