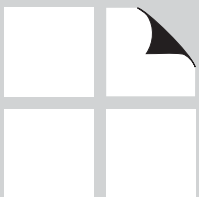
# PRESCRIPTIVE DESIGN

3


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## Table 3 Prescriptive Design Limitations

| | Attribute | Limitation | Reference Section | Figures |
|---|---|---|---|---|
| **BUILDING DIMENSIONS** | | | | |
| **Building** | Mean Roof Height (MRH) | 33' | 2.1.3.1 | 1.1 |
| | Number of Stories | 3 | 1.1.3.1a | - |
| | Building Length and Width | 80' | 1.1.3.1b | - |
| **FLOOR SYSTEMS** | | | | |
| **Lumber Joists** | Joist Span | 26' | 3.1.3.2a | - |
| | Joist Spacing | 24" o.c. | 3.1.3.2b | - |
| | Cantilevers - Supporting loadbearing walls[1] | d | 3.1.3.2c | 2.1a |
| | Setbacks - Loadbearing walls[1] | d | 3.1.3.2d | 2.1d |
| **Floor Diaphragm** | Vertical Floor Offset | $d_f$ | 3.1.3.2e | 2.1i |
| | Floor Diaphragm Aspect Ratio | Tables 3.16B and 3.16C | 3.1.3.2f | - |
| | Floor Diaphragm Openings | Lesser of 12' or 50% of Building Dimension | 3.1.3.2g | 2.1k |
| **WALL SYSTEMS** | | | | |
| **Wall Studs** | Loadbearing Wall Height | 10' | 3.1.3.3a | - |
| | Non-Loadbearing Wall Height | 20' | 3.1.3.3a | - |
| | Wall Stud Spacing | 24" o.c. | 3.1.3.3b | - |
| **Shear Walls** | Shear Wall Line Offset[1] | 4' | 3.1.3.3c | 2.1$\ell$, 3.1b |
| | Shear Wall Story Offset[1] | No offset unless per Exception | 3.1.3.3d | |
| | Shear Wall Segment Aspect Ratio | Table 3.17D | 3.1.3.3e | |
| **ROOF SYSTEMS** | | | | |
| **Lumber Rafters** | Rafter Span (Horizontal Projection)[2] | 26' | 3.1.3.4a | - |
| | Rafter Spacing | 24" o.c. | 3.1.3.4b | - |
| | Eave Overhang Length[1] | Lesser of 2' or rafter span/3 | 3.1.3.4c | 2.1f |
| | Roof Slope | 1.5:12 - 12:12 | 3.1.3.4d | - |
| **Rakes** | Rake Overhang Length[1] | Lesser of 2' or outlooker length/2 | 3.1.3.4c | 2.1g |
| **Roof Diaphragms** | Roof Diaphragm Aspect Ratio[1] | Tables 3.16A and 3.16C | 3.1.3.4e | - |

[1] See exceptions.

[2] For roof snow loads, tabulated spans are limited to 20 ft.

# 3.1 General Provisions

### 3.1.1 Prescriptive Requirements

The provisions in Chapter 3 establish a specific set of resistance requirements for buildings meeting the scope of this Manual (see 1.1). Tabular wind requirements are provided for buildings sited in exposure categories B and C.

### 3.1.2 Equivalent Materials and Systems

The provisions of this Chapter are not intended to preclude the use of other methods or materials of construction. When alternative methods or materials are used, design loads and capacities shall be determined from the provisions of Chapter 2.

### 3.1.3 Prescriptive Design Limitations

Wood-frame buildings designed in accordance with Chapter 3 of this Manual shall be subject to the limitations of this section (see Table 3). Structural elements not complying with this section shall be designed in accordance with accepted engineering practice in accordance with Chapter 2 or 1.1.1.1. Connections in Chapter 3 are based on wood framing with an assigned specific gravity, G, of 0.42 or greater (See *NDS Supplement*).

#### 3.1.3.1 Wind Exposure and Mean Roof Height

Tabulated wind requirements in Chapter 3 are provided for exposure categories B and C at a mean roof height of up to 33 feet. The building shall neither exceed three stories nor a mean roof height of 33 feet, measured from average grade to average roof elevation (see Figure 3.1a). Habitable attics shall be considered an additional floor for purposes of determining gravity and seismic loads.

#### 3.1.3.2 Floor Systems

**a. Framing Member Spans** Single spans of floor framing members shall not exceed 26 feet for lumber joists.

**b. Framing Member Spacings** Floor framing member spacings shall not exceed 24 inches on center for lumber joists, I-joists, and floor trusses.

**c. Cantilevers** Lumber floor joist cantilevers supporting loadbearing walls shall not exceed the depth, d, of the joists (see Figure 2.1a). Lumber floor joist cantilevers supporting non-loadbearing walls shall be limited to L/4 (see Figure 2.1b). Lumber joists shall be located directly over studs when used in cantilever conditions.

**EXCEPTION:** For roof live loads and ground snow loads less than or equal to 20 psf and 30 psf, respectively, lumber floor joist cantilevers supporting load-bearing walls shall not exceed one-eighth of the backspan when supporting only a roof load where the roof clear span does not exceed 28 feet.

**d. Setbacks** Setbacks of loadbearing walls on lumber floor joist systems shall not exceed the depth, d, of the joists (see Figure 2.1d). Lumber floor joists shall be located directly over studs when used in setback conditions supporting loadbearing walls.

**e. Vertical Floor Offsets** Vertical floor offsets shall be limited to the floor depth, $d_f$, (including floor framing members and floor sheathing), and the floor framing members on each side of the offset shall be lapped or tied together to provide a direct tension tie across the offset, and to transfer diaphragm shear in both orthogonal directions (see Figure 2.1i).

**f. Diaphragm Aspect Ratio** Floor diaphragm lengths shall be in accordance with Tables 3.16B and 3.16C.

**g. Diaphragm Openings** Floor diaphragm openings shall not exceed the lesser of 12 feet or 50% of the building dimension (see Figure 2.1k).

#### 3.1.3.3 Wall Systems

**a. Wall Heights** Loadbearing walls shall not exceed 10 feet in height. Non-loadbearing walls shall not exceed 20 feet in height.

**b. Wall Stud Spacings** Wall stud spacings shall not exceed 24 inches on center.

**c. Shear Wall Line Offsets** Offsets in a shear wall line within a story shall not exceed 4 feet (see Figure 2.1ℓ).

**EXCEPTION:** Where shear wall line offsets exceed these limits, the structure shall be designed as separate structures attached in the plane of the offset. Shear wall length for the shared wall shall be the sum of the lengths required for the shared wall of each attached structure. For the purpose of determining wind loads, the structure shall be permitted to be considered as a rectangular structure with perimeter dimensions which inscribe the total structure (see Figure 3.1b). Distribution of shear loads into shear wall lines shall be proportional to the diaphragm area tributary to each shear wall line or by other accepted engineering practice.

**d. Shear Wall Story Offsets** Upper story shear wall segments shall not be offset in-plane or out-of-plane from lower story shear wall segments.

**EXCEPTION:** Shear wall segments shall be permitted to be offset out-of-plane (see Figure 3.1c) from the story below by a maximum distance equal to the depth, d, of the floor joists where all of the following conditions are met:

1. Upper and lower story shear wall segments are attached to the floor diaphragm through wall plate to blocking connections and wall plate to band joist connections in accordance with Table 3.1.
2. Floor diaphragm wood structural panel sheathing is nailed to blocking and band joists at 6 inches on center in accordance with the edge nail spacing requirements of Table 3.1.
3. Allowable unit shear capacity for the shear wall above does not exceed 436 plf for wind or 239 plf for seismic in accordance with Table 3.17D.
4. Floor joists supporting the shear wall are nominal 2x8 or larger, tripled at ends of shear walls, and provide support for loads from roof and ceiling only.
5. Continuous load path is provided for uplift in accordance with 3.2.2 and overturning in accordance with Section 3.2.4.

**e. Shear Wall Aspect Ratio** Shear wall aspect ratios shall not exceed the limits in Table 3.17D.

**f. Shear Wall Orientation** Shear wall lines shall be oriented to resist loads in two orthogonal directions.

**g. Load Transfer** Band joists, blocking, or other methods to transfer roof, wall, and/or floor loads from upper stories shall be installed between floor framing members for 2 and 3 story structures (see Figures 3.4d and 3.5a).

#### 3.1.3.4 Roof Systems

**a. Framing Spans** Single spans (horizontal projection) of roof framing members shall not exceed 26 feet for lumber rafters. The total roof span shall not exceed 36 feet.

**b. Framing Spacings** Roof framing member spacings shall not exceed 24 inches on center for lumber rafters, I-joists, and roof trusses.

**c. Rafter Overhang Lengths** Rafter overhang lengths shall not exceed the lesser of one-third of the rafter span or 2 feet (see Figure 2.1f).

**d. Rake Overhang Lengths** Rake overhangs using outlookers shall not exceed the lesser of one-half of the outlooker length or 2 feet (see Figure 2.1g). Rake overhangs using lookout blocks shall not exceed 9 inches (see Figure 2.1h).

**e. Slope** Roof slope shall not exceed 12:12.

**f. Diaphragm Aspect Ratio** Roof diaphragm lengths lengths shall be in accordance with Tables 3.16A and 3.16C.

### 3.1.4 Interpolation

Tabulated values in this Chapter shall be permitted to be interpolated unless otherwise noted in the applicable table footnotes.

## 3.2 Connections

### 3.2.1 Lateral Framing and Shear Connections

#### 3.2.1.1 Roof Assembly

Roof framing connections shall be in accordance with the requirements of Table 3.1.

#### 3.2.1.2 Roof Assembly to Wall Assembly

Lateral framing and shear connections for rafter, ceiling joist, or truss to top plate shall be in accordance with the requirements of Table 3.4. Prescriptive solutions are provided for lateral framing and shear connections in Table 3.4A.

#### 3.2.1.3 Wall Assembly

Lateral framing connections for top and bottom plate to wall stud shall be in accordance with the requirements of Table 3.5. Prescriptive solutions are provided for lateral framing connections in 3.5A. Other wall assembly lateral framing and shear connections shall be in accordance with the requirements of Table 3.1.

#### 3.2.1.4 Wall Assembly to Floor Assembly

Lateral framing and shear connections for bottom plate to floor assembly shall be in accordance with the requirements of Table 3.1.

#### 3.2.1.5 Floor Assembly

Floor framing connections shall be in accordance with

the requirements of Table 3.1.

#### 3.2.1.6 Floor Assembly to Wall Assembly or Sill Plate

Lateral framing and shear connections for floor assembly to sill, top plate, or girder shall be in accordance with the requirements of Table 3.1.

#### 3.2.1.7 Wall Assembly or Sill Plate to Foundation

Sill plates or wall bottom plates shall be anchored to the foundation system to resist lateral and shear loads from wind in accordance with the requirements of Table 3.2. Prescriptive solutions are provided for sill plate to foundation in Table 3.2A, and for bottom plate to foundation in Table 3.2B. Sill plates or wall bottom plates shall be anchored to the foundation system to resist seismic shear loads in accordance with the requirements of Table 3.3. Prescriptive solutions are provided for sill or bottom plate to foundation in Table 3.3A. A minimum of one anchor bolt shall be provided within 6 to 12 inches of each end of each plate. Anchor bolts shall have a minimum embedment of 7 inches in concrete foundations and slabs-on-grade or 7 inches in masonry block foundations when resisting lateral and shear loads only (see Figures 3.2a-c). Anchor bolts shall be located within 12 inches of corners and at spacings specified in Tables 3.2A-B or Table 3.3A, but not exceeding 6 feet on center. Sill plates or bottom plates shall have full bearing on the foundation system.

### 3.2.2 Uplift Connections

#### 3.2.2.1 Roof Assembly to Wall Assembly

Rafter or truss to wall uplift connections shall be in accordance with the requirements of Section 3.2.2.1. Prescriptive solutions using uplift straps are provided in Table A-3.4. Where rafters or trusses are not attached directly to studs, rafters or trusses shall be attached to the wall top plate and the wall top plate shall be attached to the wall stud with uplift connections in accordance with Table 3.4. Roof to top plate connections shall be on the same side of the wall as top plate to stud connections unless other methods are used to prevent twisting of the top plate due to eccentric loading (see Figure 3.2j-k). Wood structural panels shall be permitted to resist wall top plate to wall stud uplift when designed in accordance with 3.2.3. Prescriptive solutions to resist wind uplift are provided in Table 3.4B.

#### 3.2.2.2 Wall Assembly to Wall Assembly

Story to story uplift connections from upper story wall stud to lower story wall stud shall be in accordance with the requirements of Table 3.4. Prescriptive solutions using uplift straps are provided in Table A-3.4. Where upper story wall studs are not attached directly to lower story wall studs, the studs shall be attached to a common member in the floor assembly with uplift connections in accordance with Table 3.4. Wood structural panels shall be permitted to resist wall plate to wall stud uplift when designed in accordance with 3.2.3. Prescriptive solutions to resist wind uplift are provided in Table 3.4B.

#### 3.2.2.3 Wall Assembly to Foundation

First floor wall studs shall be connected to the foundation, sill plate, or bottom plate in accordance with the requirements of Table 3.2. Prescriptive solutions for stud to foundation, sill plate, or bottom plate using uplift straps are provided in Table A-3.4 (see Figures 3.2a-e).

Steel connectors used to resist uplift shall be a minimum of a 1-1/4″ x 20 gage ASTM A653 Grade 33 steel strap and have a minimum embedment of 7 inches in concrete foundations and slabs-on-grade, 15 inches in masonry block foundations, or be lapped under the plate and nailed in accordance with the steel connector requirements (see Figures 3.2a-c). Where the steel strap is lapped under the bottom plate, 3 inch square washers shall be used on the anchor bolts and anchor bolt spacings shall not exceed the requirements specified in Table 3.2C. If steel connectors that only fasten to one side of the bottom plate are used, the square washer shall extend to within ½ inch of the edge of the plate to which the connector is nailed. Steel straps embedded in or in contact with slab-on-grade or masonry block foundations shall be hot-dipped galvanized after fabrication, or manufactured from G185 or Z450 galvanized steel.

Wood structural panels shall be permitted to resist wall stud to foundation, sill plate, or bottom plate uplift when designed in accordance with 3.2.3. Prescriptive solutions to resist wind uplift are provided in Table 3.4B. Where wood structural panels are used to resist uplift, bottom plates or sill plates shall be anchored in accordance with 3.2.3.6.

### 3.2.3 Wood Structural Panels Resisting Uplift

Wood structural panels shall be permitted to be used to resist uplift alone or simultaneously to resist uplift and shear from wind forces.

#### 3.2.3.1 Nailing

Nails in any single row shall not be spaced closer than 3 inches on center.

#### 3.2.3.2 Panels

Panels shall have a minimum thickness of 7/16 inch and

shall be installed with the strength axis parallel to the studs.

### 3.2.3.3 Horizontal Joints

All horizontal joints shall occur over common framing members or common blocking and shall meet all other requirements of 3.4.4.2.

### 3.2.3.4 Openings

Where windows and doors interrupt wood structural panel sheathing or siding, framing anchors or connectors shall be provided to resist and transfer the appropriate uplift loads around the opening and into the foundation.

### 3.2.3.5 Sheathing Extending to Top Plate

The top edge of the wood structural panel shall be attached to the upper top plate. Nail row, end spacing, and edge spacing shall be as shown in Figure 3.2f. Roof or upper level uplift connectors shall be on the same side of the wall as the sheathing unless other methods are used to prevent twisting of the top plate due to eccentric loading (see Figure 3.2j-k).

### 3.2.3.6 Sheathing Extending to Bottom Plate or Sill Plate

The bottom edge of the wood structural panel shall extend to and be attached to the bottom plate or sill plate as shown in Figure 3.2f. Anchorage of bottom plates or sill plates to the foundation shall be designed to resist the combined uplift and shear forces developed in the wall. Anchors shall be spaced at 16 inches on center or less.

a. Where anchor bolts are used, a minimum 0.229″ x 3″ x 3″ steel plate washer shall be used at each anchor bolt location. The edge of the plate washer shall extend to within ½ inch of the edge of the bottom plate on the sheathed side.
b. Where other anchoring devices are used to anchor the wall to the foundation, they shall be installed on the same side of the wall as the sheathing unless other approved methods are used.

### 3.2.3.7 Sheathing Splices

a. In multi-story applications where the upper story and lower story sheathing adjoin over a common horizontal framing member, the nail spacing shall be not less than 3 inches on center for a single row and not less than 6 inches on center for a double row in Table 3.4B (see Figure 3.2g).
b. In single or multi-story applications where horizontal joints in the sheathing occur over blocking between studs, nailing of the sheathing to the studs above and below the joint shall be designed to transfer the uplift across the joint using provisions of *SDPWS* 4.4.1.7(2) (see Figure 3.2h). Blocking shall be in accordance with 3.2.3.3 for shear transfer.

**Exception:** Horizontal blocking and sheathing tension splices placed between studs and backing the horizontal joint shall be permitted to be used to resist both uplift and shear at sheathing splices over studs provided the following conditions are met (see Figure 3.2i):

a. sheathing tension splices shall be made from the same thickness and grade as the shear wall sheathing.
b. edges of sheathing shall be nailed to sheathing tension splices using the same nail size and spacing as the sheathing or siding nails at the bottom plate.

## 3.2.4 Overturning Resistance

### 3.2.4.1 Hold-downs

Hold-downs shall be installed at the end of each shear wall in accordance with 3.4.4.2.3 (see Figures 3.8a-b). A continuous load path from the hold-down to the foundation shall be maintained. Where a hold-down resists the overturning load from the story or stories above, the hold-down shall be sized for the required hold-down tension capacity at its level plus the required hold-down tension capacity of the story or stories above. For walls sheathed with materials other than those specified in 3.4.4.2, hold-down tension capacity at each level shall equal the tabulated shear capacity in Table 3.17D times the wall height.

## 3.2.5 Sheathing and Cladding Attachment

### 3.2.5.1 Roof Sheathing

Roof sheathing attachment shall be in accordance with the minimum nailing requirements specified in Table 3.10. A prescriptive solution is provided for 7/16" nominal thickness roof sheathing in Table 3.10A.

### 3.2.5.2 Wall Sheathing

Wall sheathing attachment shall be in accordance with the minimum nailing requirements specified in Table 3.11.

### 3.2.5.3 Floor Sheathing

Floor sheathing shall be attached with a minimum of

8d common nails spaced at a maximum of 6 inches on center at panel edges and 12 inches on center in the panel field.

#### 3.2.5.4 Roof Cladding

Roof cladding shall be attached in accordance with the manufacturer's recommendations.

#### 3.2.5.5 Wall Cladding

Wall cladding shall be attached in accordance with the minimum nailing requirements in Table 3.11 or comply with the manufacturer's recommendations.

### 3.2.6 Special Connections

#### 3.2.6.1 Ridge Connection Requirements

Ridge connections shall be in accordance with the requirements given in Table 3.6. Prescriptive solutions for ridge straps are provided in Table A-3.6. Where ridge straps are used, they shall attach to opposing rafters.

> **EXCEPTION:** Ridge straps are not required when collar ties (collar beams) of nominal 1x6 or 2x4 lumber are located in the upper third of the attic space and attached to rafters in accordance with Table A-3.6.

#### 3.2.6.2 Jack Rafters

Jack rafters shall be attached to the wall assembly in accordance with 3.2.2.1 and attached to hip beams in accordance with Table 3.4.

#### 3.2.6.3 Non-Loadbearing Wall Assemblies

Rake outlooker overhang to wall, wall to wall, and wall to foundation connections shall be in accordance with the requirements given in Table 3.4C. Walls which do not support the roof assembly and are attached in accordance with 3.2.1 need no additional uplift connections.

#### 3.2.6.4 Connections around Wall Openings

**3.2.6.4.1 Header and/or Girder to Stud Connections** Header and/or girder to stud connections shall be in accordance with the requirements given in Table 3.7. Window sill plate to stud connections shall be in accordance with the requirements given in Table 3.8.

**3.2.6.4.2 Top and Bottom Plate to Full Height Studs** When the number of full height studs required at each end of a header are selected from Table 3.23C, each stud shall be connected in accordance with the requirements given in Table 3.5. Prescriptive solutions for top and bottom plate to stud connections are provided in Table 3.5A.

> **EXCEPTION:** When the number of full height studs required at each end of a header are selected from Table 3.23D, the capacity of the connection of the top or bottom plate to each full height stud shall be equal to the unit lateral load, w (plf), given in Table 3.5 times half of the header span, L/2 (ft), divided by the required number of full height studs, NFH, selected from Table 3.23D.
>
> Top or Bottom Plate to Each Full Height Stud Connection = w * (L/2) / NFH

## 3.3 Floor Systems

### 3.3.1 Lumber Joist Systems

#### 3.3.1.1 Floor Joists

Floor joists shall be in accordance with the maximum spans for common species and grades of lumber floor joists specified in Tables 3.18A-B.

**3.3.1.1.1 Notching and Boring** Notches in the top or bottom edge of solid-sawn joists shall not be located in the middle one-third of the joist span. Notches in the outer thirds of the span shall not exceed one-sixth of the actual joist depth, and shall not be longer than one-third of the depth of the member. Where notches are made at the supports, they shall not exceed one-fourth the actual joist depth. Bored holes are limited in diameter to one-third the actual joist depth and the edge of the hole shall not be closer than 2 inches to the top or bottom edge of the joist. Bored holes shall not be located closer than 2 inches to a notch (see Figure 3.3a).

#### 3.3.1.2 Bearing

Joists shall bear directly on beams, girders, ledgers, or loadbearing walls or be supported by hangers. Joist bearing shall not be less than 1-1/2 inches on wood or metal or 3 inches on masonry (see Figures 3.4a-e). Beams and girders shall bear on loadbearing walls, piles, concrete or masonry foundations, or beam hangers (see Figure 3.4f).

#### 3.3.1.3 End Restraint

Restraint against twisting shall be provided at the end of each joist by fastening to a rim, band joist, header, or other member or by using full-height blocking between floor joist ends. Fasteners for end restraint shall be provided in accordance with Table 3.1 (see Figures 3.4a-e).

#### 3.3.1.4 Lateral Stability

The following rules shall be applied to provide lateral restraint to prevent rotation or lateral displacement. If the ratio of depth to breadth, d/b, based on nominal dimensions is:

a. **d/b ≤ 2;** no lateral support shall be required.
b. **2 < d/b ≤ 4;** the ends shall be held in position, as by full depth solid blocking, bridging, hangers, nailing or bolting to other framing members, or other acceptable means.
c. **4 < d/b ≤ 5;** the compression edge of the member shall be held in line for its entire length to prevent lateral displacement, as by adequate sheathing or subflooring, and ends at point of bearing shall be held in position to prevent rotation and/or lateral displacement.
d. **5 < d/b ≤ 6;** bridging, full depth solid blocking or diagonal cross bracing shall be installed at intervals not exceeding 8 feet, the compression edge of the member shall be held in line as by adequate sheathing or subflooring, and ends at point of bearing shall be held in position to prevent rotation and/or lateral displacement.
e. **6 < d/b ≤ 7;** both edges of the member shall be held in line for their entire length and ends at points of bearing shall be held in position to prevent rotation and/or lateral displacement.

If a bending member is subjected to both flexure and axial compression, the depth to breadth ratio shall be permitted to be as much as 5 to 1 if one edge is firmly held in line. If under all combinations of load, the unbraced edge of the member is in tension, the depth to breadth ratio shall be permitted to be no more than 6 to 1.

### 3.3.1.5 Single or Continuous Floor Joists

**3.3.1.5.1 Single or Continuous Floor Joists Supporting Loadbearing Walls** Loadbearing walls parallel to joists shall be directly supported by beams, girders, or other loadbearing walls. Loadbearing walls perpendicular to joists shall not be offset from supporting girders, beams, or other loadbearing walls by more than the depth of the joists (see Figures 2.1d and 3.5a).

