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 \(\frac{1}{16}\) 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 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**

<table>
<thead>
<tr>
<th>FASTENER TYPE</th>
<th>Panel span (\leq 4) feet</th>
<th>Panel span (\leq 6) feet</th>
<th>Panel span (\leq 8) feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 8 wood-screw-based anchor with 2-inch embedment length</td>
<td>16</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>No. 10 wood-screw-based anchor with 2-inch embedment length</td>
<td>16</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>5/8-inch lag-screw-based anchor with 2-inch embedment length</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

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 \(\frac{V_{ult}}{2}\) 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, \(V_{nom}\), using Table R301.2.1.3.
### TABLE R301.2(1)

#### CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

<table>
<thead>
<tr>
<th>GROUND SNOW LOAD</th>
<th>WIND DESIGN</th>
<th>SEISMIC DESIGN CATEGORY</th>
<th>SUBJECT TO DAMAGE FROM</th>
<th>WINTER DESIGN TEMP</th>
<th>ICE BARRIER UNDERLAYMENT REQUIRED</th>
<th>FLOOD HAZARDS</th>
<th>AIR FREEZING INDEX</th>
<th>MEAN ANNUAL TEMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Bulletin 19-1</td>
<td>See Bulletin 19-1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Severe</td>
<td>26°F SNJ, 30°F NNJ</td>
<td>Moderate to Heavy</td>
<td>13°F</td>
</tr>
</tbody>
</table>

#### MANUAL J DESIGN CRITERIA

(see Table 1a from ACCA Manual J; fill in criteria from the closest municipality)

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Latitude</th>
<th>Winter heating</th>
<th>Summer cooling</th>
<th>Altitude correction factor</th>
<th>Indoor design temperature</th>
<th>Design temperature cooling</th>
<th>Heating temperature difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cooling temperature difference</th>
<th>Wind velocity heating</th>
<th>Wind velocity cooling</th>
<th>Coincident wet bulb</th>
<th>Daily range</th>
<th>Winter humidity</th>
<th>Summer humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

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. For SNJ, the jurisdiction shall fill in the frost line depth column with the minimum depth of footing for sandy soil. For NNJ, the jurisdiction shall fill in the frost line depth column with the minimum depth of footing for heavy soils.

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%-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 (LFPA). 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 and 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).