**3.3.1.5.2 Single or Continuous Floor Joists Supporting Non-Loadbearing Walls** Where non-loadbearing walls are parallel to floor joists, the joist supporting the non-loadbearing wall shall be doubled (see Figure 3.5b).

> **EXCEPTION:** When the non-loadbearing wall is located between two floor joists, the floor joists need not be doubled. Solid blocking shall be installed at intervals not exceeding 32 inches on center to transfer the wall load to the supporting joists (see Figure 3.5c).

**3.3.1.5.3 Single or Continuous Floor Joists Supporting Concentrated Loads** Where concentrated loads exceeding 300 pounds must be supported by floor joists, the joist supporting the load shall be doubled (see Figure 3.5d).

### 3.3.1.6 Cantilevered Floor Joists

**3.3.1.6.1 Cantilevered Floor Joists Supporting Loadbearing Walls** Overhang lengths of cantilevered floor joists supporting a loadbearing wall at the end of the cantilever shall be limited to the depth of the joists (see Figure 2.1a).

> **EXCEPTION:** For roof live loads and ground snow loads less than or equal to 20 psf and 30 psf, respectively, cantilevers shall not exceed one-eighth of the joist span for lumber joists supporting only a roof with a clear span of 28 feet or less. Lumber joists shall be located directly over studs when used in cantilever conditions supporting loadbearing walls (see Figure 2.1a).

**3.3.1.6.2 Cantilevered Floor Joists Supporting Non-Loadbearing Walls** Overhang lengths of cantilevered floor joists supporting a non-loadbearing wall at the end of the cantilever shall not exceed one-fourth of the joist span (see Figure 2.1b).

### 3.3.1.7 Floor Diaphragm Openings

Trimmers and headers shall be doubled when the header span exceeds 4 feet. Headers more than 6 feet in length shall be supported by joist hangers or framing anchors unless they bear on a partition, beam, or wall. Tail joists which exceed 12 feet in length shall be supported on framing anchors or on ledger strips not less than nominal 2x2 inches (see Figures 3.6a-b). Nailing requirements are given in Table 3.1.

## 3.3.2 Wood I-Joist Systems

Wood I-joist systems shall meet the requirements of 2.3.2.

## 3.3.3 Wood Floor Truss Systems

Wood floor truss systems shall meet the requirements of 2.3.3. See Table 3.19 for representative metal plate connected wood floor truss span tables. Actual design spans will vary by truss manufacturer as a result of specific design conditions.

## 3.3.4 Floor Sheathing

### 3.3.4.1 Sheathing Spans

Floor sheathing spans shall not exceed the provisions of Table 3.14.

#### 3.3.4.2 Sheathing Edge Support

Edges of floor sheathing shall have approved tongue-and-groove joints or shall be supported with blocking, unless ¼ inch minimum thickness underlayment or 1½ inches of approved cellular or lightweight concrete is installed, or unless the finish floor is of ¾ inch wood strip.

### 3.3.5 Floor Diaphragm Bracing

For 3-second gust wind speeds greater than 130 mph (See Figure 1.1), blocking and connections shall be provided at panel edges perpendicular to floor framing members in the first two bays of framing and shall be spaced at a maximum of 4 feet on center. Nailing requirements are given in Table 3.1 (see Figure 3.7b).



## 3.4 Wall Systems

### 3.4.1 Exterior Walls

#### 3.4.1.1 Wood Studs

Wall studs shall be in accordance with the maximum spans for common species and grades of wall studs specified in Tables 3.20A-B and spaced in accordance with Table 3.20C. Exterior loadbearing studs shall be limited to a height of 10 feet or less between horizontal supports as specified in Table 3.20C. Exterior non-loadbearing studs shall be limited to a height of 14 feet or less for 2x4 studs and 20 feet or less for 2x6 and 2x8 studs in accordance with Table 3.20C.

**3.4.1.1.1 Notching and Boring** Notches in either edge of studs shall not be located in the middle one-third of the stud length. Notches in the outer thirds of the stud length shall not exceed 25% of the actual stud depth. Bored holes shall not exceed 40% of the actual stud depth and the edge of the hole shall not be closer than 5/8 inch to the edge of the stud (see Figure 3.3b). Notches and holes shall not occur in the same cross-section.

> **EXCEPTION:** Bored holes shall not exceed 60% of the actual stud depth when studs are doubled.

**3.4.1.1.2 Stud Continuity** Studs shall be continuous between horizontal supports, including but not limited to: girders, floor diaphragm assemblies, ceiling diaphragm assemblies, and roof diaphragm assemblies. When attic floor diaphragm or ceiling diaphragm assemblies are used to brace gable endwalls, the sheathing and fasteners shall be as specified in Table 3.15. The framing and connections shall be capable of transferring the loads into the ceiling or attic floor diaphragm (see Figures 3.7a-b).

**3.4.1.1.3 Corners** A minimum of three studs shall be provided at each corner of an exterior wall (see Figures 3.8a-b).

> **EXCEPTION:** Reduced stud requirements shall be permitted provided shear walls are not continuous to corners. Framing must be capable of transferring axial tension and compression loads from above and providing adequate backing for the attachment of sheathing and cladding materials.

#### 3.4.1.2 Top Plates

Double top plates shall be provided at the top of all exterior stud walls. The double plates shall overlap at corners and at intersections with other exterior or interior loadbearing walls (see Figure 3.8d). Double top plates shall be lap spliced with end joints offset in accordance with the minimum requirements given in Table 3.21.

#### 3.4.1.3 Bottom Plates

Bottom plates shall not be less than 2 inch nominal thickness and not less than the width of the wall studs. Studs shall have full bearing on the bottom plate.

#### 3.4.1.4 Wall Openings

Headers shall be provided over all exterior wall openings. Headers shall be supported by wall studs, jack studs, hangers, or framing anchors (see Figures 3.9a-b).

**3.4.1.4.1 Headers** Maximum spans for common species of lumber headers and structural glued laminated timber beams used in exterior loadbearing walls shall not exceed the lesser of the applicable spans given in Tables 3.22A-E and Table 3.23A. Maximum spans for common species of lumber headers used in exterior non-loadbearing walls shall not exceed spans given in Table 3.23B.

**3.4.1.4.2 Full Height Studs** Full height studs shall meet the same requirements as exterior wall studs selected in 3.4.1.1 (see Figures 3.9a-b). The minimum number of full height studs at each end of the header shall not be less than half the number of studs replaced by the opening, in accordance with Table 3.23C.

> **EXCEPTION:** The minimum number of full height studs at each end of the header shall be permitted to be reduced in accordance with Table 3.23D. The capacity of the connection of the top

or bottom plate to each full height stud shall be equal to the unit lateral load, w (plf) given in Table 3.5 times half of the header span, L/2 (ft.), divided by the required number of full height studs, NFH, selected from Table 3.23D.

Top or Bottom Plate to Each Full Height Stud Connection = w * (L/2) / NFH

**3.4.1.4.3 Jack Studs** Jack studs shall be at least Stud grade lumber. The minimum number of jack studs supporting each end of a header shall not be less than jack stud requirements given in Table 3.22F (see Figures 3.9a-b). Full height studs selected in accordance with 3.4.1.4.2 shall be permitted to replace an equivalent number of jack studs, when adequate gravity connections are provided.

**3.4.1.4.4 Window Sill Plates** Maximum spans for window sill plates used in exterior walls shall not exceed the spans given in Table 3.23B.

## 3.4.2 Interior Loadbearing Partitions

### 3.4.2.1 Wood Studs

Interior loadbearing studs shall be at least Stud grade lumber.

**EXCEPTION:** Interior loadbearing studs supporting only a roof shall be at least Utility grade lumber.

**3.4.2.1.1 Notching and Boring** Notches in either edge of studs shall not be located in the middle one-third of the stud length. Notches in the outer thirds of the stud length shall not exceed 25% of the actual stud depth. Bored holes in interior loadbearing studs shall not exceed 40% of the actual stud depth and shall not be closer than 5/8 inch to the edge. Notches and holes shall not occur in the same cross-section (see Figure 3.3b).

**EXCEPTION:** Bored holes shall not exceed 60% of the actual stud depth when studs are doubled.

**3.4.2.1.2 Stud Continuity** Studs shall be continuous between horizontal supports, including but not limited to: girders, floor diaphragm assemblies, ceiling diaphragm assemblies, and roof diaphragm assemblies.

### 3.4.2.2 Top Plates

Double top plates shall be provided at the top of all interior loadbearing partition walls. The double plates shall overlap at corners and at intersections with other exterior or interior loadbearing walls (see Figure 3.8d).

### 3.4.2.3 Bottom Plates

Bottom plates shall not be less than 2 inch nominal thickness and not less than the width of the wall studs. Studs shall have full bearing on the bottom plate.

### 3.4.2.4 Wall Openings

Headers shall be provided over all interior loadbearing wall openings. Headers shall be supported by wall studs, jack studs, joist hangers, or framing anchors.

**3.4.2.4.1 Headers** Maximum spans for common species of lumber headers and glued laminated beams are given in Tables 3.24A-B.

**3.4.2.4.2 Studs Supporting Header Beams** Jack studs shall be at least Stud grade lumber. The minimum number of jack studs supporting each end of a header shall not be less than jack stud requirements given in Table 3.24C (see Figures 3.9a-b). An equivalent number of full height studs shall be permitted to replace jack studs, when adequate gravity connections are provided.

## 3.4.3 Interior Non-Loadbearing Partitions

### 3.4.3.1 Wood Studs

Interior non-loadbearing studs shall be at least Utility grade lumber.

**3.4.3.1.1 Notching and Boring** Notches in studs shall not exceed 40% of the stud depth. Bored holes shall not exceed 60% of the stud depth and shall not be closer than 5/8 inch to the edge. Notches and holes shall not occur in the same cross-section.

### 3.4.3.2 Top Plates

Single or double top plates shall be provided at the top of all stud walls.

### 3.4.3.3 Bottom Plates

Bottom plates shall not be less than 2 inch nominal thickness and not less than the width of the wall studs. Studs shall have full bearing on the bottom plate.

## 3.4.4 Wall Sheathing

### 3.4.4.1 Sheathing and Cladding

Exterior wall sheathing shall be in accordance with the minimum requirements specified in Table 3.13A. Exterior wall cladding shall be in accordance with the minimum requirements specified in Table 3.13B.

### 3.4.4.2 Exterior Shear Walls

**a. Wind Loads** Segmented shear walls shall be in accordance with the full height sheathing requirements

specified in Table 3.17A. Tabulated values assume wall studs are spaced at a maximum of 16 inches on center, are sheathed with 3/8 inch wood structural panels on the exterior attached with 8d common nails at 6 inches on center at panel edges and 12 inches on center in the field, and 1/2 inch gypsum wallboard on the interior attached with 5d cooler nails at 7 inches on center at panel edges and 10 inches on center in the field. Exterior sheathing shall be continuous from the bottom plate to the upper top plate, with all panel edges over framing. For other sheathing materials or sheathing configurations see 3.4.4.2.1.

**b. Seismic Loads** Segmented shear walls shall be in accordance with the full height sheathing requirements specified in Table 3.17C. Tabulated values assume wall studs are spaced at a maximum of 16 inches on center and are sheathed with 3/8 inch wood structural panels on the exterior attached with 8d common nails at 6 inches on center at panel edges and 12 inches on center in the field. Exterior sheathing shall be continuous from the bottom plate to the upper top plate, with all panel edges over framing. For other sheathing materials or sheathing configurations see 3.4.4.2.1.

**c. Interior Shear Walls** Where an interior shear wall is used, the structure shall be designed as separate structures attached in the plane of the interior shear wall. Shear wall length of the shared wall (interior shear wall) shall be the sum of the lengths required for the shear wall of each attached structure.

**3.4.4.2.1 Sheathing Type Adjustments** When other sheathing material or nailing patterns are used, the length requirements in Tables 3.17A and 3.17C shall be multiplied by the appropriate sheathing type adjustment factor in Table 3.17D.

**3.4.4.2.2 Perforated Shear Wall Adjustments** When perforated shear walls are used, the shear wall length requirements in Tables 3.17A and 3.17C shall be multiplied by the appropriate full-height sheathing length adjustment factors in Table 3.17E. Combinations of identically sheathed segmented and perforated walls shall be permitted.

**3.4.4.2.3 Hold-downs** Hold-downs with a capacity in accordance with Table 3.17F, divided by the appropriate sheathing type adjustment factor in Table 3.17D, are required at the end of each shear wall segment or at each end of a perforated shear wall. Where full height shear wall segments meet at a corner, a single hold-down shall be permitted to be used to resist the overturning forces in both directions when the corner framing in the adjoining walls is fastened together to transfer the uplift load (see Figures 3.8a-b).

# 3.5 Roof Systems

## 3.5.1 Lumber Rafter Systems

### 3.5.1.1 Rafters

Rafters shall be in accordance with the maximum spans (horizontal projection) for common species of lumber rafters specified in Table 3.26A-C for live loads, 3.26D-L for snow loads, and 3.26M for wind loads. The span of each rafter shall be measured along the horizontal projection of the rafter.

**3.5.1.1.1 Jack Rafters** Jack rafters shall be sized in accordance with 3.5.1.1.

**3.5.1.1.2 Rafter Overhangs** Rafter overhangs shall not exceed the lesser of one-third of the rafter span or 2 feet (see Figure 2.1f).

**3.5.1.1.3 Rake Overhangs** Rake overhang outlookers shall use continuous 2x4 members connected in accordance with 3.2.6.3. Rake overhangs shall not exceed the lesser of one-half of the outlooker length or 2 feet (see Table 3.4C). Rake overhangs using lookout blocks shall not exceed 9 inches (see Figure 2.1h).

**3.5.1.1.4 Notching and Boring** Notches in the top or bottom edge of solid-sawn rafters shall not be cut in the middle one-third of the rafter span. Notches in the outer thirds of the span shall not exceed one-sixth of the actual rafter depth. Where notches are made at supports, they shall not exceed one-fourth the actual rafter depth. Bored holes are limited in diameter to one-third the actual rafter depth and the edge of the hole shall not be closer than 2 inches to the top or bottom edges (see Figure 3.3a).

### 3.5.1.2 Bearing

Rafters shall bear directly on beams, girders, ledgers, or loadbearing walls or be supported by approved joist hangers or framing anchors. Rafter bearing shall not be less than 1½ inches on wood, metal, or masonry.

### 3.5.1.3 End Restraint

Where the nominal depth to thickness ratio of a solid-sawn rafter exceeds 3, restraint against twisting shall be provided at the end of each rafter by fastening to a rim board or by using full-height blocking between rafter ends. Fasteners for end restraint shall be provided in accordance with Table 3.1.

**EXCEPTION:** Where ceiling joists are attached directly to rafters, the combined bearing thickness of the ceiling joist and rafter shall be used to determine the depth to thickness ratio.

#### 3.5.1.4 Ridge Beams

Ridge beams shall be installed at roof peaks. Ridge beams shall be in accordance with the maximum spans for common species of lumber beams and structural glued laminated timber beams specified in Table 3.29. Rafters shall bear directly on the ridge beam or be supported by hangers or framing anchors (see Figure 3.10a). Ceiling joists or rafter ties shall not be required where a ridge beam is provided.

**EXCEPTION:** A ridge board shall be permitted to be substituted for a ridge beam when roof slopes equal or exceed 3 in 12. The ridge board shall be at least 1 inch nominal in thickness and not less than the depth of the cut end of the rafter. The rafters shall be placed directly opposite each other. Ceiling joists or rafter ties shall be used to provide a continuous tie between exterior walls. Ceiling joist/rafter tie to rafter connections shall be in accordance with Tables 3.9. Prescriptive solutions for ceiling joist/rafter tie to rafter connections are provided in Table 3.9A (see Figures 3.10b-c).

#### 3.5.1.5 Hip and Valley Beams

Hip and valley beams shall be in accordance with the maximum spans (horizontal projection) for common species of lumber hip and valley beams specified in Table 3.28, respectively (see Figures 3.12a-c).

#### 3.5.1.6 Ceiling Joists

Ceiling joists shall be in accordance with the maximum spans for common species of solid sawn ceiling joists specified in Tables 3.25A-B, and shall be braced in accordance with 3.3.1.4.

#### 3.5.1.7 Open Ceilings

When ceiling joists and roof ties are omitted and the rafters are used to create an open (cathedral) ceiling, rafter ends shall be supported on bearing walls, headers, or ridge beams. Rafters shall be attached to the support at each end in accordance with 3.2.

#### 3.5.1.8 Roof Openings

Trimmers and headers shall be doubled when the header span exceeds 4 feet. Headers more than 6 feet in length shall be supported at the ends by rafter hangers or framing anchors unless they bear on a partition, beam, or wall. Tail rafters which exceed 12 feet in length shall be supported on framing anchors (see Figures 3.11a-c). Nailing requirements are given in Table 3.1.

### 3.5.2 Wood I-Joist Roof Systems

Wood I-joist rafter systems shall meet the requirements of 2.5.2.

### 3.5.3 Wood Roof Truss Systems

Wood roof truss systems shall meet the requirements of 2.5.3. See Table 3.27 for representative metal plate connected wood roof truss span tables. Actual design spans will vary by truss manufacturer as a result of specific design conditions.

### 3.5.4 Roof Sheathing

#### 3.5.4.1 Sheathing

Roof sheathing shall be in accordance with the minimum requirements of Tables 3.12A and 3.12B.

#### 3.5.4.2 Sheathing Edge Support

Edges of all 3/8-inch wood structural panel roof sheathing, or 7/16-inch wood structural panel roof sheathing supported at 24 inches on center, shall be supported with blocking or edge clips.

### 3.5.5 Roof Diaphragm Bracing

For 3-second gust wind speeds greater than 130 mph (See Figure 1.1) blocking and connections shall be provided, at panel edges perpendicular to roof framing members in the first two bays of framing, and shall be spaced at a maximum of 4 feet on center. Nailing requirements are given in Table 3.1 (see Figure 3.7b).

**EXCEPTION:** When an attic floor or ceiling diaphragm is used to brace the gable endwall or when a hip roof system is used, additional roof diaphragm blocking is not required.

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**Figure 3.1a Determining the Mean Roof Height (MRH) and Top Plate to Roof Ridge Height ($h_R$)**
(Mean Roof Height Shall Not Exceed 33')

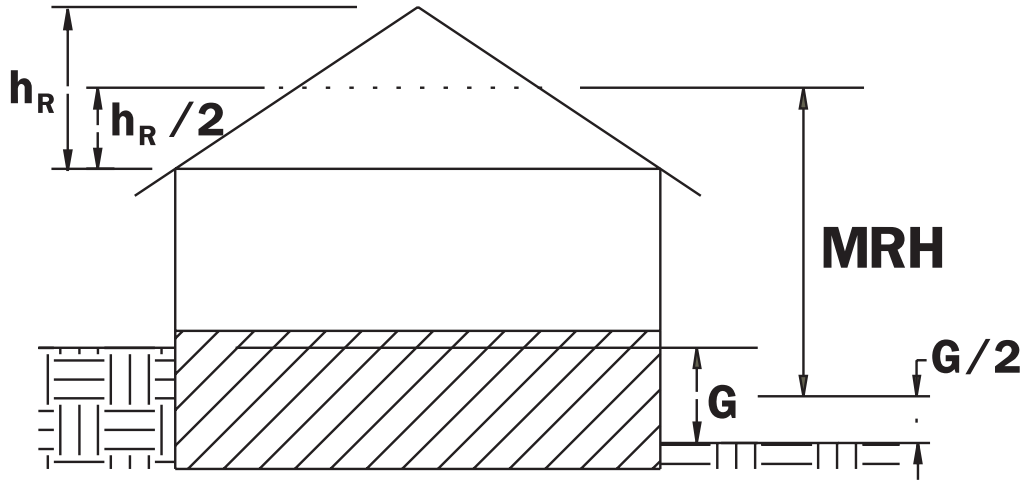
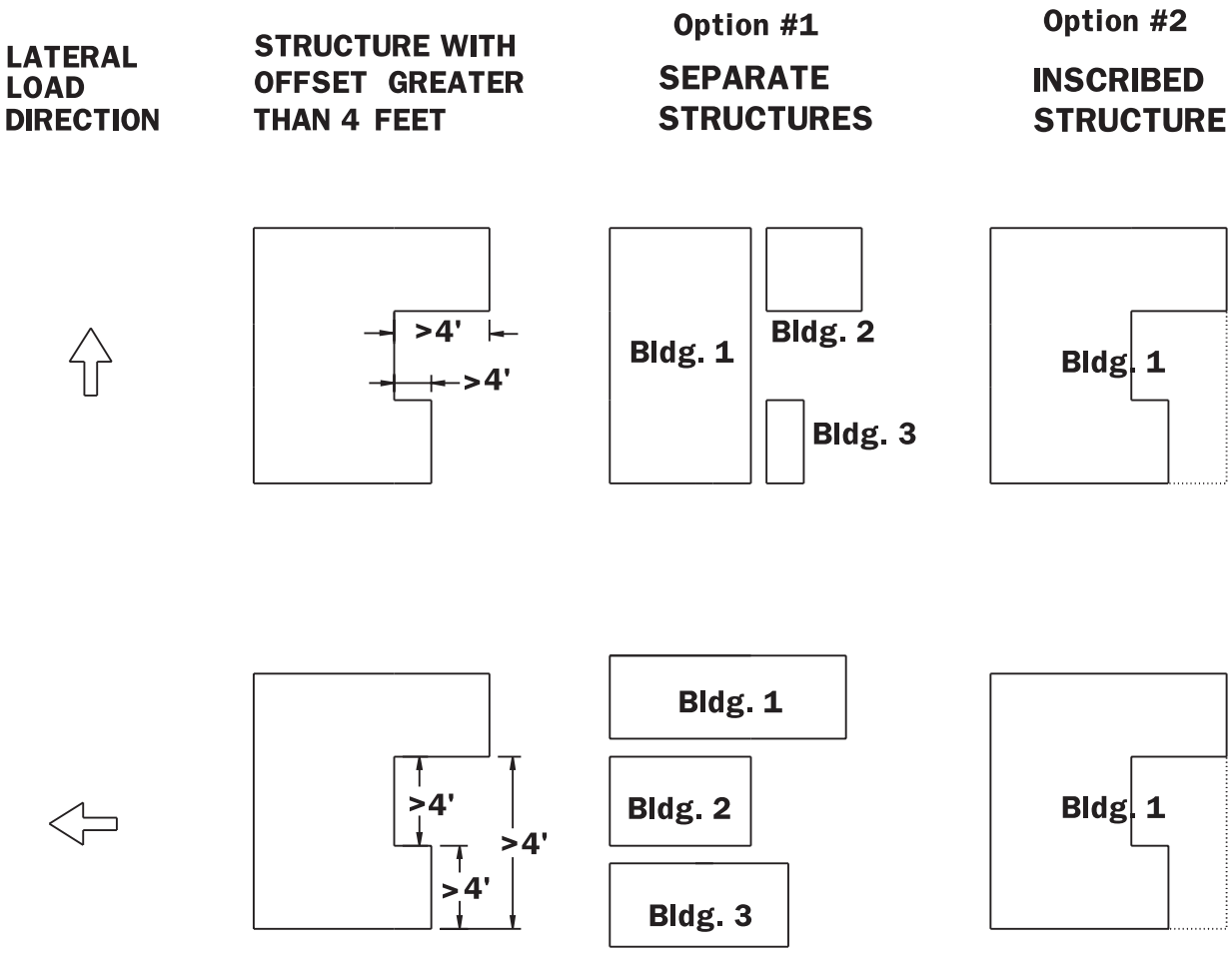
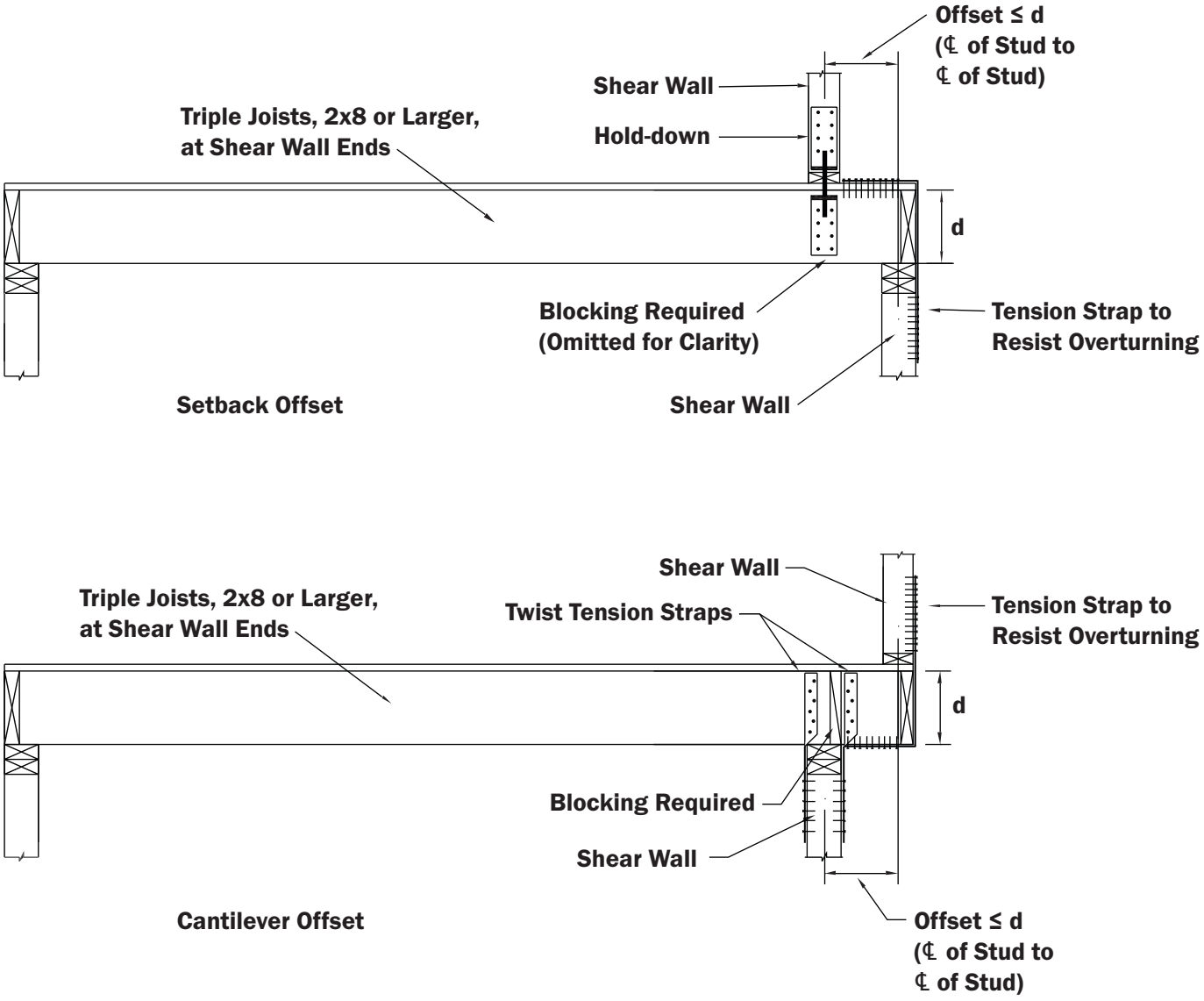


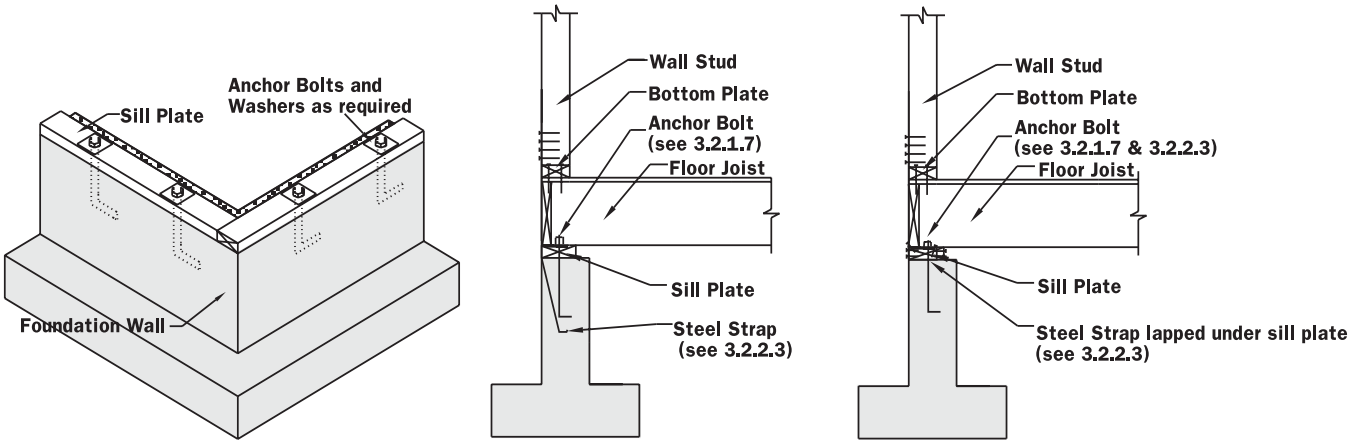

**Figure 3.1b Method for Addressing Shear Wall Line Offsets**



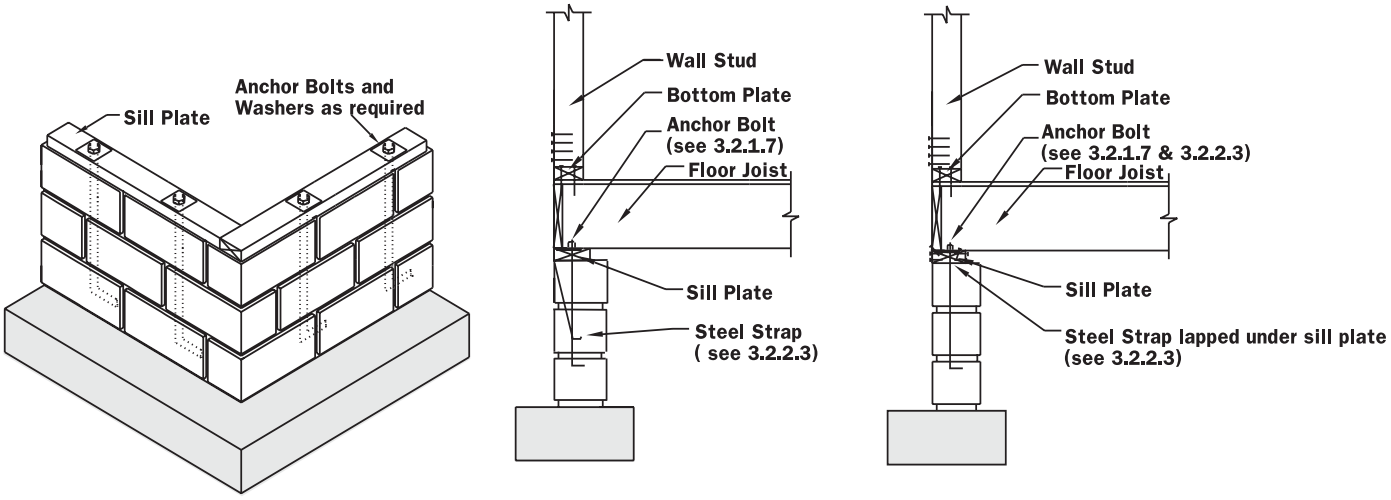
## Figure 3.1c Shear Wall Offset



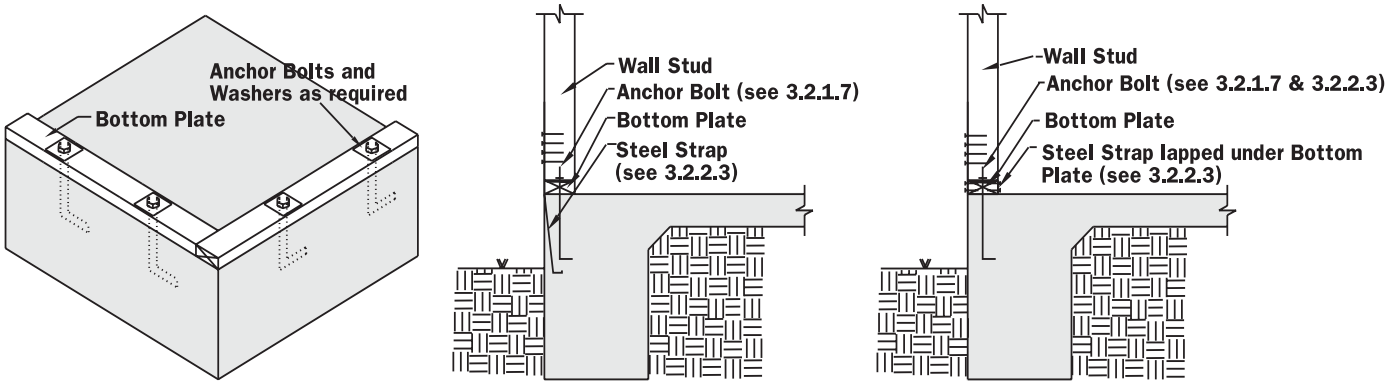
## Figure 3.2a Sill Plate Anchorage to Concrete Foundation Wall



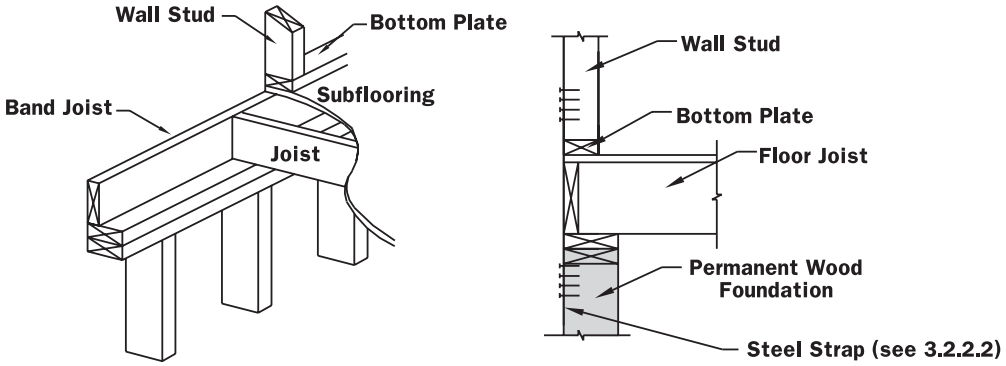

## Figure 3.2b Sill Plate Anchorage to Masonry Foundation Wall



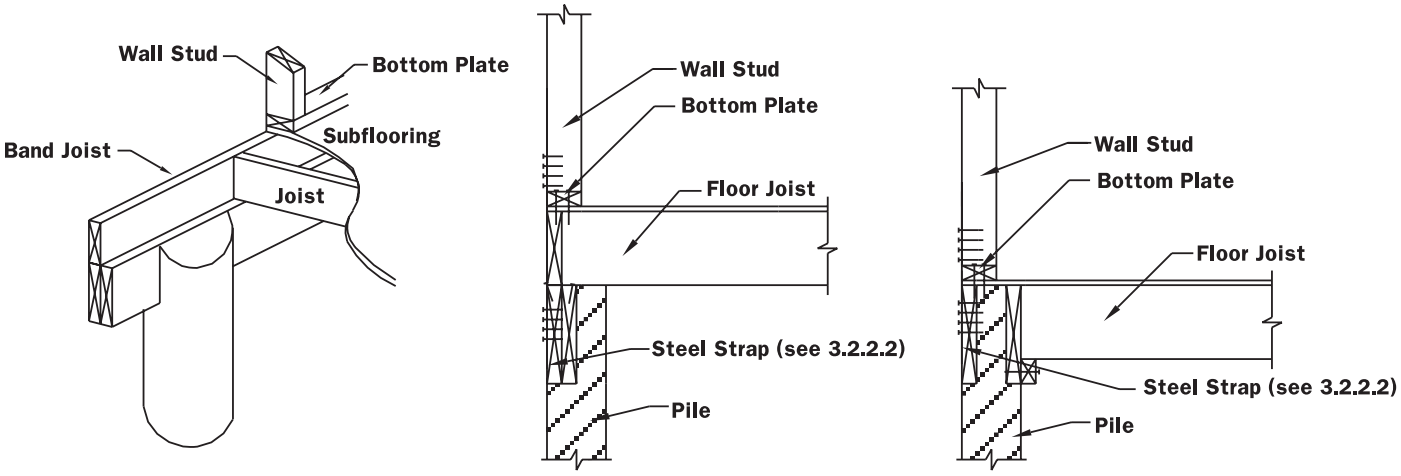

## Figure 3.2c Bottom Plate Anchorage to Slab-on-Grade



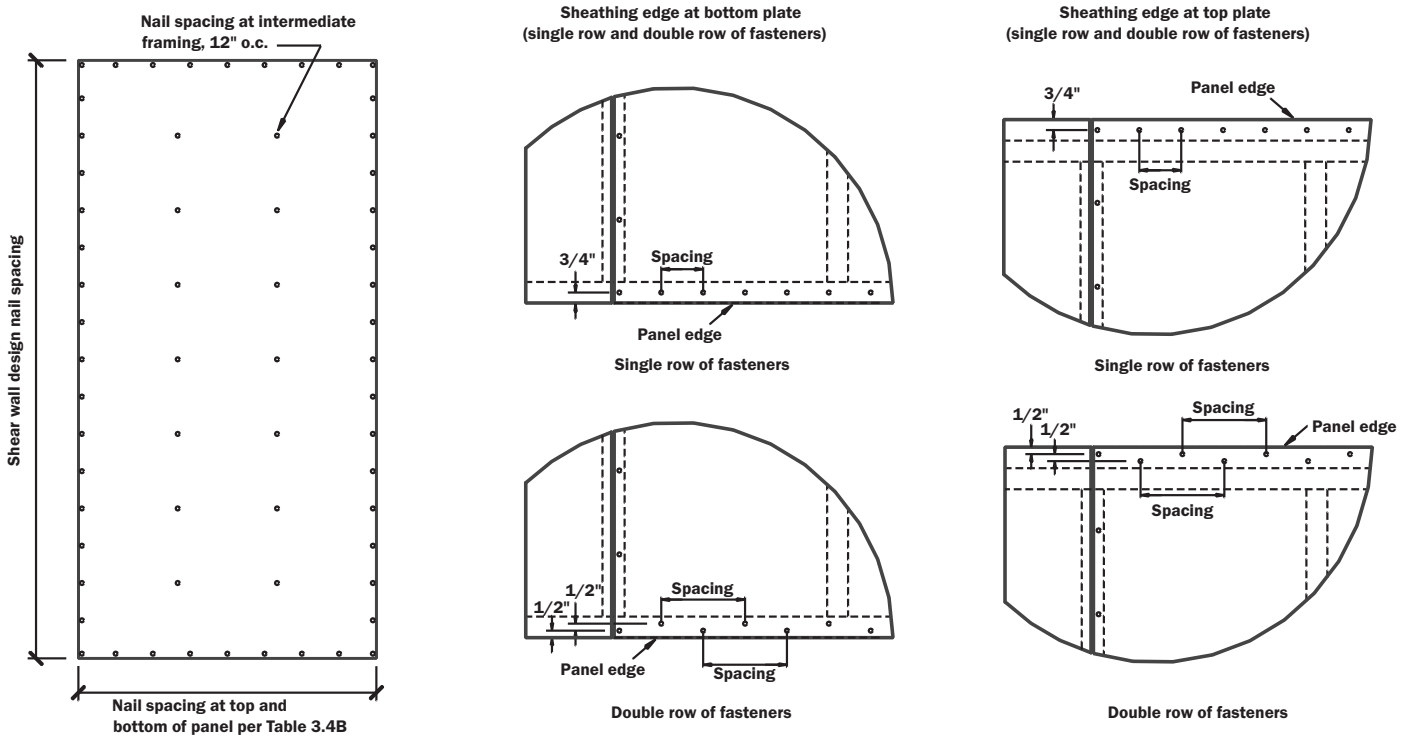
## Figure 3.2d Wall Assembly to Permanent Wood Foundation



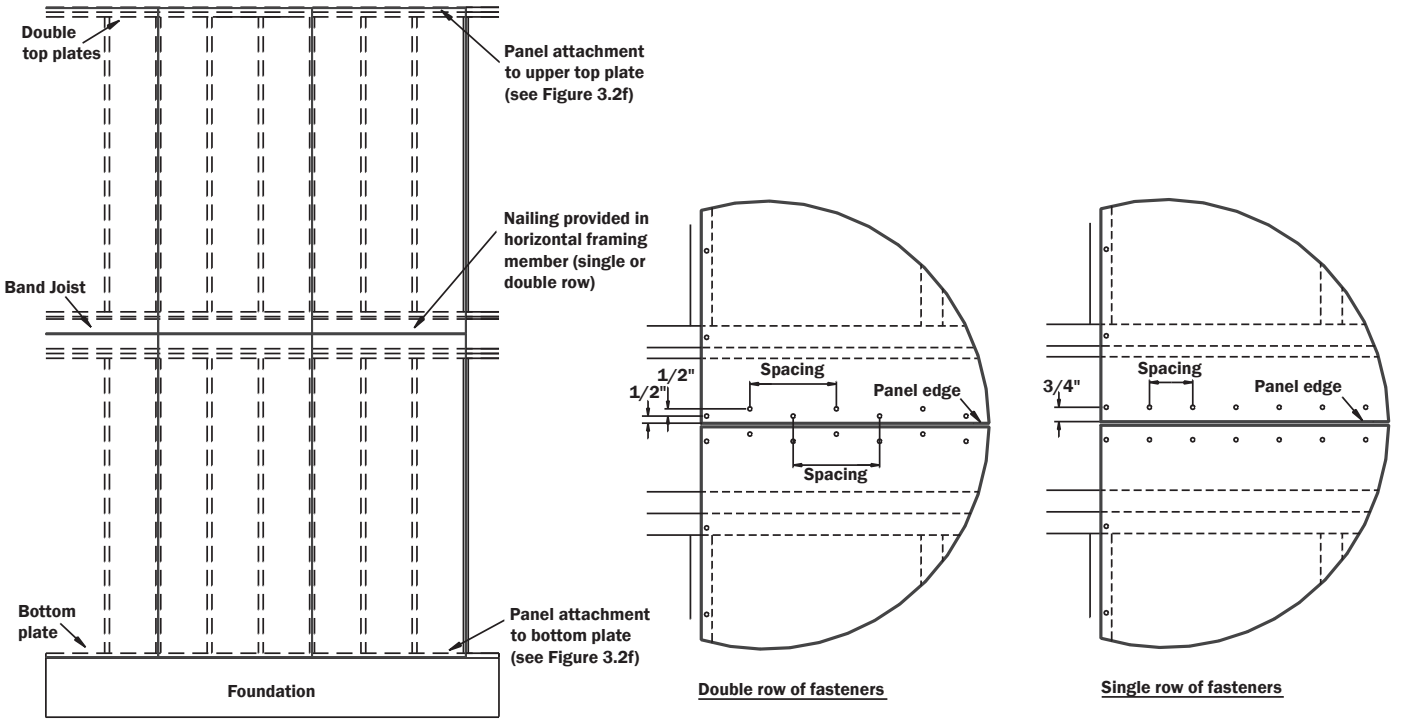

## Figure 3.2e Wall Assembly to Piles



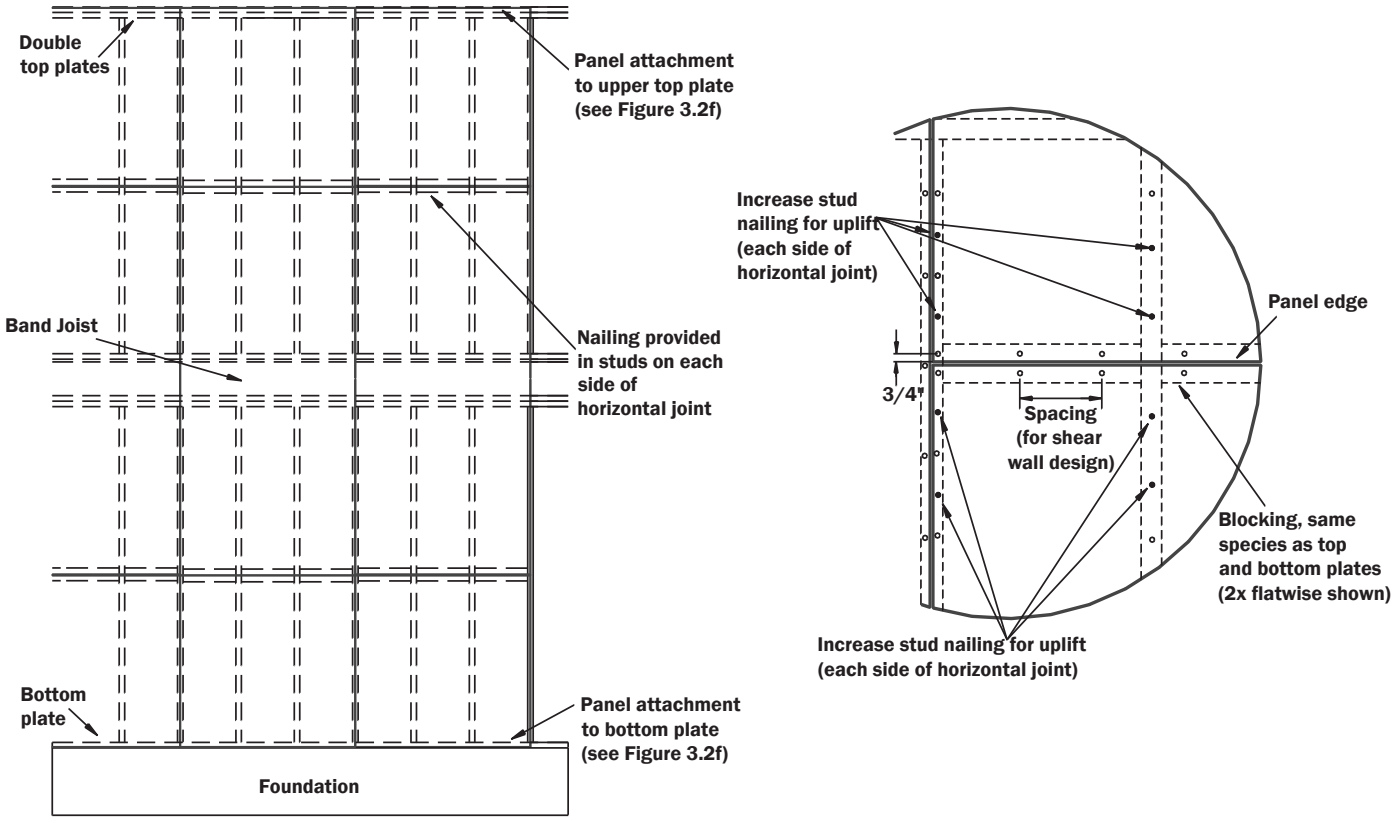
## Figure 3.2f Panel Attachment




## Figure 3.2g Panel Splice Occurring over Horizontal Framing Members



## Figure 3.2h Panel Splice Occurring across Studs




## Figure 3.2i Sheathing Splice Plate (Alternative Detail)

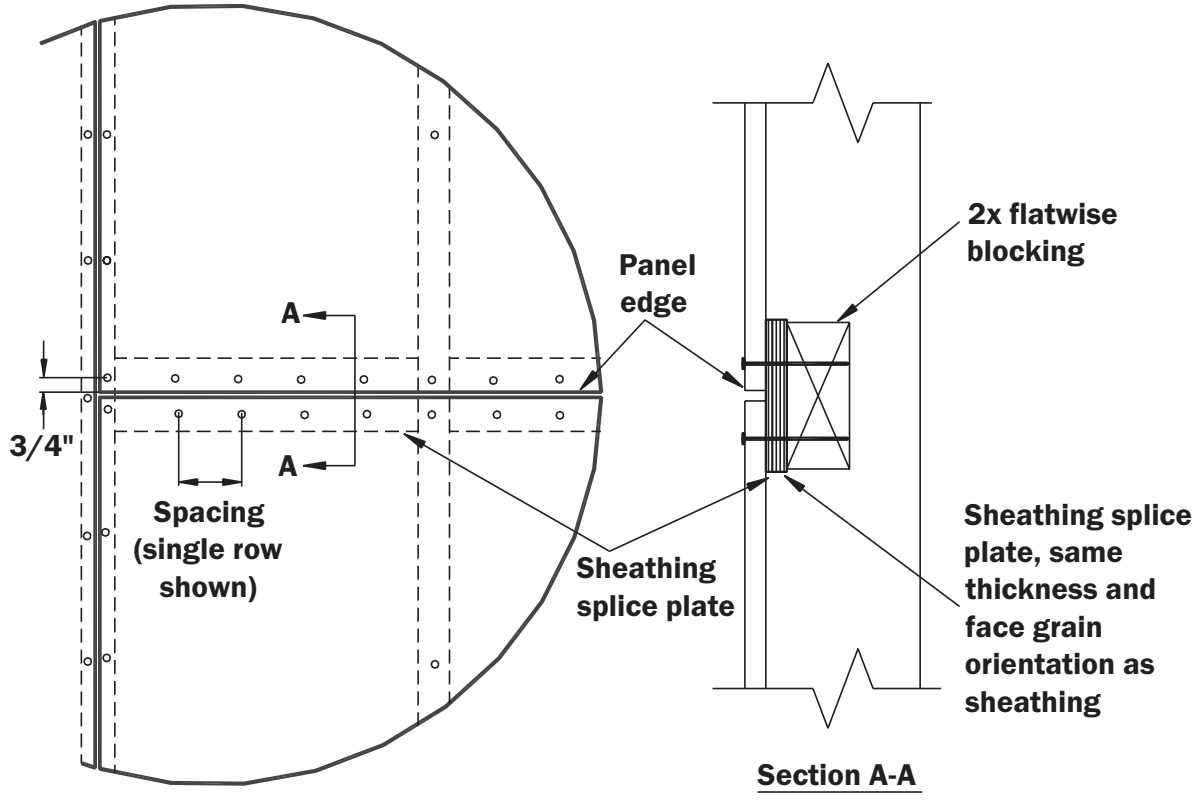


**Figure 3.2j Roof to Top Plate Connection Through Sheathing**

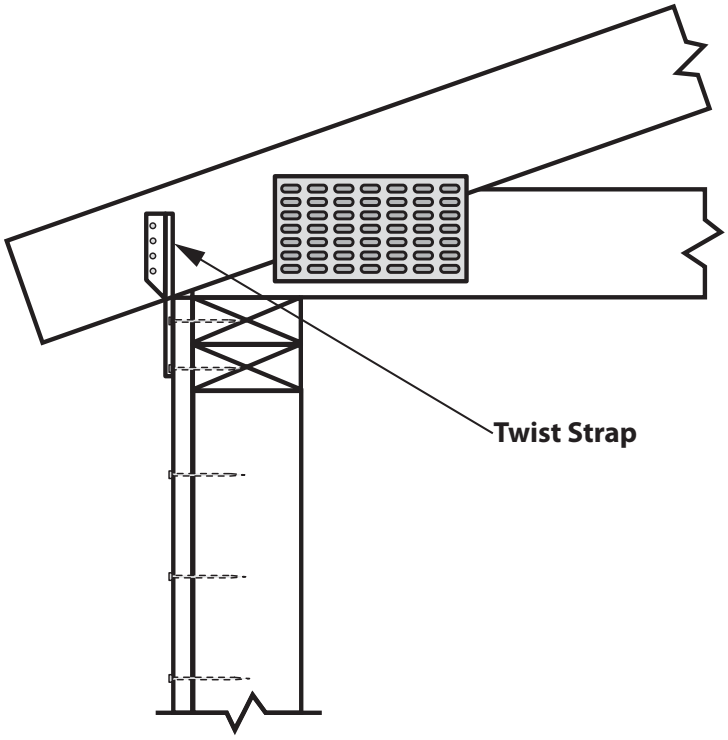



**Figure 3.2k Roof to Top Plate Uplift Connection**

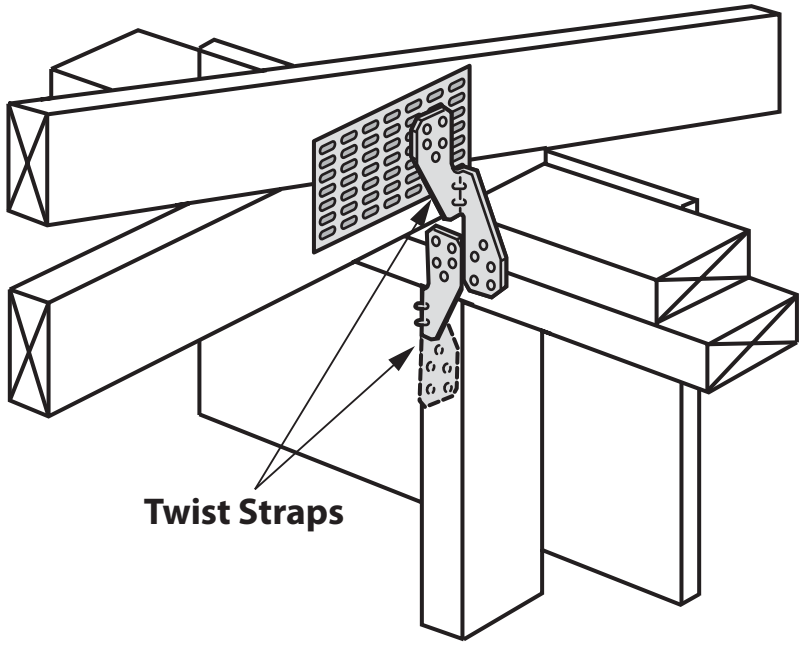


**Figure 3.3a Solid Sawn Joist and Rafter Notching and Boring Limits**

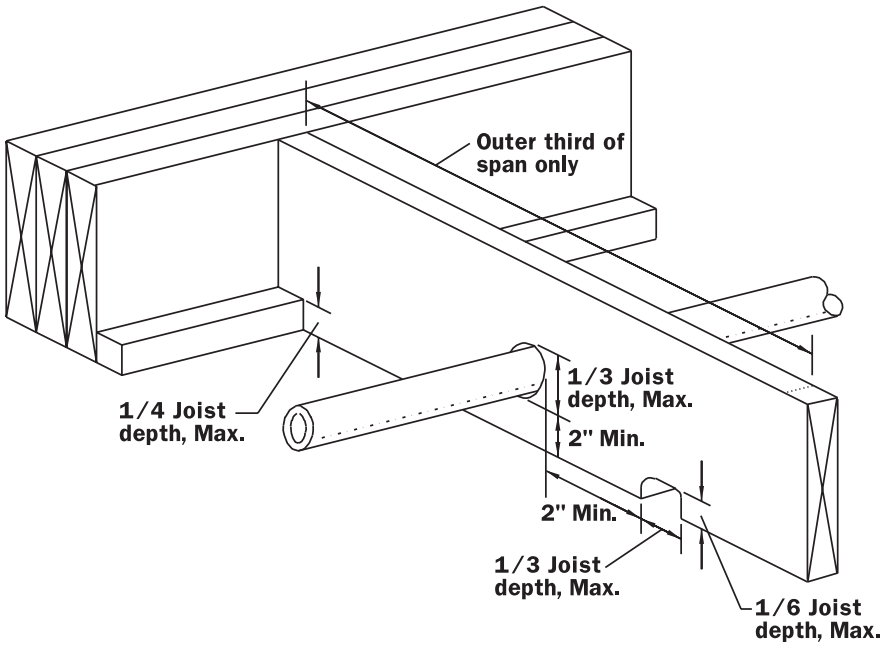
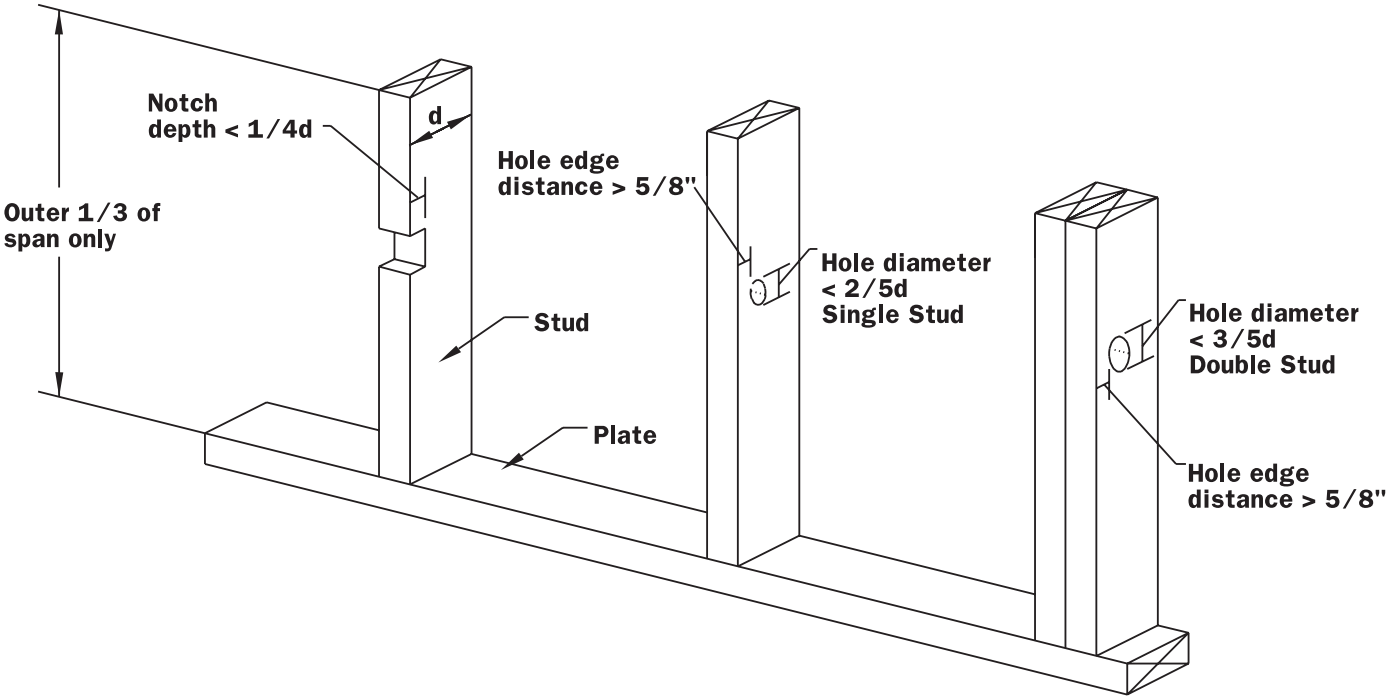
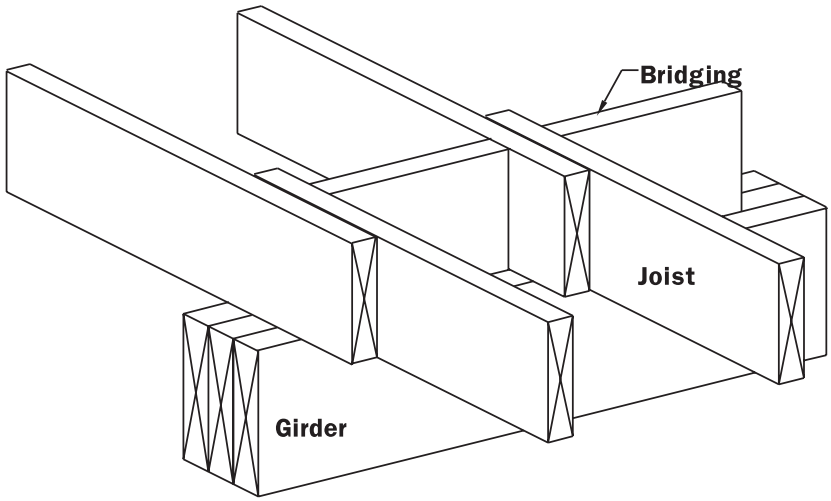


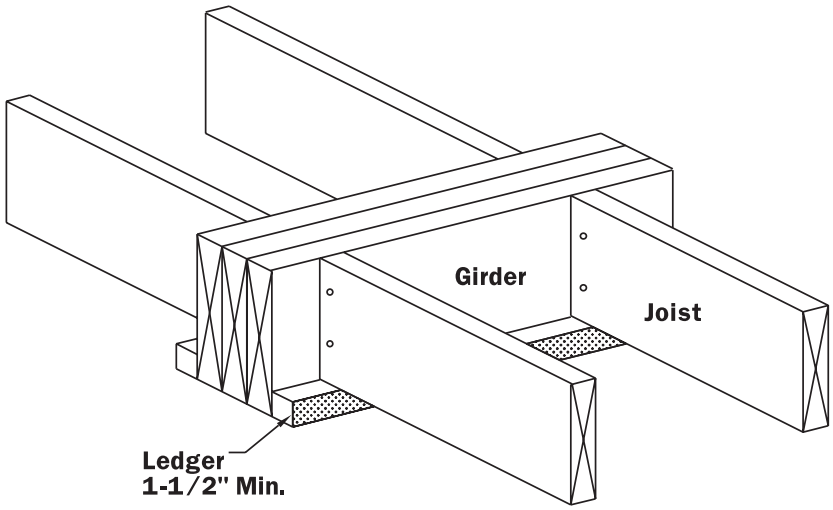

**Figure 3.3b Stud Notching and Boring Limits**



## Figure 3.4a Joists Framing on a Solid Sawn Girder




## Figure 3.4b Joists Framing on a Ledger




## Figure 3.4c Joists Framing on a Steel Beam

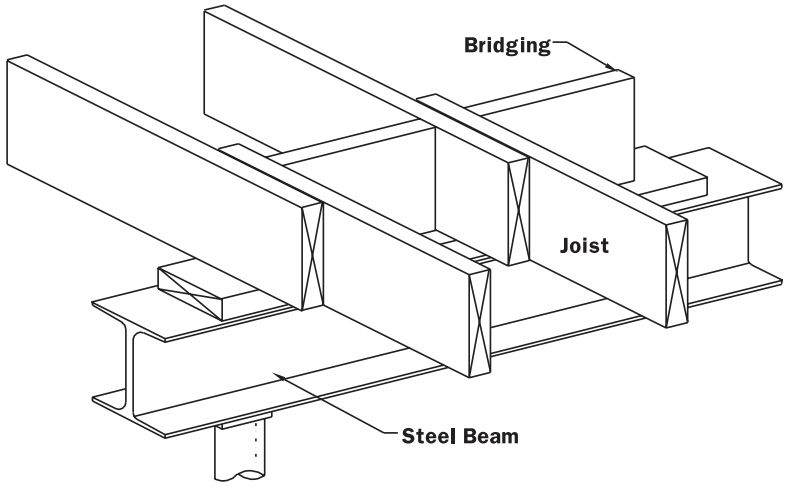


**Figure 3.4d Joist Framing on a Stud Wall**

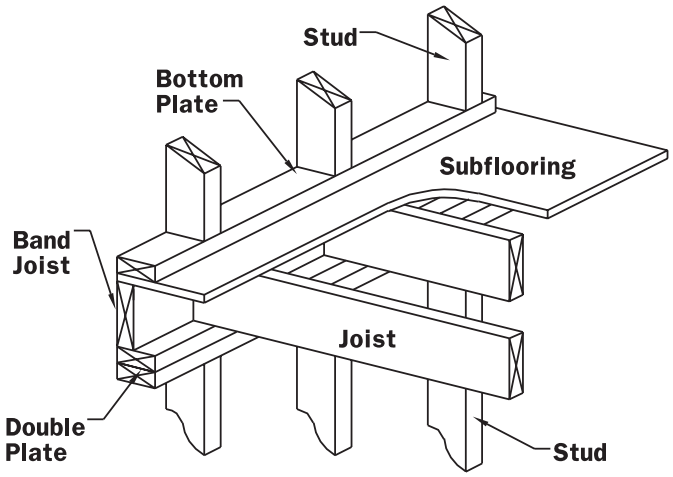



**Figure 3.4e Joist Framing on a Foundation Sill Plate**

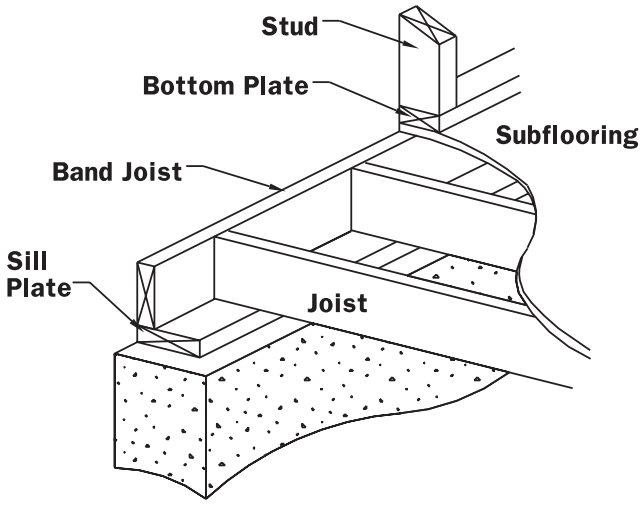



**Figure 3.4f Girder Bearing on a Concrete Wall**

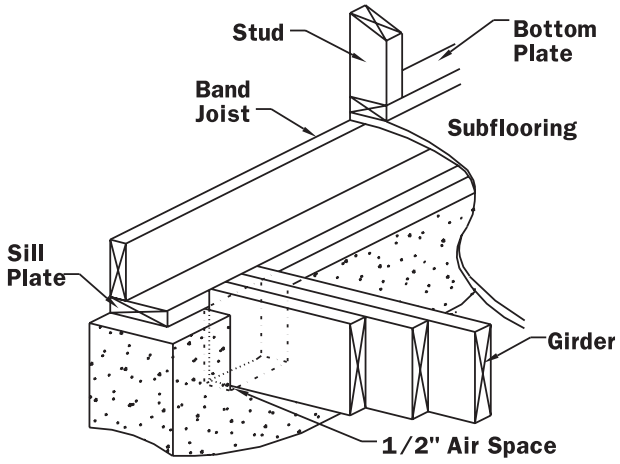



**Figure 3.4g Cantilever Floor - 3D View**

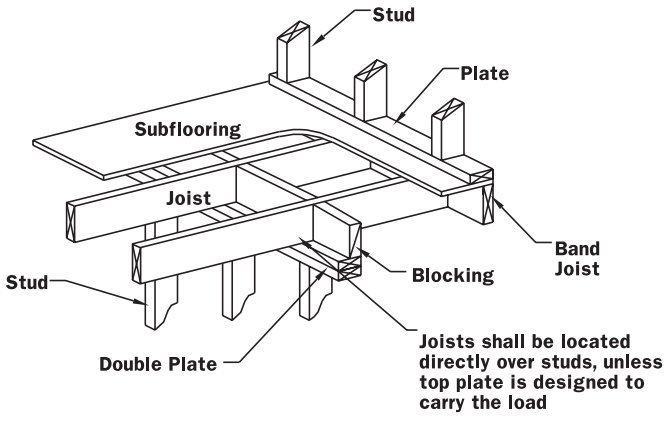


**Figure 3.5a Loadbearing Wall Offset from Support**

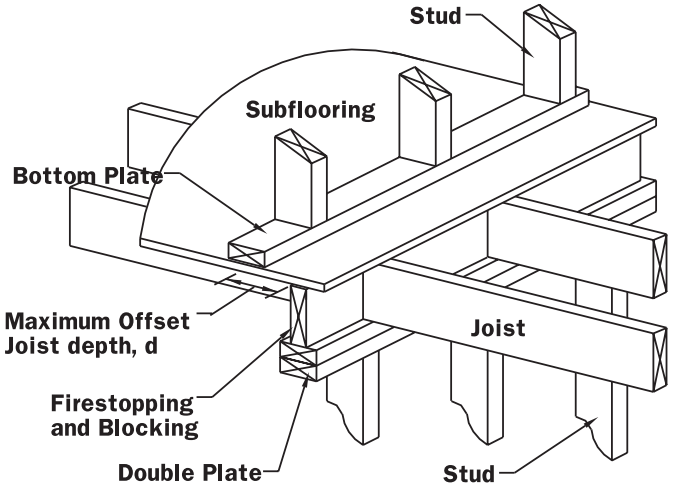



**Figure 3.5b Double Joist Under a Non-Loadbearing Wall**

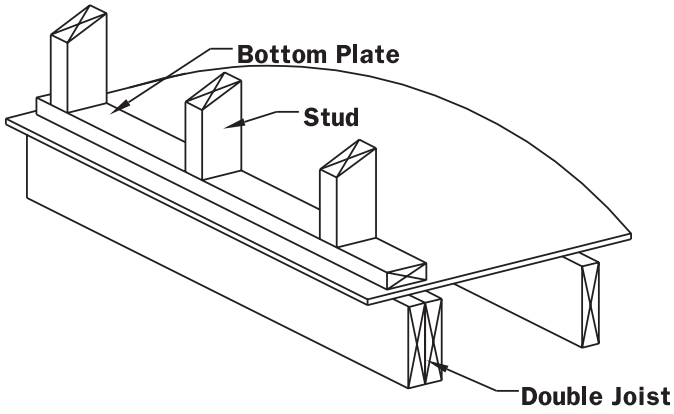



**Figure 3.5c Blocking Under a Non-Loadbearing Wall**

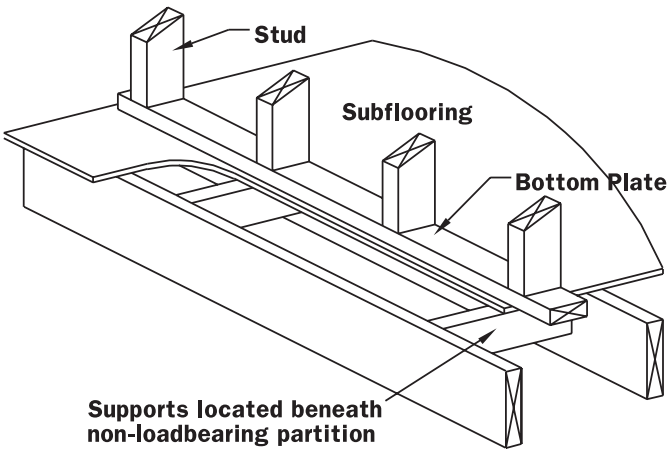
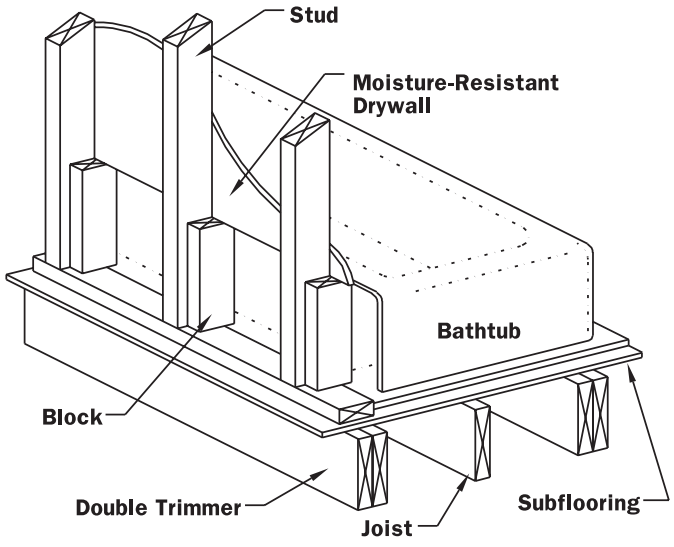
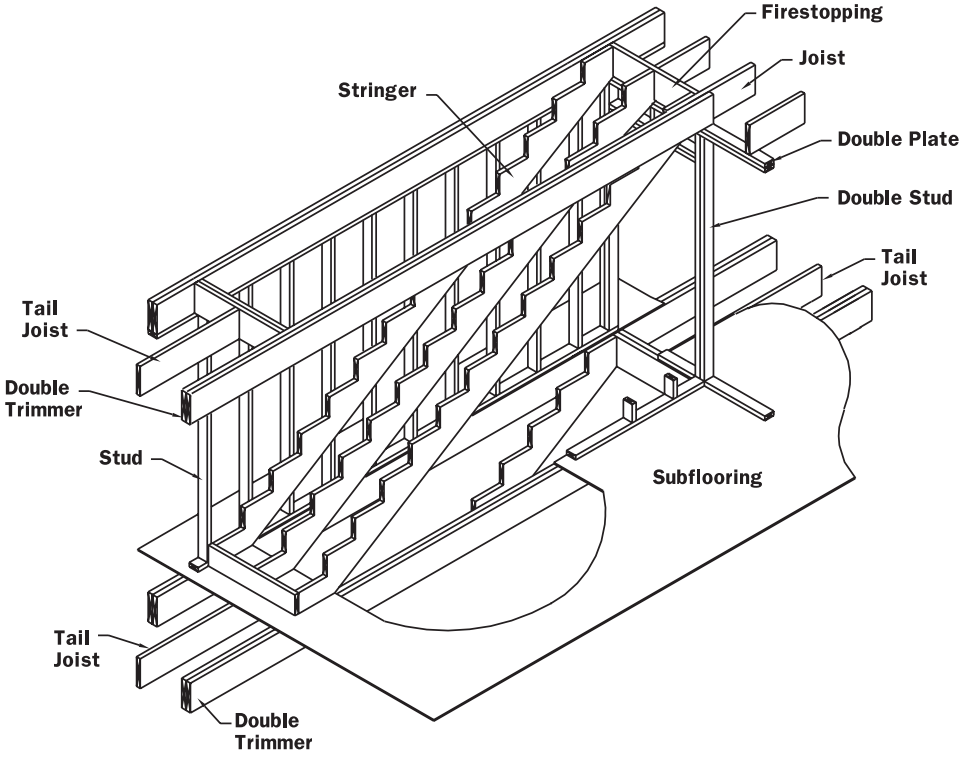


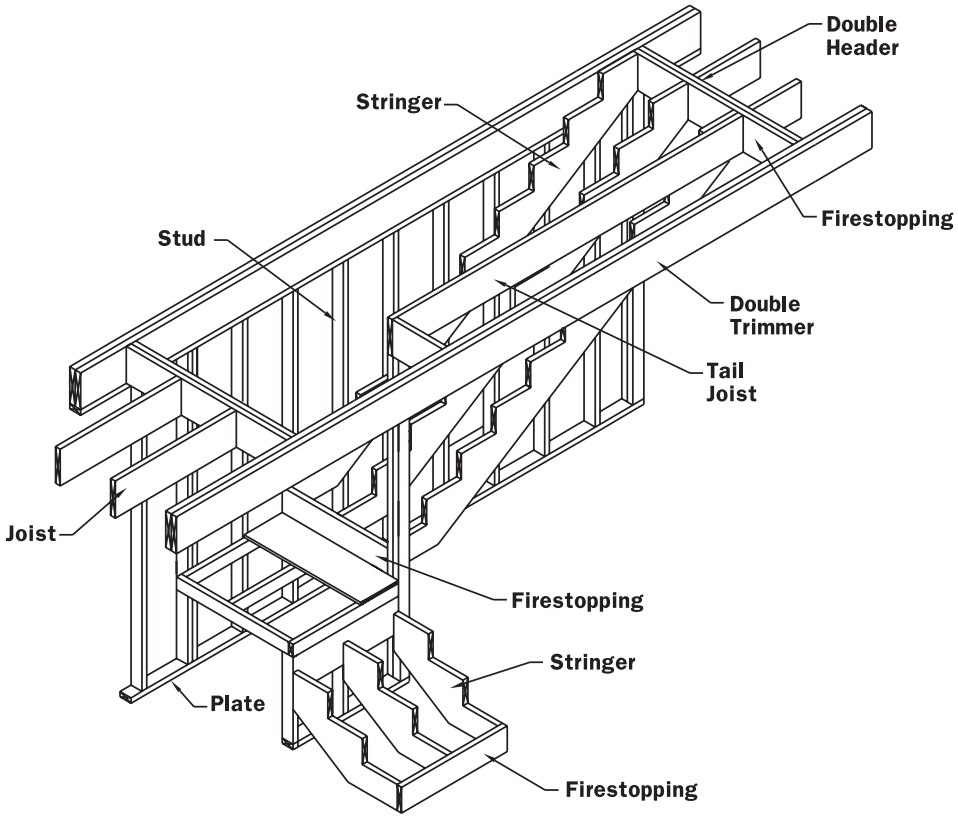

**Figure 3.5d Double Joist Under a Bathtub**



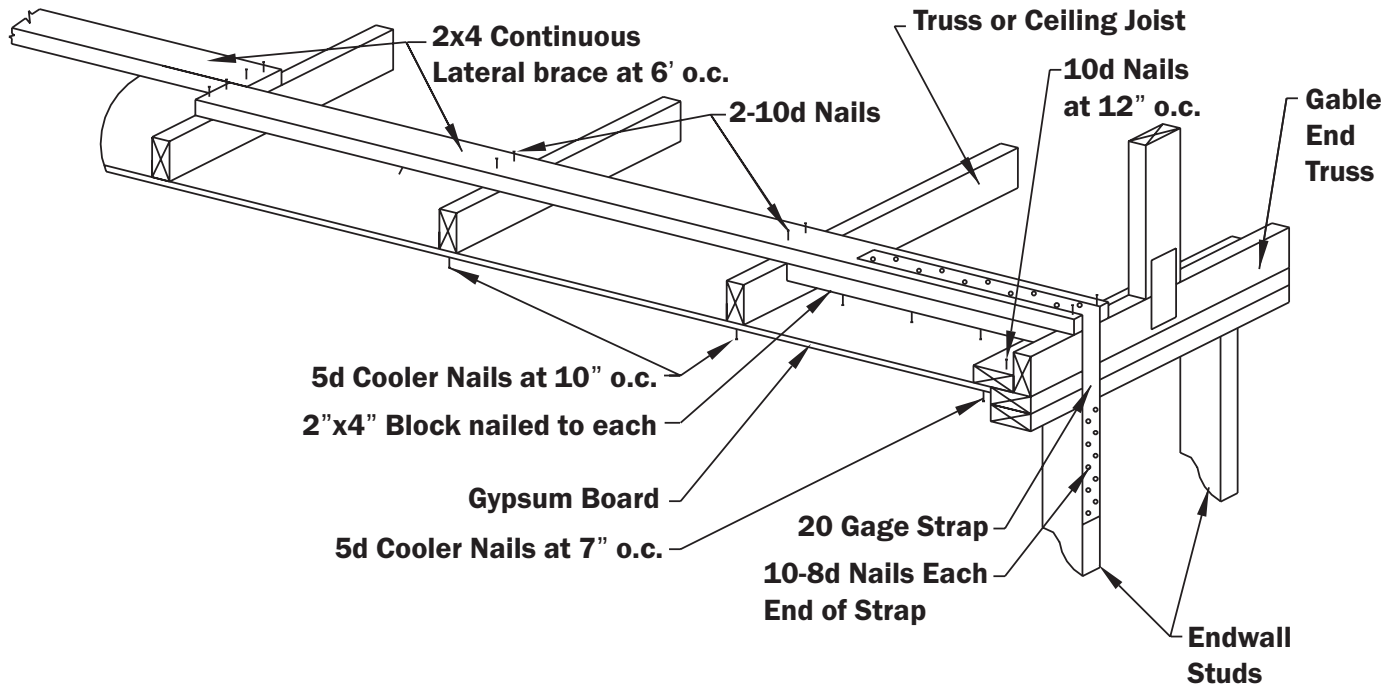
## Figure 3.6a Floor Opening - Stairway



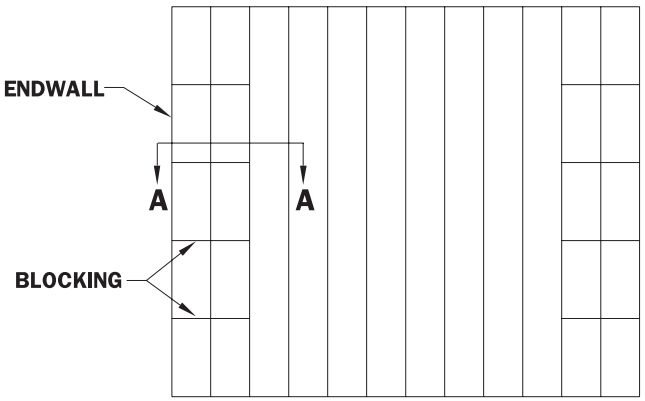

## Figure 3.6b Floor Opening - Stairway With Landing

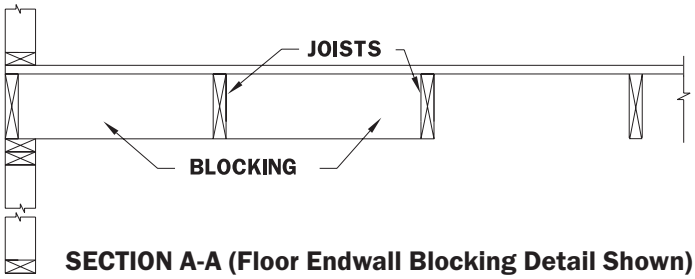


## Figure 3.7a Ceiling Bracing Gable Endwall




## Figure 3.7b Floor Bracing Endwall (Floor or Roof)




SECTION A-A (Floor Endwall Blocking Detail Shown)

**Figure 3.8a Corner Stud Hold-down Detail - 3 Studs With Blocking**

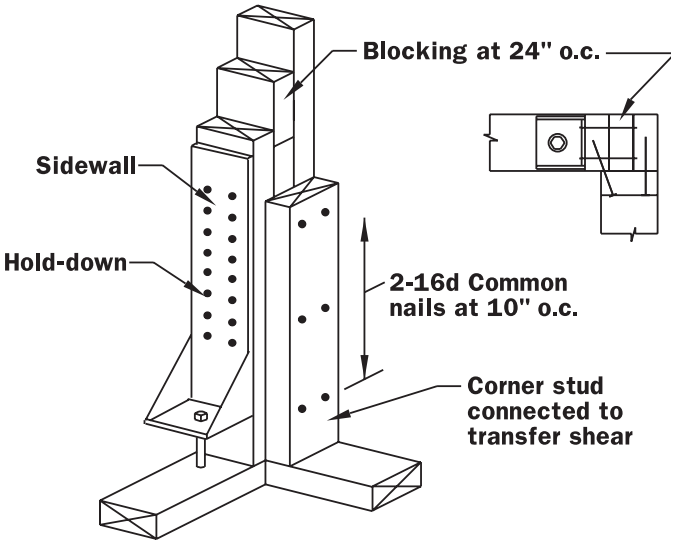



**Figure 3.8b Corner Stud Hold-down Detail - 4 Studs**

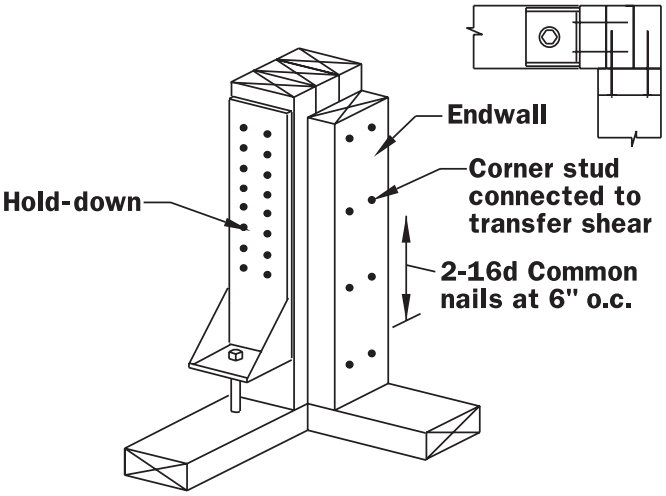



**Figure 3.8c Interior Stud Detail**

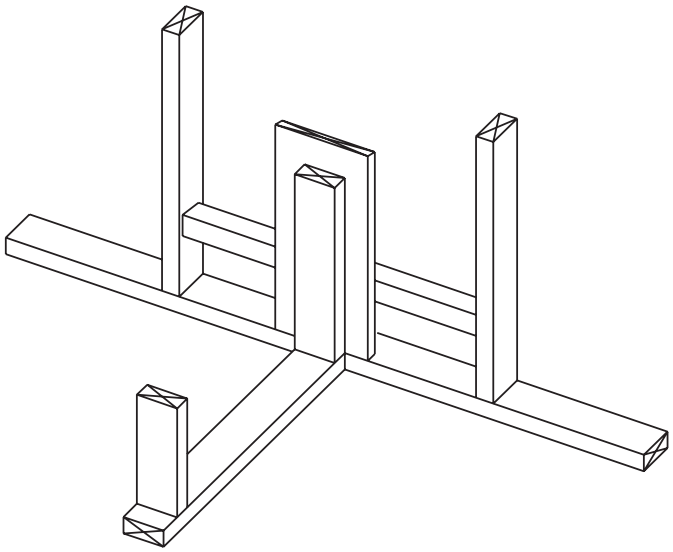
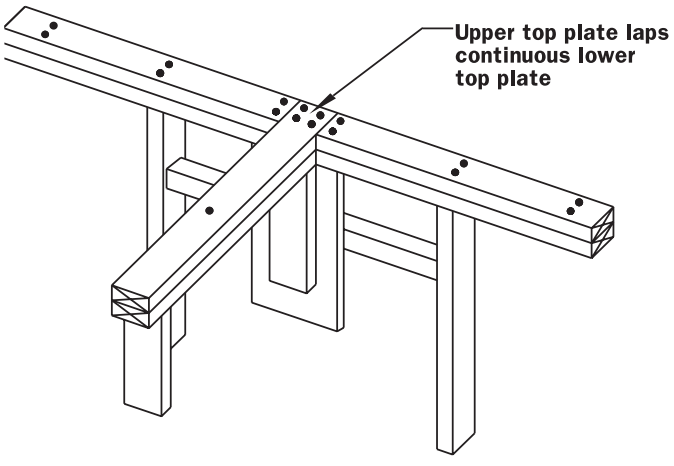
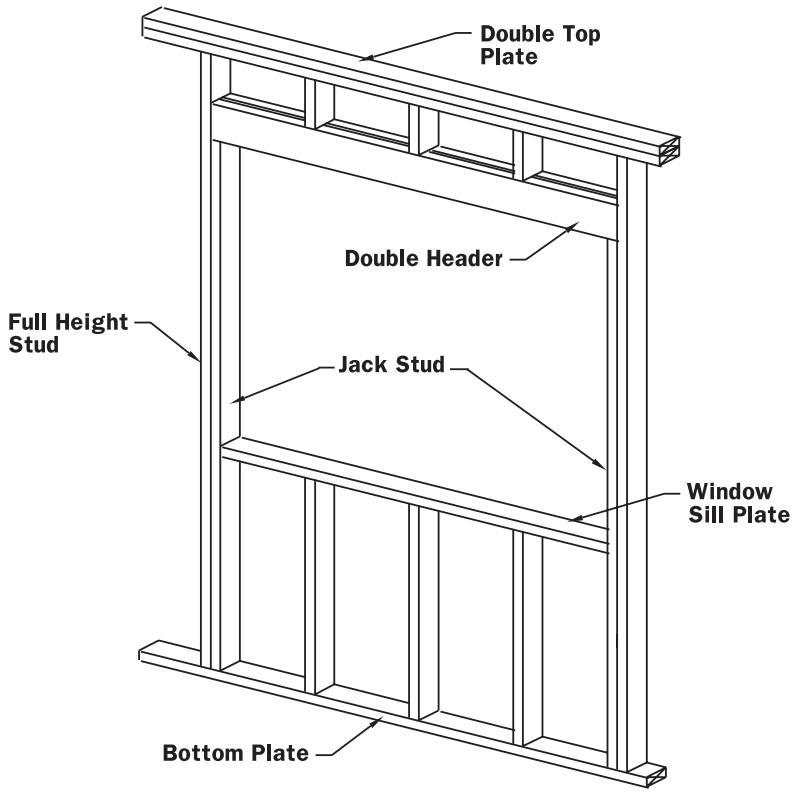


**Figure 3.8d Top Plate Intersection Detail**



## Figure 3.9a Studs and Headers Around Wall Openings




## Figure 3.9b Studs and Headers Around Wall Openings - Bay Window

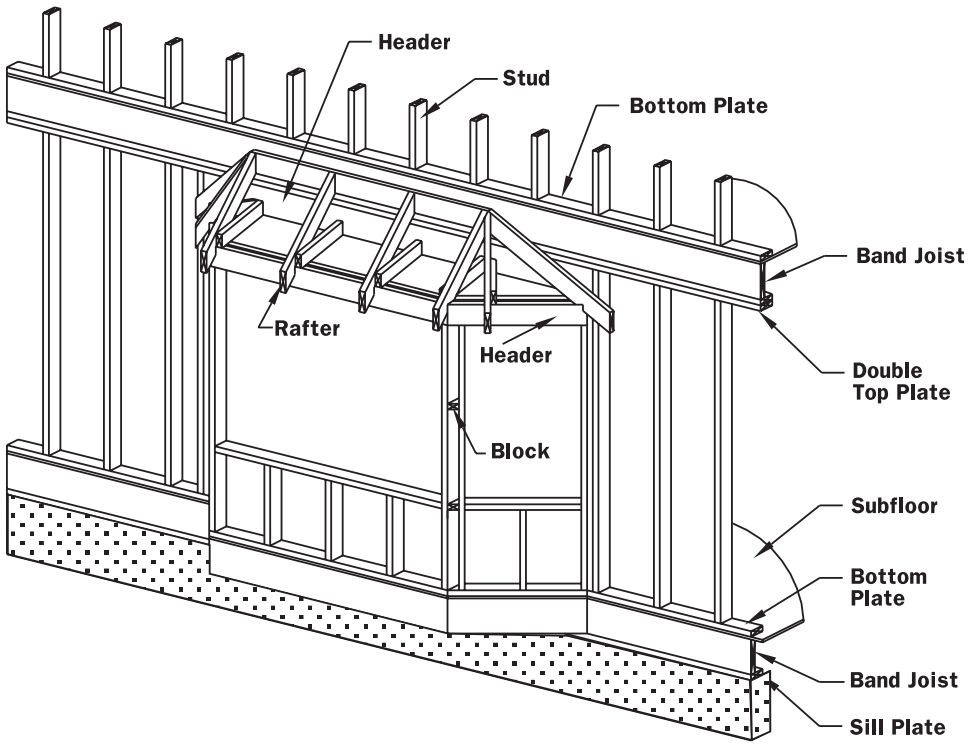


**Figure 3.10a Ridge Beam Details**

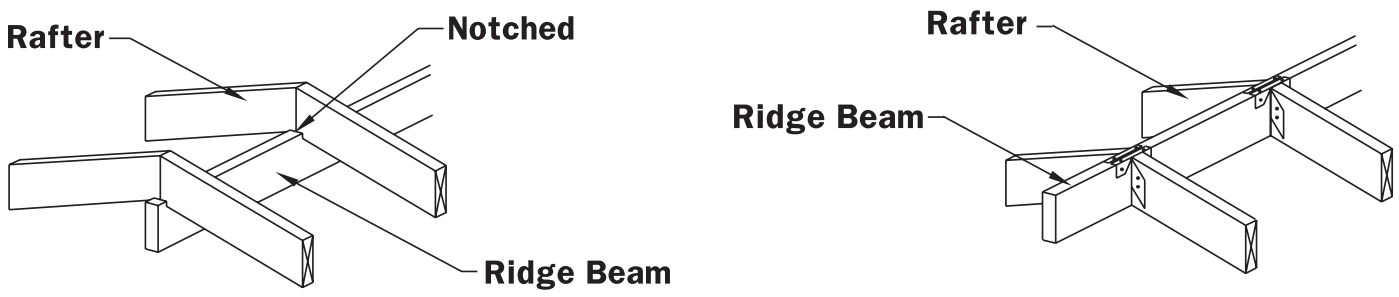



**Figure 3.10b Ridge Board and Ceiling Joist Detail**

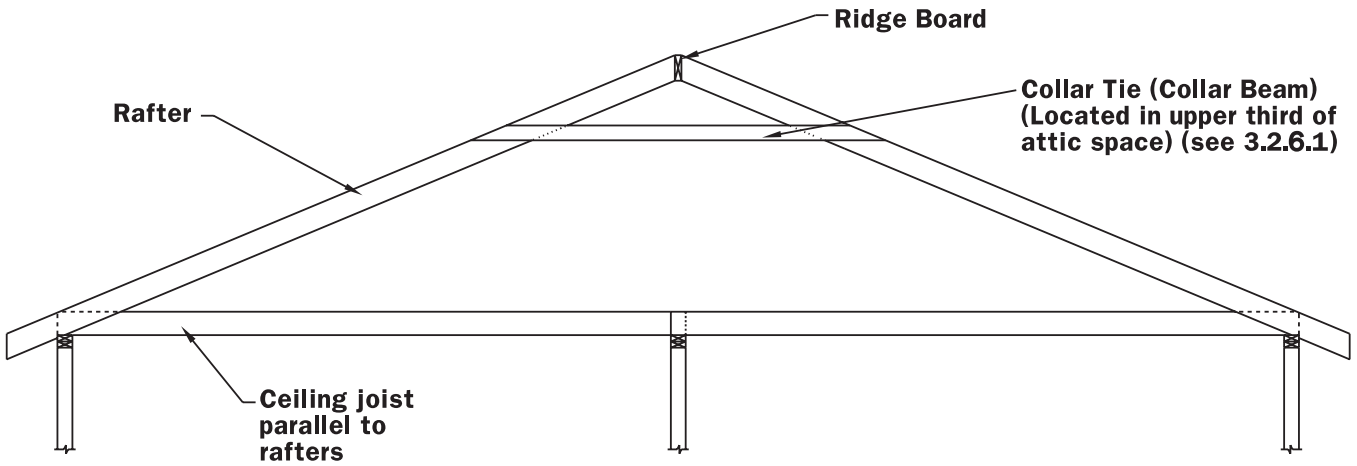



**Figure 3.10c Ridge Board and Rafter Tie Detail**

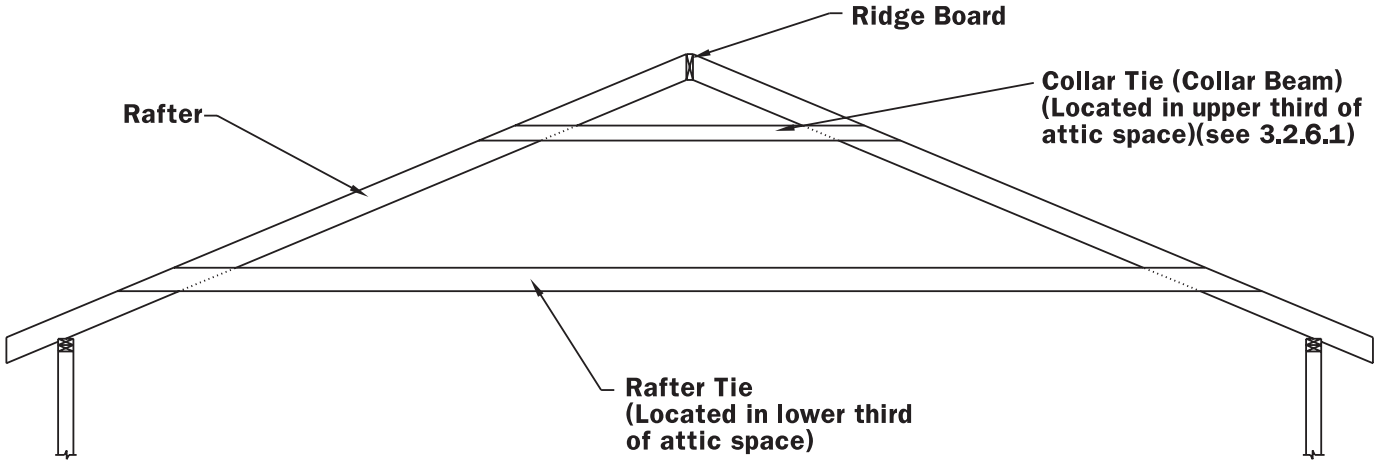


**Figure 3.11a Roof Openings - Chimney**

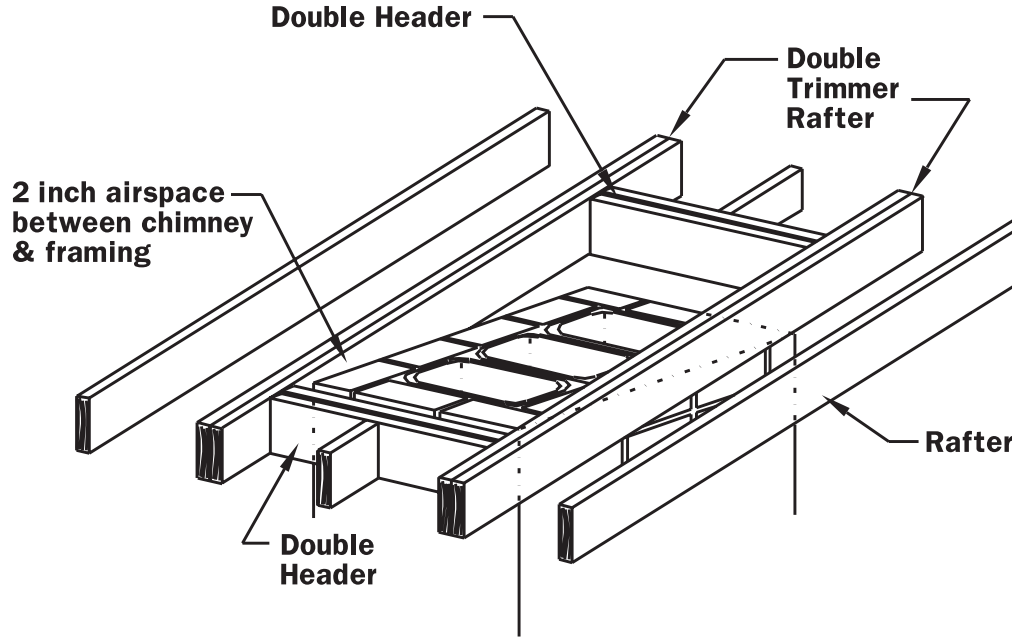



**Figure 3.11b Roof Openings - Gable Dormer**

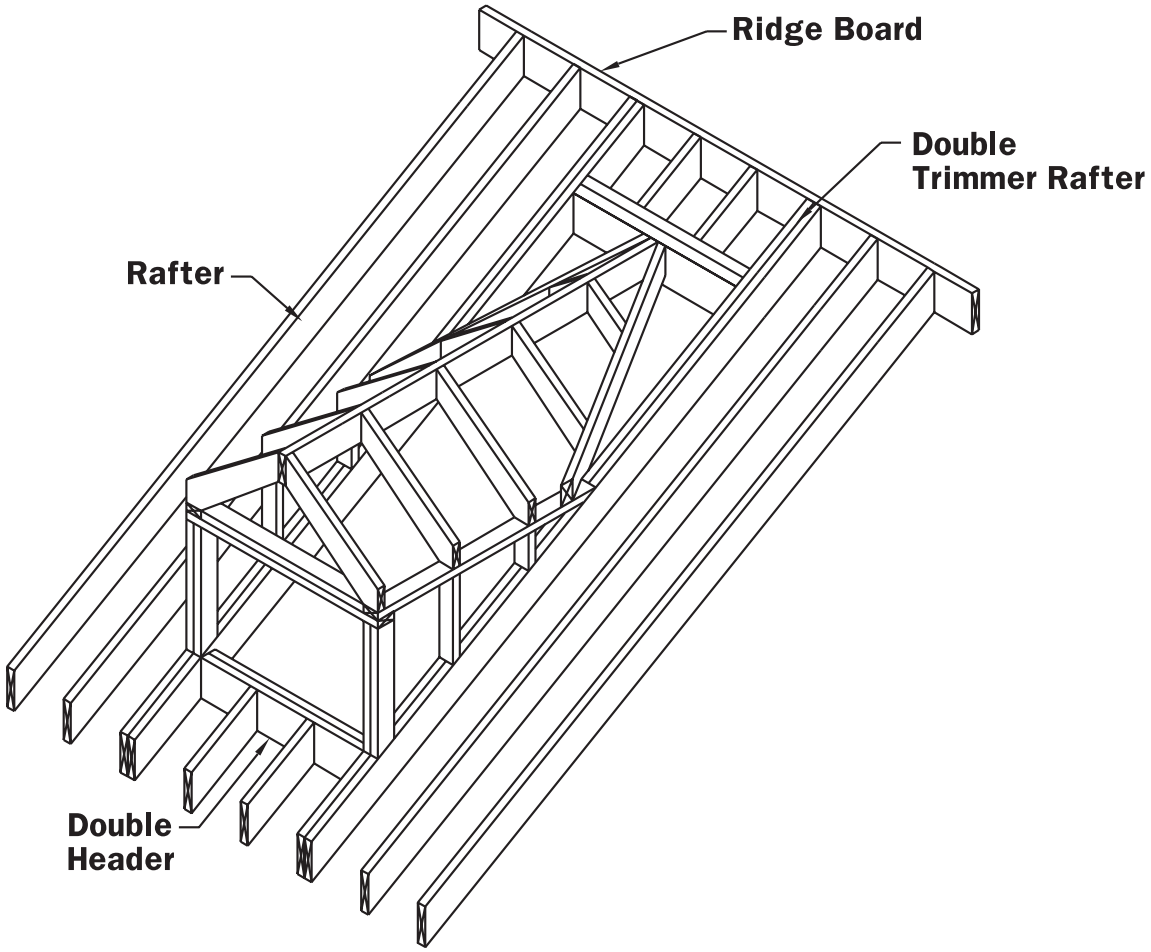
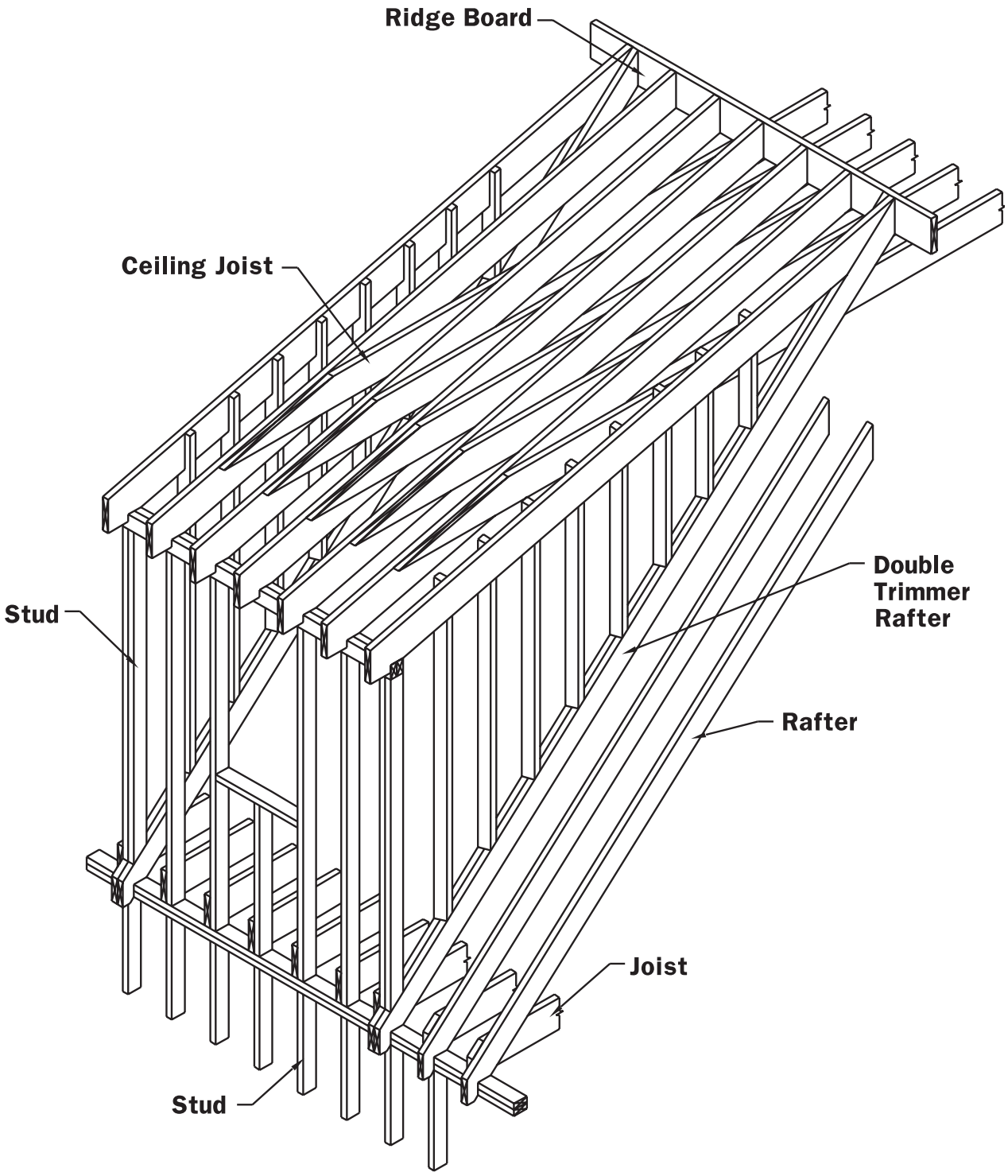


**Figure 3.11c Roof Openings - Shed Dormer**



## Figure 3.12a Hip Roof Framing Detail

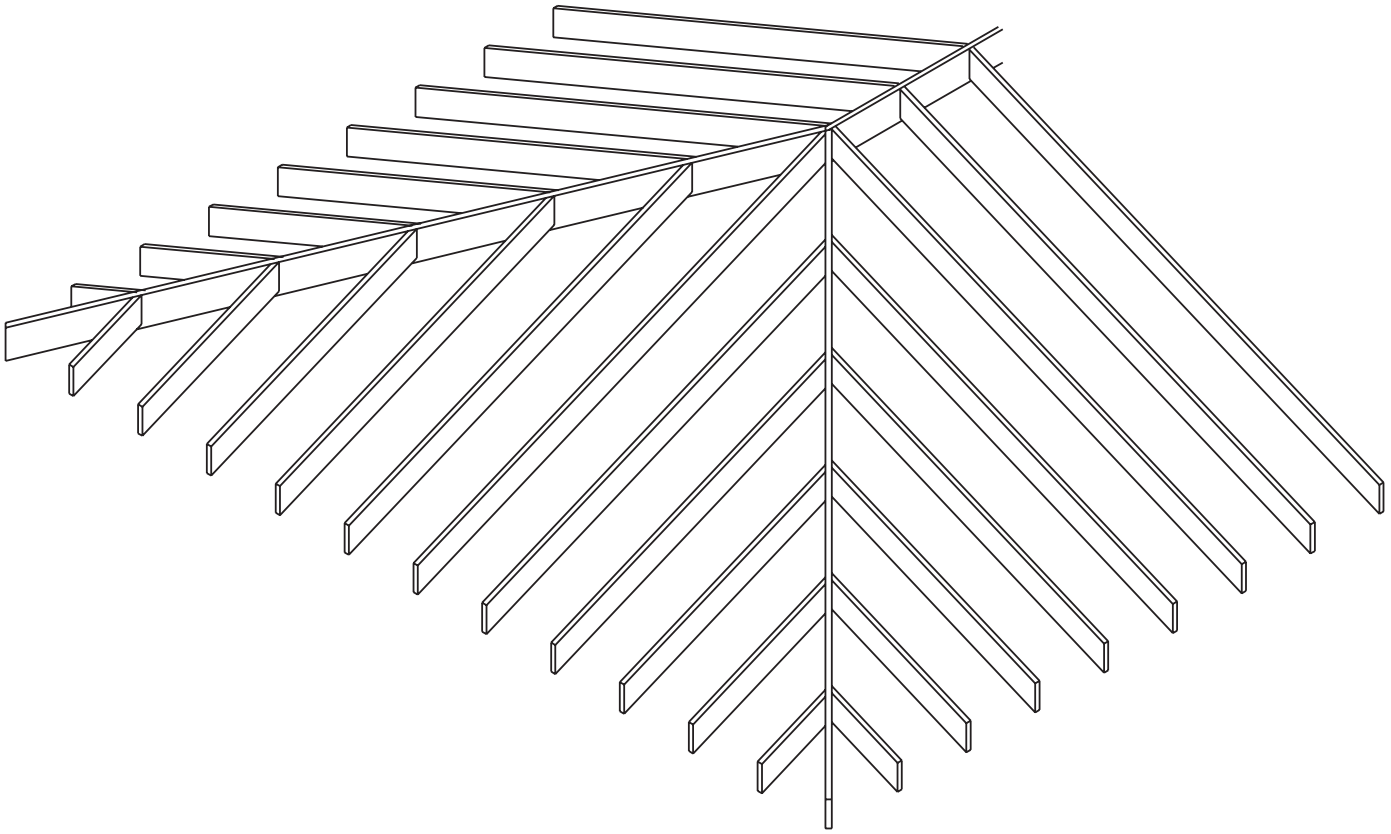


**Figure 3.12b Valley Roof Framing Detail**

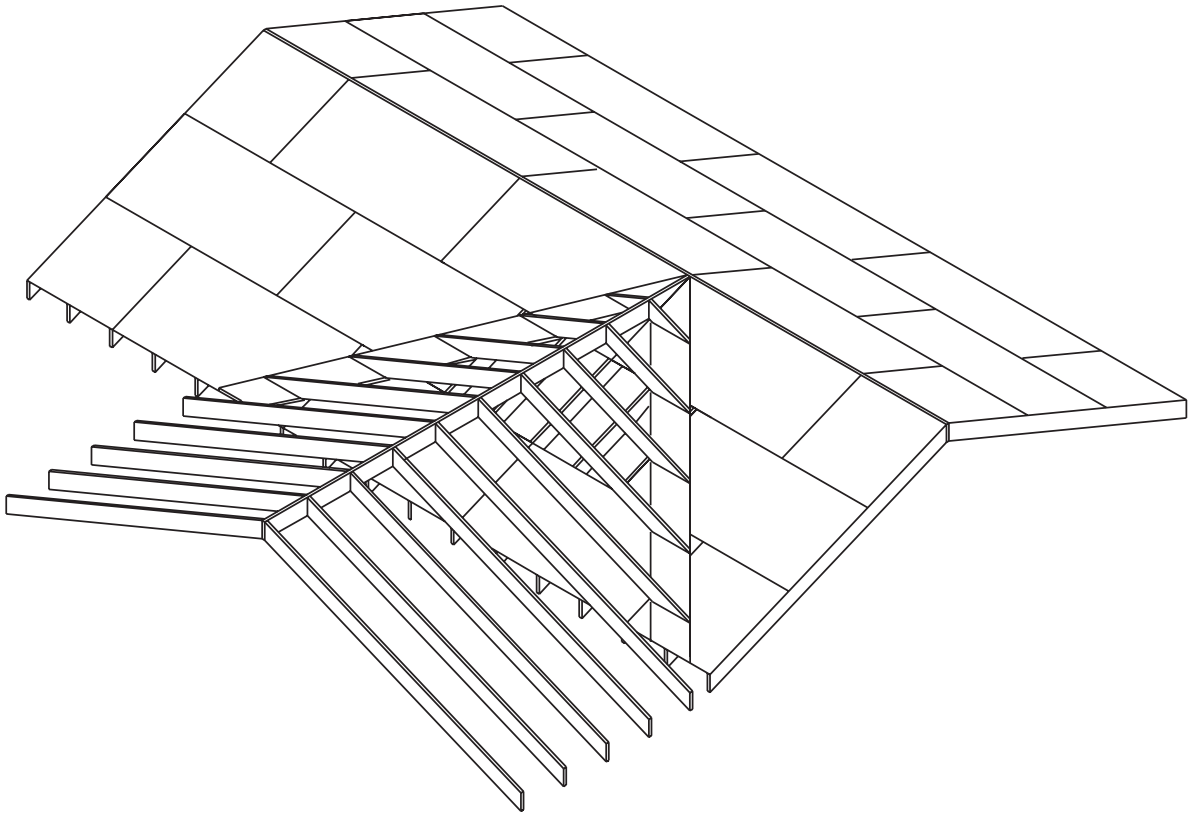
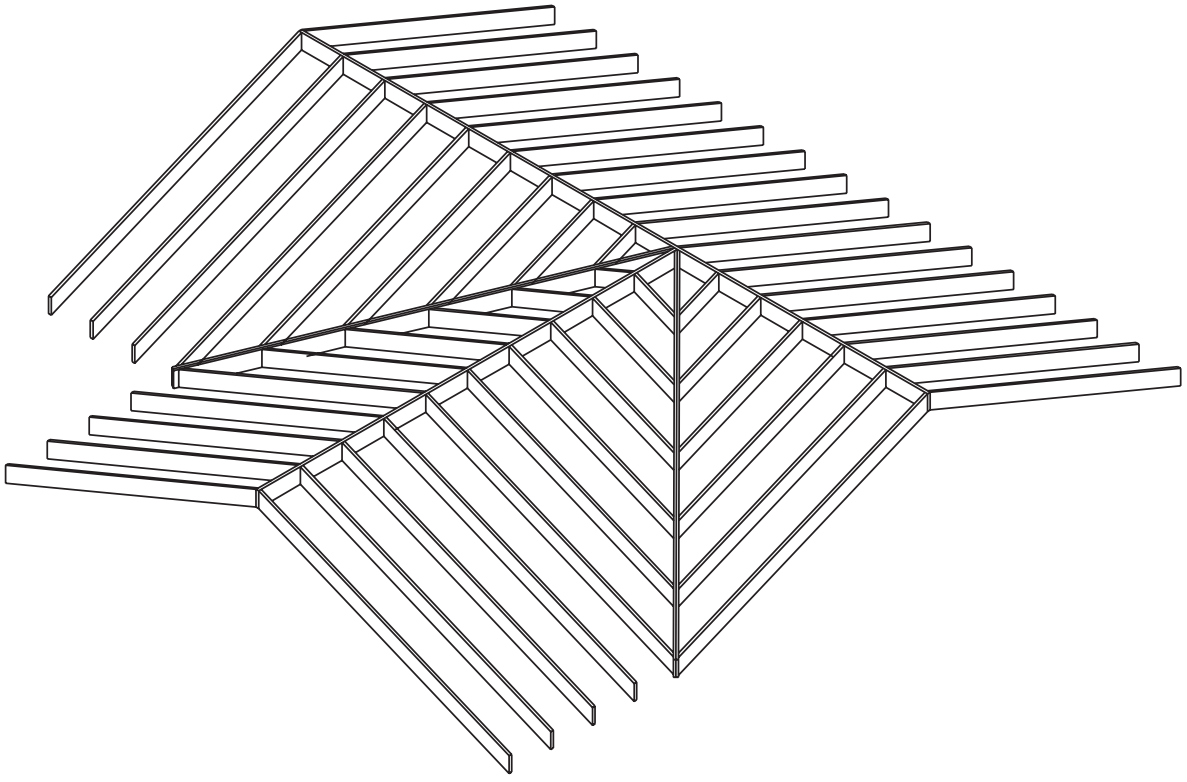


**Figure 3.12c Valley Beam Roof Framing Detail**



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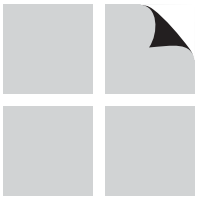
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## Table 3.1 Nailing Schedule

| Joint Description | Number of Common Nails | Number of Box Nails | Nail Spacing |
|---|---|---|---|
| **ROOF FRAMING** | | | |
| **Rafter to Top Plate (Toe-nailed)** | (see Table 3.4A) | (see Table 3.4A) | per rafter |
| **Ceiling Joist to Top Plate (Toe-nailed)** | (see Table 3.4A) | (see Table 3.4A) | per joist |
| **Ceiling Joist to Parallel Rafter (Face-nailed)** | (see Table 3.9A) | (see Table 3.9A) | each lap |
| **Ceiling Joist Laps over Partitions (Face-nailed)** | (see Table 3.9A) | (see Table 3.9A) | each lap |
| **Collar Tie to Rafter (Face-nailed)** | (see Table 3.6) | (see Table 3.6) | per tie |
| **Blocking to Rafter (Toe-nailed)** | 2- 8d | 2-10d | each end |
| **Ridge Board to Rafter (End-nailed)** | 2-16d | 3-16d | each end |
| **WALL FRAMING** | | | |
| **Top Plate to Top Plate (Face-nailed)** | 2-16d[1] | 2-16d[1] | per foot |
| **Top Plates at Intersections (Face-nailed)** | 4-16d | 5-16d | joints - each side |
| **Stud to Stud (Face-nailed)** | 2-16d | 2-16d | 24" o.c. |
| **Header to Header (Face-nailed)** | 16d | 16d | 16" o.c. along edges |
| **Top or Bottom Plate to Stud (End-nailed)** | (see Table 3.5A) | (see Table 3.5A) | per stud |
| **Bottom Plate to Floor joist, Bandjoist, Endjoist or Blocking (Face-nailed)** | 2-16d[1,2] | 2-16d[1,2] | per foot |
| **FLOOR FRAMING** | | | |
| **Joist to Sill, Top Plate or Girder (Toe-nailed)** | 4- 8d | 4-10d | per joist |
| **Bridging to Joist (Toe-nailed)** | 2- 8d | 2-10d | each end |
| **Blocking to Joist (Toe-nailed)** | 2- 8d | 2-10d | each end |
| **Blocking to Sill or Top Plate (Toe-nailed)** | 3-16d | 4-16d | each block |
| **Ledger Strip to Beam (Face-nailed)** | 3-16d | 4-16d | each joist |
| **Joist on Ledger to Beam (Toe-nailed)** | 3- 8d | 3-10d | per joist |
| **Band Joist to Joist (End-nailed)** | 3-16d | 4-16d | per joist |
| **Band Joist to Sill or Top Plate (Toe-nailed)** | 2-16d[1] | 3-16d | per foot |
| **ROOF SHEATHING** | | | |
| **Wood Structural Panels** | 8d | 10d | (see Table 3.10) |
| **Diagonal Board Sheathing** | | | |
| **1"x6" or 1"x8"** | 2-8d | 2-10d | per support |
| **1"x10" or wider** | 3-8d | 3-10d | per support |
| **CEILING SHEATHING** | | | |
| **Gypsum Wallboard** | 5d coolers | 5d coolers | 7" edge / 10" field |
| **WALL SHEATHING** | | | |
| **Wood Structural Panels** | 8d | 10d | (see Table 3.11) |
| **Structural Fiberboard Panels** | | | |
| **1/2"** | 11 ga. galv. roofing nail (0.120"x1-1/2"long x 7/16" head) | - | 3" edge / 6" field |
| **25/32"** | 11 ga. galv. roofing nail (0.120"x1-3/4"long x 3/8" head) | - | 3" edge / 6" field |
| **Gypsum Wallboard** | 5d coolers | 5d coolers | 7" edge / 10" field |
| **Hardboard** | 8d | 8d | (see Table 3.11) |
| **Particleboard Panels** | 8d | 8d | (see manufacturer) |
| **Diagonal Board Sheathing** | | | |
| **1"x6" or 1"x8"** | 2-8d | 2-10d | per support |
| **1"x10" or wider** | 3-8d | 3-10d | per support |
| **FLOOR SHEATHING** | | | |
| **Wood Structural Panels** | | | |
| **1" or less** | 8d | 10d | 6" edge / 12" field |
| **greater than 1"** | 10d | 16d | 6" edge / 12" field |
| **Diagonal Board Sheathing** | | | |
| **1"x6" or 1"x8"** | 2-8d | 2-10d | per support |
| **1"x10" or wider** | 3-8d | 3-10d | per support |

[1] Nailing requirements are based on wall sheathing nailed 6 inches on-center at the panel edge. Alternative nailing schedules shall be used where wall sheathing nailing is reduced. For example, if wall sheathing is nailed 3 inches on-center at the panel edge to obtain higher shear capacities, nailing requirements for structural members shall be doubled, or alternate connectors shall be used to maintain the load path.

[2] When wall sheathing is continuous over connected members, the tabulated number of nails shall be permitted to be reduced to 1-16d nail per foot.

## Table 3.2 Sill or Bottom Plate to Foundation Connection Requirements for Wind

# Exposure B

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf, Wall DL = 121 plf

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | Foundation Supporting | Roof Span (ft) | Required Capacity of Connection (plf)[1,2,3,4] | | | | | | | | | | | |
| | | | U | L | S | U | L | S | U | L | S | U | L | S |
| Sill Plate to Foundation (Crawl Space or Basement) | Roof & 1 Floor | 12 | - | * | 101R | - | * | 103R | - | * | 111R | - | * | 122R |
| | | 16 | - | | | - | | | - | | | - | | |
| | | 20 | - | | | - | | | - | | | - | | |
| | | 24 | - | | | - | | | - | | | - | | |
| | | 28 | - | | | - | | | - | | | - | | |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |
| | Roof & 2 Floors | 20 | - | * | 154R | - | * | 156R | - | * | 167R | - | * | 184R |
| | | 24 | - | | | - | | | - | | | - | | |
| | | 28 | - | | | - | | | - | | | - | | |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |
| | Roof & 3 Floors | 28 | - | * | 207R | - | * | 209R | - | * | 223R | - | * | 246R |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |
| Wall Bottom Plate to Foundation (Slab-on-Grade) | Roof | 12 | - | 53 | 436[3] | - | 59 | 436[3] | - | 66 | 436[3] | - | 72 | 436[3] |
| | | 16 | - | | | - | | | - | | | - | | |
| | | 20 | - | | | - | | | - | | | - | | |
| | | 24 | - | | | - | | | - | | | - | | |
| | | 28 | - | | | - | | | - | | | - | | |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |
| | Roof & 1 Floor | 20 | - | 53 | 436[3] | - | 59 | 436[3] | - | 66 | 436[3] | - | 72 | 436[3] |
| | | 24 | - | | | - | | | - | | | - | | |
| | | 28 | - | | | - | | | - | | | - | | |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |
| | Roof & 2 Floors | 28 | - | 53 | 436[3] | - | 59 | 436[3] | - | 66 | 436[3] | - | 72 | 436[3] |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |

**U** = Connector uplift load.
**L** = Connector lateral load (perpendicular to the wall).
**S** = Connector shear load (parallel to the wall).
**R** = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

***** Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Table 3.2 Sill or Bottom Plate to Foundation Connection Requirements for Wind (Cont.) — Exposure B

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf, Wall DL = 121 plf

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | Foundation Supporting | Roof Span (ft) | Required Capacity of Connection (plf)[1,2,3,4] | | | | | | | | | | | | | | |
| | | | U | L | S | U | L | S | U | L | S | U | L | S | U | L | S |
| Sill Plate to Foundation (Crawl Space or Basement) | Roof & 1 Floor | 12 | - | * | 134R | - | * | 147R | - | * | 160R | 23 | * | 188R | 49 | * | 218R |
| | | 16 | - | | | - | | | 10 | | | 40 | | | 73 | | |
| | | 20 | - | | | 6 | | | 23 | | | 58 | | | 96 | | |
| | | 24 | - | | | 16 | | | 35 | | | 76 | | | 120 | | |
| | | 28 | 6 | | | 27 | | | 48 | | | 94 | | | 144 | | |
| | | 32 | 14 | | | 37 | | | 61 | | | 112 | | | 168 | | |
| | | 36 | 22 | | | 47 | | | 74 | | | 131 | | | 192 | | |
| | Roof & 2 Floors | 20 | - | * | 202R | - | * | 221R | - | * | 240R | - | * | 282R | 24 | * | 327R |
| | | 24 | - | | | - | | | - | | | 4 | | | 47 | | |
| | | 28 | - | | | - | | | - | | | 22 | | | 71 | | |
| | | 32 | - | | | - | | | - | | | 40 | | | 95 | | |
| | | 36 | - | | | - | | | 1 | | | 58 | | | 119 | | |
| | Roof & 3 Floors | 28 | - | * | 270R | - | * | 295R | - | * | 321R | - | * | 376R | - | * | 437R |
| | | 32 | - | | | - | | | - | | | - | | | 23 | | |
| | | 36 | - | | | - | | | - | | | - | | | 47 | | |
| Wall Bottom Plate to Foundation (Slab-on-Grade) | Roof | 12 | - | 79 | 436[3] | - | 87 | 436[3] | - | 94 | 436[3] | 23 | 111 | 436[3] | 49 | 129 | 436[3] |
| | | 16 | - | | | - | | | 10 | | | 40 | | | 73 | | |
| | | 20 | - | | | 6 | | | 23 | | | 58 | | | 96 | | |
| | | 24 | - | | | 16 | | | 35 | | | 76 | | | 120 | | |
| | | 28 | 6 | | | 27 | | | 48 | | | 94 | | | 144 | | |
| | | 32 | 14 | | | 37 | | | 61 | | | 112 | | | 168 | | |
| | | 36 | 22 | | | 47 | | | 74 | | | 131 | | | 192 | | |
| | Roof & 1 Floor | 20 | - | 79 | 436[3] | - | 87 | 436[3] | - | 94 | 436[3] | - | 111 | 436[3] | 24 | 129 | 436[3] |
| | | 24 | - | | | - | | | - | | | 4 | | | 47 | | |
| | | 28 | - | | | - | | | - | | | 22 | | | 71 | | |
| | | 32 | - | | | - | | | - | | | 40 | | | 95 | | |
| | | 36 | - | | | - | | | 1 | | | 58 | | | 119 | | |
| | Roof & 2 Floors | 28 | - | 79 | 436[3] | - | 87 | 436[3] | - | 94 | 436[3] | - | 111 | 436[3] | - | 129 | 436[3] |
| | | 32 | - | | | - | | | - | | | - | | | 23 | | |
| | | 36 | - | | | - | | | - | | | - | | | 47 | | |

**U** = Connector uplift load.
**L** = Connector lateral load (perpendicular to the wall).
**S** = Connector shear load (parallel to the wall).
**R** = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

***** Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Table 3.2 Sill or Bottom Plate to Foundation Connection Requirements for Wind (Cont.)

# Exposure B

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf, Wall DL = 121 plf

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | Foundation Supporting | Roof Span (ft) | Required Capacity of Connection (plf)[1,2,3,4] | | | | | | | | | | | | | | |
| | | | U | L | S | U | L | S | U | L | S | U | L | S | U | L | S |
| Sill Plate to Foundation (Crawl Space or Basement) | Roof & 1 Floor | 12 | 78 | * | 250R | 109 | * | 284R | 141 | * | 321R | 176 | * | 360R | 231 | * | 422R |
| | | 16 | 107 | | | 145 | | | 184 | | | 226 | | | 294 | | |
| | | 20 | 137 | | | 181 | | | 228 | | | 277 | | | 356 | | |
| | | 24 | 167 | | | 218 | | | 271 | | | 328 | | | 419 | | |
| | | 28 | 197 | | | 254 | | | 315 | | | 379 | | | 483 | | |
| | | 32 | 227 | | | 291 | | | 359 | | | 431 | | | 546 | | |
| | | 36 | 258 | | | 328 | | | 403 | | | 482 | | | 610 | | |
| | Roof & 2 Floors | 20 | 65 | * | 376R | 108 | * | 427R | 155 | * | 482R | 204 | * | 541R | 284 | * | 635R |
| | | 24 | 95 | | | 145 | | | 199 | | | 255 | | | 347 | | |
| | | 28 | 125 | | | 182 | | | 242 | | | 307 | | | 410 | | |
| | | 32 | 155 | | | 218 | | | 286 | | | 358 | | | 473 | | |
| | | 36 | 185 | | | 255 | | | 330 | | | 409 | | | 537 | | |
| | Roof & 3 Floors | 28 | 52 | * | 501R | 109 | * | 570R | 170 | * | 644R | 234 | * | 722R | 338 | * | 847R |
| | | 32 | 82 | | | 146 | | | 214 | | | 285 | | | 401 | | |
| | | 36 | 112 | | | 183 | | | 257 | | | 337 | | | 464 | | |
| Wall Bottom Plate to Foundation (Slab-on-Grade) | Roof | 12 | 78 | 148 | 436[3] | 109 | 168 | 436[3] | 141 | 190 | 436[3] | 176 | 212 | 436[3] | 231 | 249 | 436[3] |
| | | 16 | 107 | | | 145 | | | 184 | | | 226 | | | 294 | | |
| | | 20 | 137 | | | 181 | | | 228 | | | 277 | | | 356 | | |
| | | 24 | 167 | | | 218 | | | 271 | | | 328 | | | 419 | | |
| | | 28 | 197 | | | 254 | | | 315 | | | 379 | | | 483 | | |
| | | 32 | 227 | | | 291 | | | 359 | | | 431 | | | 546 | | |
| | | 36 | 258 | | | 328 | | | 403 | | | 482 | | | 610 | | |
| | Roof & 1 Floor | 20 | 65 | 148 | 436[3] | 108 | 168 | 436[3] | 155 | 190 | 436[3] | 204 | 212 | 436[3] | 284 | 249 | 436[3] |
| | | 24 | 95 | | | 145 | | | 199 | | | 255 | | | 347 | | |
| | | 28 | 125 | | | 182 | | | 242 | | | 307 | | | 410 | | |
| | | 32 | 155 | | | 218 | | | 286 | | | 358 | | | 473 | | |
| | | 36 | 185 | | | 255 | | | 330 | | | 409 | | | 537 | | |
| | Roof & 2 Floors | 28 | 52 | 148 | 436[3] | 109 | 168 | 436[3] | 170 | 190 | 436[3] | 234 | 212 | 436[3] | 338 | 249 | 436[3] |
| | | 32 | 82 | | | 146 | | | 214 | | | 285 | | | 401 | | |
| | | 36 | 112 | | | 183 | | | 257 | | | 337 | | | 464 | | |

**U** = Connector uplift load.
**L** = Connector lateral load (perpendicular to the wall).
**S** = Connector shear load (parallel to the wall).
**R** = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

***** Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Table 3.2 Sill or Bottom Plate to Foundation Connection Requirements for Wind

# Exposure C

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf, Wall DL = 121 plf

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | Foundation Supporting | Roof Span (ft) | Required Capacity of Connection (plf)[1,2,3,4] | | | | | | | | | | | |
| | | | U | L | S | U | L | S | U | L | S | U | L | S |
| Sill Plate to Foundation (Crawl Space or Basement) | Roof & 1 Floor | 12 | - | * | 125R | - | * | 139R | - | * | 154R | 9 | * | 170R |
| | | 16 | - | | | - | | | 7 | | | 24 | | |
| | | 20 | - | | | - | | | 18 | | | 38 | | |
| | | 24 | - | | | 8 | | | 30 | | | 53 | | |
| | | 28 | - | | | 17 | | | 41 | | | 68 | | |
| | | 32 | - | | | 25 | | | 53 | | | 82 | | |
| | | 36 | 5 | | | 34 | | | 65 | | | 97 | | |
| | Roof & 2 Floors | 20 | - | * | 188R | - | * | 209R | - | * | 232R | - | * | 256R |
| | | 24 | - | | | - | | | - | | | - | | |
| | | 28 | - | | | - | | | - | | | - | | |
| | | 32 | - | | | - | | | - | | | 12 | | |
| | | 36 | - | | | - | | | - | | | 27 | | |
| | Roof & 3 Floors | 28 | - | * | 251R | - | * | 279R | - | * | 309R | - | * | 341R |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |
| Wall Bottom Plate to Foundation (Slab-on-Grade) | Roof | 12 | - | 74 | 436[3] | - | 82 | 436[3] | - | 91 | 436[3] | 9 | 100 | 436[3] |
| | | 16 | - | | | - | | | 7 | | | 24 | | |
| | | 20 | - | | | - | | | 18 | | | 38 | | |
| | | 24 | - | | | 8 | | | 30 | | | 53 | | |
| | | 28 | - | | | 17 | | | 41 | | | 68 | | |
| | | 32 | - | | | 25 | | | 53 | | | 82 | | |
| | | 36 | 5 | | | 34 | | | 65 | | | 97 | | |
| | Roof & 1 Floor | 20 | - | 74 | 436[3] | - | 82 | 436[3] | - | 91 | 436[3] | - | 100 | 436[3] |
| | | 24 | - | | | - | | | - | | | - | | |
| | | 28 | - | | | - | | | - | | | - | | |
| | | 32 | - | | | - | | | - | | | 12 | | |
| | | 36 | - | | | - | | | - | | | 27 | | |
| | Roof & 2 Floors | 28 | - | 74 | 436[3] | - | 82 | 436[3] | - | 91 | 436[3] | - | 100 | 436[3] |
| | | 32 | - | | | - | | | - | | | - | | |
| | | 36 | - | | | - | | | - | | | - | | |

**U** = Connector uplift load.
**L** = Connector lateral load (perpendicular to the wall).
**S** = Connector shear load (parallel to the wall).
**R** = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

***** Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Table 3.2 Sill or Bottom Plate to Foundation Connection Requirements for Wind (Cont.)

# Exposure C

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf, Wall DL = 121 plf

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | Foundation Supporting | Roof Span (ft) | Required Capacity of Connection (plf)[1,2,3,4] | | | | | | | | | | | | | | |
| | | | U | L | S | U | L | S | U | L | S | U | L | S | U | L | S |
| Sill Plate to Foundation (Crawl Space or Basement) | Roof & 1 Floor | 12 | 24 | * | 187R | 40 | * | 204R | 56 | * | 222R | 90 | * | 261R | 127 | * | 302R |
| | | 16 | 42 | | | 60 | | | 80 | | | 122 | | | 167 | | |
| | | 20 | 59 | | | 81 | | | 104 | | | 153 | | | 206 | | |
| | | 24 | 77 | | | 103 | | | 129 | | | 186 | | | 246 | | |
| | | 28 | 95 | | | 124 | | | 154 | | | 218 | | | 287 | | |
| | | 32 | 113 | | | 145 | | | 179 | | | 250 | | | 327 | | |
| | | 36 | 131 | | | 166 | | | 203 | | | 282 | | | 367 | | |
| | Roof & 2 Floors | 20 | - | * | 280R | 11 | * | 307R | 34 | * | 334R | 83 | * | 392R | 136 | * | 454R |
| | | 24 | 7 | | | 33 | | | 59 | | | 116 | | | 176 | | |
| | | 28 | 25 | | | 54 | | | 84 | | | 148 | | | 217 | | |
| | | 32 | 43 | | | 75 | | | 109 | | | 180 | | | 257 | | |
| | | 36 | 61 | | | 96 | | | 133 | | | 212 | | | 297 | | |
| | Roof & 3 Floors | 28 | - | * | 374R | - | * | 409R | 14 | * | 445R | 78 | * | 523R | 147 | * | 606R |
| | | 32 | - | | | 5 | | | 39 | | | 110 | | | 187 | | |
| | | 36 | - | | | 26 | | | 63 | | | 142 | | | 227 | | |
| Wall Bottom Plate to Foundation (Slab-on-Grade) | Roof | 12 | 24 | 110 | 436[3] | 40 | 120 | 436[3] | 56 | 131 | 436[3] | 90 | 154 | 436[3] | 127 | 179 | 436[3] |
| | | 16 | 42 | | | 60 | | | 80 | | | 122 | | | 167 | | |
| | | 20 | 59 | | | 81 | | | 104 | | | 153 | | | 206 | | |
| | | 24 | 77 | | | 103 | | | 129 | | | 186 | | | 246 | | |
| | | 28 | 95 | | | 124 | | | 154 | | | 218 | | | 287 | | |
| | | 32 | 113 | | | 145 | | | 179 | | | 250 | | | 327 | | |
| | | 36 | 131 | | | 166 | | | 203 | | | 282 | | | 367 | | |
| | Roof & 1 Floor | 20 | - | 110 | 436[3] | 11 | 120 | 436[3] | 34 | 131 | 436[3] | 83 | 154 | 436[3] | 136 | 179 | 436[3] |
| | | 24 | 7 | | | 33 | | | 59 | | | 116 | | | 176 | | |
| | | 28 | 25 | | | 54 | | | 84 | | | 148 | | | 217 | | |
| | | 32 | 43 | | | 75 | | | 109 | | | 180 | | | 257 | | |
| | | 36 | 61 | | | 96 | | | 133 | | | 212 | | | 297 | | |
| | Roof & 2 Floors | 28 | - | 110 | 436[3] | - | 120 | 436[3] | 14 | 131 | 436[3] | 78 | 154 | 436[3] | 147 | 179 | 436[3] |
| | | 32 | - | | | 5 | | | 39 | | | 110 | | | 187 | | |
| | | 36 | - | | | 26 | | | 63 | | | 142 | | | 227 | | |

**U** = Connector uplift load.
**L** = Connector lateral load (perpendicular to the wall).
**S** = Connector shear load (parallel to the wall).
**R** = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

***** Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Table 3.2 Sill or Bottom Plate to Foundation Connection Requirements for Wind (Cont.) — Exposure C

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf, Wall DL = 121 plf

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | Foundation Supporting | Roof Span (ft) | Required Capacity of Connection (plf)[1,2,3,4] | | | | | | | | | | | | | | |
| | | | U | L | S | U | L | S | U | L | S | U | L | S | U | L | S |
| Sill Plate to Foundation (Crawl Space or Basement) | Roof & 1 Floor | 12 | 167 | * | 347R | 210 | * | 395R | 255 | * | 446R | 303 | * | 500R | 380 | * | 587R |
| | | 16 | 215 | | | 267 | | | 322 | | | 380 | | | 474 | | |
| | | 20 | 263 | | | 324 | | | 389 | | | 458 | | | 568 | | |
| | | 24 | 312 | | | 382 | | | 456 | | | 535 | | | 662 | | |
| | | 28 | 361 | | | 440 | | | 524 | | | 614 | | | 757 | | |
| | | 32 | 410 | | | 498 | | | 592 | | | 692 | | | 852 | | |
| | | 36 | 459 | | | 556 | | | 660 | | | 770 | | | 947 | | |
| | Roof & 2 Floors | 20 | 193 | * | 522R | 254 | * | 593R | 319 | * | 670R | 388 | * | 751R | 498 | * | 881R |
| | | 24 | 242 | | | 312 | | | 386 | | | 465 | | | 592 | | |
| | | 28 | 291 | | | 370 | | | 454 | | | 544 | | | 687 | | |
| | | 32 | 340 | | | 428 | | | 522 | | | 622 | | | 782 | | |
| | | 36 | 389 | | | 486 | | | 590 | | | 700 | | | 877 | | |
| | Roof & 3 Floors | 28 | 221 | * | 696R | 300 | * | 792R | 384 | * | 894R | 474 | * | 1002R | 617 | * | 1176R |
| | | 32 | 270 | | | 358 | | | 452 | | | 552 | | | 712 | | |
| | | 36 | 319 | | | 416 | | | 520 | | | 630 | | | 807 | | |
| Wall Bottom Plate to Foundation (Slab-on-Grade) | Roof | 12 | 167 | 205 | 436[3] | 210 | 233 | 436[3] | 255 | 263 | 436[3] | 303 | 295 | 436[3] | 380 | 346 | 436[3] |
| | | 16 | 215 | | | 267 | | | 322 | | | 380 | | | 474 | | |
| | | 20 | 263 | | | 324 | | | 389 | | | 458 | | | 568 | | |
| | | 24 | 312 | | | 382 | | | 456 | | | 535 | | | 662 | | |
| | | 28 | 361 | | | 440 | | | 524 | | | 614 | | | 757 | | |
| | | 32 | 410 | | | 498 | | | 592 | | | 692 | | | 852 | | |
| | | 36 | 459 | | | 556 | | | 660 | | | 770 | | | 947 | | |
| | Roof & 1 Floor | 20 | 193 | 205 | 436[3] | 254 | 233 | 436[3] | 319 | 263 | 436[3] | 388 | 295 | 436[3] | 498 | 346 | 436[3] |
| | | 24 | 242 | | | 312 | | | 386 | | | 465 | | | 592 | | |
| | | 28 | 291 | | | 370 | | | 454 | | | 544 | | | 687 | | |
| | | 32 | 340 | | | 428 | | | 522 | | | 622 | | | 782 | | |
| | | 36 | 389 | | | 486 | | | 590 | | | 700 | | | 877 | | |
| | Roof & 2 Floors | 28 | 221 | 205 | 436[3] | 300 | 233 | 436[3] | 384 | 263 | 436[3] | 474 | 295 | 436[3] | 617 | 346 | 436[3] |
| | | 32 | 270 | | | 358 | | | 452 | | | 552 | | | 712 | | |
| | | 36 | 319 | | | 416 | | | 520 | | | 630 | | | 807 | | |

**U** = Connector uplift load.
**L** = Connector lateral load (perpendicular to the wall).
**S** = Connector shear load (parallel to the wall).
**R** = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

***** Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Footnotes for Table 3.2

[1] Tabulated uplift and lateral loads shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

[2] Tabulated connection requirements are based on total uplift minus the roof assembly dead load of 9 psf (0.6 x 15 psf = 9 psf) and wall assembly dead load of 73 plf (0.6 x 121 plf).

[3] Tabulated shear capacity requirements assume all walls are sheathed in accordance with Section 3.4.4.2. For other wall sheathing types the tabulated shear capacity of the connection shall be divided by the appropriate sheathing type adjustment factor in Table 3.17D.

[4] Tabulated shear capacity is tabulated based upon a 10 ft wall height and 10 ft top plate to ridge height. For other conditions, multiply value by the following adjustment.

| | | Roof + 1 Floor | | Roof + 2 Floors | | Roof + 3 Floors | |
|---|---|---|---|---|---|---|---|
| | **Wall Height** | **8'** | **10'** | **8'** | **10'** | **8'** | **10'** |
| **Roof Pitch** | **Top Plate to Ridge Height (ft)** | **Adjustment Factor** | | | | | |
| **≤6:12** | **0' (flat)** | 0.58 | 0.72 | 0.66 | 0.81 | 0.70 | 0.86 |
| | **5'** | 0.66 | 0.79 | 0.71 | 0.86 | 0.74 | 0.90 |
| | **10'** | 0.74 | 0.87 | 0.76 | 0.91 | 0.78 | 0.94 |
| **>6:12** | **5'** | 0.72 | 0.86 | 0.75 | 0.90 | 0.77 | 0.93 |
| | **10'** | 0.87 | 1.00 | 0.85 | 1.00 | 0.84 | 1.00 |
| | **15'** | 1.01 | 1.14 | 0.95 | 1.10 | 0.91 | 1.07 |
| | **20'** | 1.15 | 1.29 | 1.04 | 1.19 | 0.99 | 1.14 |

## Table 3.2A Sill Plate to Foundation Connections Resisting Shear Loads from Wind*

# Exposure B

(Prescriptive Alternative to Table 3.2)

| Wind Speed 3-second gust (mph) | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Anchor Bolt Size | Foundation Supporting | Building Dimension Perpendicular to Sill Plate (ft) | Number of Bolts Required in Sill Plate[1,2,3,4] | | | | | | | | | | | | | |
| 1/2" | Roof & 1 Floor | 12 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 |
| | | 16 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 20 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | 6 | 7 | 8 |
| | | 24 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 8 | 10 |
| | | 28 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | 32 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 |
| | | 36 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 40 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | 9 | 10 | 11 | 12 | 14 | 16 |
| | | 50 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 15 | 17 | 20 |
| | | 60 | 6 | 6 | 7 | 7 | 8 | 9 | 9 | 11 | 13 | 14 | 16 | 18 | 20 | 24 |
| | | 70 | 7 | 7 | 8 | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 24 | 28 |
| | | 80 | 8 | 8 | 9 | 10 | 10 | 11 | 12 | 14 | 17 | 19 | 21 | 24 | 27 | 32 |
| | Roof & 2 Floors | 20 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 7 | 8 | 9 | 10 | 12 |
| | | 24 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 28 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 17 |
| | | 32 | 5 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 19 |
| | | 36 | 6 | 6 | 6 | 7 | 7 | 8 | 8 | 10 | 11 | 13 | 15 | 16 | 18 | 21 |
| | | 40 | 6 | 6 | 7 | 7 | 8 | 9 | 9 | 11 | 13 | 14 | 16 | 18 | 20 | 24 |
| | | 50 | 8 | 8 | 8 | 9 | 10 | 11 | 12 | 13 | 16 | 18 | 20 | 23 | 25 | 30 |
| | | 60 | 9 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 21 | 24 | 27 | 30 | 35 |
| | | 70 | 10 | 11 | 11 | 12 | 13 | 15 | 16 | 19 | 22 | 25 | 28 | 32 | 35 | 41 |
| | | 80 | 12 | 12 | 13 | 14 | 15 | 17 | 18 | 21 | 25 | 28 | 32 | 36 | 40 | 47 |
| | Roof & 3 Floors | 28 | 6 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 19 | 22 |
| | | 32 | 7 | 7 | 7 | 8 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 19 | 22 | 25 |
| | | 36 | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 22 | 24 | 29 |
| | | 40 | 8 | 8 | 9 | 10 | 10 | 11 | 12 | 14 | 17 | 19 | 21 | 24 | 27 | 32 |
| | | 50 | 10 | 10 | 11 | 12 | 13 | 14 | 15 | 18 | 21 | 24 | 27 | 30 | 34 | 39 |
| | | 60 | 12 | 12 | 13 | 14 | 15 | 17 | 18 | 21 | 25 | 28 | 32 | 36 | 40 | 47 |
| | | 70 | 14 | 14 | 15 | 16 | 18 | 19 | 21 | 25 | 29 | 33 | 37 | 42 | 47 | 55 |
| | | 80 | 16 | 16 | 17 | 19 | 20 | 22 | 24 | 28 | 33 | 37 | 42 | 48 | 54 | 63 |
| 5/8" | Roof & 1 Floor | 12 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 |
| | | 20 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | | 24 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 28 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 8 |
| | | 32 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 9 |
| | | 36 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 9 | 10 |
| | | 40 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | 50 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 60 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 17 |
| | | 70 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 20 |
| | | 80 | 6 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 19 | 22 |
| | Roof & 2 Floors | 20 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 | 7 | 9 |
| | | 24 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 9 | 10 |
| | | 28 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 12 |
| | | 32 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| | | 36 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 15 |
| | | 40 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 14 | 17 |
| | | 50 | 5 | 6 | 6 | 6 | 7 | 8 | 8 | 10 | 11 | 13 | 14 | 16 | 18 | 21 |
| | | 60 | 6 | 7 | 7 | 8 | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 25 |
| | | 70 | 7 | 8 | 8 | 9 | 10 | 10 | 11 | 13 | 15 | 17 | 20 | 22 | 25 | 29 |
| | | 80 | 8 | 9 | 9 | 10 | 11 | 12 | 13 | 15 | 17 | 20 | 23 | 25 | 28 | 33 |
| | Roof & 3 Floors | 28 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | 8 | 10 | 11 | 12 | 14 | 16 |
| | | 32 | 5 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 10 | 11 | 12 | 14 | 15 | 18 |
| | | 36 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 15 | 17 | 20 |
| | | 40 | 6 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 19 | 22 |
| | | 50 | 7 | 7 | 8 | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 24 | 28 |
| | | 60 | 9 | 9 | 9 | 10 | 11 | 12 | 13 | 15 | 17 | 20 | 23 | 25 | 28 | 33 |
| | | 70 | 10 | 10 | 11 | 12 | 13 | 14 | 15 | 17 | 20 | 23 | 26 | 30 | 33 | 39 |
| | | 80 | 11 | 11 | 12 | 13 | 14 | 16 | 17 | 20 | 23 | 26 | 30 | 34 | 38 | 44 |

* Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Table 3.2A Sill Plate to Foundation Connections Resisting Shear Loads from Wind*

(Prescriptive Alternative to Table 3.2)

# Exposure C

| Wind Speed 3-second gust (mph) | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Anchor Bolt Size | Foundation Supporting | Building Dimension Perpendicular to Sill Plate (ft) | Number of Bolts Required in Sill Plate[1,2,3,4] | | | | | | | | | | | | | |
| 1/2" | Roof & 1 Floor | 12 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 16 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 9 |
| | | 20 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | 24 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 13 |
| | | 28 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 16 |
| | | 32 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 15 | 18 |
| | | 36 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 15 | 17 | 20 |
| | | 40 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 19 | 22 |
| | | 50 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 19 | 21 | 23 | 27 |
| | | 60 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 15 | 17 | 20 | 22 | 25 | 28 | 33 |
| | | 70 | 9 | 9 | 10 | 11 | 13 | 14 | 15 | 17 | 20 | 23 | 26 | 29 | 33 | 38 |
| | | 80 | 10 | 11 | 12 | 13 | 14 | 16 | 17 | 20 | 23 | 26 | 30 | 33 | 37 | 44 |
| | Roof & 2 Floors | 20 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 17 |
| | | 24 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 15 | 17 | 20 |
| | | 28 | 5 | 6 | 6 | 7 | 8 | 8 | 9 | 11 | 12 | 14 | 16 | 18 | 20 | 23 |
| | | 32 | 6 | 7 | 7 | 8 | 9 | 10 | 10 | 12 | 14 | 16 | 18 | 20 | 23 | 26 |
| | | 36 | 7 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 16 | 18 | 20 | 23 | 25 | 30 |
| | | 40 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 15 | 17 | 20 | 22 | 25 | 28 | 33 |
| | | 50 | 9 | 10 | 11 | 12 | 13 | 15 | 16 | 19 | 21 | 24 | 28 | 31 | 35 | 41 |
| | | 60 | 11 | 12 | 13 | 15 | 16 | 17 | 19 | 22 | 26 | 29 | 33 | 37 | 42 | 49 |
| | | 70 | 13 | 14 | 15 | 17 | 19 | 20 | 22 | 26 | 30 | 34 | 39 | 44 | 49 | 57 |
| | | 80 | 14 | 16 | 18 | 19 | 21 | 23 | 25 | 29 | 34 | 39 | 44 | 50 | 56 | 65 |
| | Roof & 3 Floors | 28 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 18 | 21 | 24 | 26 | 31 |
| | | 32 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 21 | 24 | 27 | 30 | 35 |
| | | 36 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 18 | 21 | 24 | 27 | 30 | 34 | 39 |
| | | 40 | 10 | 11 | 12 | 13 | 14 | 16 | 17 | 20 | 23 | 26 | 30 | 33 | 37 | 44 |
| | | 50 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 25 | 28 | 32 | 37 | 42 | 47 | 55 |
| | | 60 | 14 | 16 | 18 | 19 | 21 | 23 | 25 | 29 | 34 | 39 | 44 | 50 | 56 | 65 |
| | | 70 | 17 | 18 | 20 | 22 | 25 | 27 | 29 | 34 | 40 | 45 | 51 | 58 | 65 | 76 |
| | | 80 | 19 | 21 | 23 | 26 | 28 | 31 | 33 | 39 | 45 | 52 | 59 | 66 | 74 | 87 |
| 5/8" | Roof & 1 Floor | 12 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 |
| | | 16 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 20 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 8 |
| | | 24 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 | 7 | 8 | 10 |
| | | 28 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | 32 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 |
| | | 36 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 40 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 16 |
| | | 50 | 5 | 5 | 5 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 19 |
| | | 60 | 5 | 6 | 6 | 7 | 8 | 8 | 9 | 11 | 12 | 14 | 16 | 18 | 20 | 23 |
| | | 70 | 6 | 7 | 7 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 18 | 21 | 23 | 27 |
| | | 80 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 18 | 21 | 23 | 26 | 31 |
| | Roof & 2 Floors | 20 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 12 |
| | | 24 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 28 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 16 |
| | | 32 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | 9 | 10 | 11 | 13 | 14 | 16 | 19 |
| | | 36 | 5 | 5 | 6 | 6 | 7 | 8 | 8 | 10 | 11 | 13 | 14 | 16 | 18 | 21 |
| | | 40 | 5 | 6 | 6 | 7 | 8 | 8 | 9 | 11 | 12 | 14 | 16 | 18 | 20 | 23 |
| | | 50 | 7 | 7 | 8 | 9 | 10 | 10 | 11 | 13 | 15 | 17 | 20 | 22 | 25 | 29 |
| | | 60 | 8 | 9 | 9 | 10 | 11 | 12 | 13 | 16 | 18 | 21 | 23 | 26 | 30 | 35 |
| | | 70 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 21 | 24 | 27 | 31 | 34 | 40 |
| | | 80 | 10 | 11 | 12 | 14 | 15 | 16 | 18 | 21 | 24 | 27 | 31 | 35 | 39 | 46 |
| | Roof & 3 Floors | 28 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 22 |
| | | 32 | 6 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 25 |
| | | 36 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 24 | 28 |
| | | 40 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 18 | 21 | 24 | 26 | 31 |
| | | 50 | 9 | 9 | 10 | 11 | 13 | 14 | 15 | 17 | 20 | 23 | 26 | 29 | 33 | 38 |
| | | 60 | 10 | 11 | 12 | 14 | 15 | 16 | 18 | 21 | 24 | 27 | 31 | 35 | 39 | 46 |
| | | 70 | 12 | 13 | 14 | 16 | 17 | 19 | 21 | 24 | 28 | 32 | 36 | 41 | 46 | 54 |
| | | 80 | 13 | 15 | 16 | 18 | 20 | 22 | 23 | 27 | 32 | 36 | 41 | 47 | 52 | 61 |

* Anchorage required to resist lateral loads shall be determined in the foundation design per Section 1.1.4.

See footnotes 1-4.

## Footnotes for Table 3.2A

# Exposures B and C

[1] Prescriptive limits are based on assumptions in Table 3.2.

[2] Anchor bolts shall be uniformly distributed along the length of the sill plate. For anchor bolt limitations see Section 3.2.1.7.

[3] Sill plates are assumed to be treated Southern Pine.

[4] Tabulated shear capacity is tabulated based upon a 10 ft wall height and 10 ft top plate to ridge height. For other conditions, multiply value by the following adjustment.

| | | Roof + 1 Floor | | Roof + 2 Floors | | Roof + 3 Floors | |
|---|---|---|---|---|---|---|---|
| | Wall Height | 8' | 10' | 8' | 10' | 8' | 10' |
| Roof Pitch | Top Plate to Ridge Height (ft) | Adjustment Factor | | | | | |
| ≤6:12 | 0' (flat) | 0.58 | 0.72 | 0.66 | 0.81 | 0.70 | 0.86 |
| | 5' | 0.66 | 0.79 | 0.71 | 0.86 | 0.74 | 0.90 |
| | 10' | 0.74 | 0.87 | 0.76 | 0.91 | 0.78 | 0.94 |
| >6:12 | 5' | 0.72 | 0.86 | 0.75 | 0.90 | 0.77 | 0.93 |
| | 10' | 0.87 | 1.00 | 0.85 | 1.00 | 0.84 | 1.00 |
| | 15' | 1.01 | 1.14 | 0.95 | 1.10 | 0.91 | 1.07 |
| | 20' | 1.15 | 1.29 | 1.04 | 1.19 | 0.99 | 1.14 |

## Table 3.2B Bottom Plate to Foundation Connections (Anchor Bolts) Resisting Lateral and Shear Loads from Wind

(Prescriptive Alternative to Table 3.2)

**Exposures B and C**

| For Exposures B & C and all Wind Speeds | |
|---|---|
| **Anchor Bolt Diameter (in.)** | **Maximum Anchor Bolt Spacing (in.)[1,2,3,4]** |
| **1/2"** | 31 |
| **5/8"** | 48 |

1 Prescriptive limits are based on assumptions in Table 3.2.

2 When anchor bolts are used to resist uplift, lateral, and shear loads, the maximum anchor bolt spacing shall not exceed the lesser of the tabulated values for uplift loads (Table 3.2C) or lateral and shear loads (Table 3.2B). For other anchor bolt limitations see Section 3.2.1.7 and 3.2.2.3.

3 Tabulated anchor bolt spacings for shear loads assume walls are sheathed in accordance with section 3.4.4.2. For other wall sheathing types the tabulated anchor bolt spacings shall be multiplied by the appropriate sheathing type adjustment factor in Table 3.17D, but in no case shall anchor bolt spacings exceed 6 feet on center.

4 Lateral connections shall be designed to resist the loads in Table 3.5.

## Table 3.2C Sill or Bottom Plate to Foundation Connections (Anchor Bolts) Resisting Uplift Loads from Wind

(Prescriptive Alternative to Table 3.2)

**Exposure B**

| Wind Speed 3-second gust (mph) | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sill or Bottom Plate to Foundation Anchor Bolt Connection Resisting** | **Plate Size** | **Foundation Supporting** | **Maximum Anchor Bolt Spacing (in.)[1,2]** | | | | | | | | | | | | | |
| **Uplift Loads** | **2x4** | | **8' End Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 72 | 72 | 72 | 71 | 57 | 43 | 35 | 30 | 27 | 24 | 22 | 20 |
| | | | **Interior Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 72 | 72 | 72 | 72 | 66 | 50 | 41 | 35 | 31 | 28 | 26 | 23 |
| | **2x6** | | **8' End Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 72 | 72 | 72 | 72 | 68 | 51 | 42 | 36 | 32 | 29 | 26 | 23 |
| | | | **Interior Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 60 | 49 | 42 | 37 | 34 | 31 | 27 |

## Table 3.2C Sill or Bottom Plate to Foundation Connections (Anchor Bolts) Resisting Uplift Loads from Wind

(Prescriptive Alternative to Table 3.2)

**Exposure C**

| Wind Speed 3-second gust (mph) | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sill or Bottom Plate to Foundation Anchor Bolt Connection Resisting** | **Plate Size** | **Foundation Supporting** | **Maximum Anchor Bolt Spacing (in.)[1,2]** | | | | | | | | | | | | | |
| **Uplift Loads** | **2x4** | | **8' End Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 61 | 50 | 43 | 38 | 34 | 29 | 25 | 23 | 20 | 19 | 17 | 16 |
| | | | **Interior Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 71 | 58 | 50 | 44 | 40 | 34 | 30 | 26 | 24 | 22 | 20 | 18 |
| | **2x6** | | **8' End Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 72 | 59 | 51 | 45 | 41 | 35 | 30 | 27 | 25 | 22 | 21 | 19 |
| | | | **Interior Zones** | | | | | | | | | | | | | |
| | | **1-3 stories** | 72 | 72 | 72 | 69 | 60 | 53 | 48 | 40 | 35 | 32 | 29 | 26 | 24 | 22 |

1 Prescriptive limits are based on assumptions in Table 3.2.

2 When anchor bolts are used to resist uplift, lateral, and shear loads, the maximum anchor bolt spacing shall not exceed the lesser of the tabulated values for uplift loads (Table 3.2C) or lateral and shear loads (Table 3.2B). For other anchor bolt limitations see Section 3.2.1.7 and 3.2.2.3.

## Table 3.3 Sill Plate to Foundation Connection Shear Load for Seismic

# GSL = 30 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=30 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Foundation Sill Plate Connection Shear Load, plf[2,3,4,5] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 11 | 15 | 19 | 23 | 27 | 21 | 28 | 36 | 44 | 51 | 31 | 43 | 55 | 66 | 78 |
| | 16 | 12 | 16 | 21 | 26 | 30 | 23 | 32 | 41 | 50 | 59 | 35 | 49 | 62 | 76 | 89 |
| | 20 | 13 | 18 | 24 | 29 | 34 | 26 | 36 | 46 | 56 | 66 | 39 | 54 | 70 | 85 | 100 |
| | 24 | 14 | 20 | 26 | 32 | 38 | 28 | 39 | 51 | 62 | 74 | 42 | 60 | 77 | 94 | 112 |
| | 28 | 16 | 22 | 29 | 35 | 40 | 30 | 43 | 56 | 68 | 77 | 46 | 65 | 85 | 104 | 117 |
| | 32 | 17 | 24 | 31 | 38[6] | - | 33 | 47 | 61 | 75[6] | - | 50 | 71 | 92 | 113[6] | - |
| | 36 | 18 | 26 | 34 | 37[6] | - | 35 | 51 | 66 | 72[6] | - | 54 | 77 | 100 | 110[6] | - |
| Roof, Ceiling, & 2 Floors | 12 | 19 | 25 | 32 | 39 | 45 | 36 | 49 | 62 | 75 | 88 | 55 | 74 | 94 | 114 | 133 |
| | 16 | 21 | 29 | 36 | 44 | 52 | 40 | 55 | 70 | 86 | 101 | 61 | 84 | 107 | 130 | 153 |
| | 20 | 23 | 32 | 41 | 50 | 58 | 45 | 62 | 79 | 96 | 114 | 67 | 94 | 120 | 146 | 172 |
| | 24 | 25 | 35 | 45 | 55 | 65 | 49 | 68 | 88 | 107 | 126 | 74 | 103 | 133 | 162 | 191 |
| | 28 | 27 | 38 | 50 | 61 | 69 | 53 | 75 | 96 | 118 | 133 | 80 | 113 | 146 | 178 | 202 |
| | 32 | 30 | 42 | 54 | 66[6] | - | 57 | 81 | 105 | 128[6] | - | 87 | 123 | 159 | 195[6] | - |
| | 36 | 32 | 45 | 58 | 64[6] | - | 62 | 87 | 113 | 125[6] | - | 93 | 133 | 172 | 189[6] | - |
| Roof, Ceiling & 3 Floors | 12 | 28 | 38 | 47 | 57 | 67 | 54 | 73 | 92 | 111 | 130 | 82 | 110 | 139 | 168 | 197 |
| | 16 | 31 | 42 | 54 | 65 | 77 | 60 | 82 | 105 | 127 | 149 | 91 | 125 | 158 | 192 | 226 |
| | 20 | 34 | 47 | 60 | 74 | 87 | 66 | 92 | 117 | 143 | 168 | 101 | 139 | 178 | 216 | 255 |
| | 24 | 38 | 52 | 67 | 82 | 96 | 73 | 101 | 130 | 159 | 187 | 110 | 154 | 197 | 240 | 284 |
| | 28 | 41 | 57 | 74 | 90 | 102 | 79 | 111 | 143 | 175 | 197 | 120 | 168 | 216 | 265 | 299 |
| | 32 | 44 | 62 | 80 | 98[6] | - | 86 | 121 | 156 | 191[6] | - | 130 | 183 | 236 | 289[6] | - |
| | 36 | 47 | 67 | 87 | 95[6] | - | 92 | 130 | 168 | 185[6] | - | 139 | 197 | 255 | 281[6] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Foundation Sill Plate Connection Shear Load, plf[2,3,4,5] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 42 | 58 | 73 | 89 | 104 | 52 | 71 | 91 | 110 | 129 | 73 | 101 | 128 | 155 | 182 |
| | 16 | 47 | 65 | 83 | 101 | 119 | 58 | 81 | 103 | 125 | 148 | 82 | 114 | 145 | 177 | 209 |
| | 20 | 52 | 72 | 93 | 114 | 134 | 64 | 90 | 115 | 141 | 167 | 91 | 127 | 163 | 199 | 235 |
| | 24 | 57 | 80 | 103 | 126 | 150 | 70 | 99 | 128 | 157 | 185 | 99 | 140 | 180 | 221 | 261 |
| | 28 | 62 | 88 | 113 | 139 | 157 | 77 | 108 | 140 | 172 | 195 | 108 | 153 | 198 | 243 | 275 |
| | 32 | 67 | 95 | 123 | 152[6] | - | 83 | 118 | 153 | 188[6] | - | 117 | 166 | 215 | 265[6] | - |
| | 36 | 72 | 103 | 133 | 147[6] | - | 89 | 127 | 165 | 182[6] | - | 125 | 179 | 233 | 257[6] | - |
| Roof, Ceiling, & 2 Floors | 12 | 73 | 100 | 126 | 152 | 178 | 91 | 123 | 156 | 188 | 221 | 128 | 174 | 220 | 266 | 312 |
| | 16 | 82 | 112 | 143 | 174 | 204 | 101 | 139 | 177 | 215 | 253 | 143 | 196 | 250 | 303 | 357 |
| | 20 | 90 | 125 | 160 | 195 | 230 | 112 | 155 | 199 | 242 | 285 | 158 | 219 | 280 | 341 | 402 |
| | 24 | 99 | 138 | 178 | 217 | 257 | 123 | 171 | 220 | 269 | 318 | 173 | 242 | 310 | 379 | 448 |
| | 28 | 108 | 151 | 195 | 239 | 270 | 133 | 188 | 242 | 296 | 335 | 188 | 264 | 341 | 417 | 472 |
| | 32 | 116 | 164 | 213 | 261[6] | - | 144 | 204 | 263 | 323[6] | - | 203 | 287 | 371 | 455[6] | - |
| | 36 | 125 | 178 | 230 | 253[6] | - | 155 | 220 | 285 | 314[6] | - | 218 | 310 | 402 | 442[6] | - |
| Roof, Ceiling & 3 Floors | 12 | 109 | 148 | 187 | 225 | 264 | 135 | 183 | 231 | 279 | 327 | 191 | 258 | 326 | 393 | 461 |
| | 16 | 122 | 167 | 212 | 257 | 303 | 151 | 207 | 263 | 319 | 375 | 213 | 292 | 371 | 450 | 528 |
| | 20 | 135 | 187 | 238 | 290 | 341 | 167 | 231 | 295 | 359 | 423 | 236 | 326 | 416 | 506 | 596 |
| | 24 | 148 | 206 | 264 | 322 | 380 | 183 | 255 | 327 | 399 | 471 | 258 | 360 | 461 | 563 | 664 |
| | 28 | 161 | 225 | 290 | 355 | 401 | 199 | 279 | 359 | 439 | 496 | 281 | 394 | 506 | 619 | 700 |
| | 32 | 174 | 245 | 316 | 387[6] | - | 215 | 303 | 391 | 479[6] | - | 303 | 428 | 552 | 676[6] | - |
| | 36 | 187 | 264 | 342 | 376[6] | - | 231 | 327 | 424 | 466[6] | - | 326 | 461 | 597 | 657[6] | - |

See footnotes 1-6.

## Table 3.3 Sill Plate to Foundation Connection Shear Load for Seismic (Cont.)

# GSL = 50 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=50 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Foundation Sill Plate Connection Shear Load, plf[2,3,4,5] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 13 | 17 | 22 | 27 | 31 | 24 | 34 | 43 | 52 | 61 | 37 | 51 | 65 | 79 | 92 |
| | 16 | 14 | 20 | 25 | 31 | 36 | 28 | 38 | 49 | 60 | 70 | 42 | 58 | 74 | 90 | 107 |
| | 20 | 16 | 22 | 28 | 35 | 41 | 31 | 43 | 55 | 68 | 80 | 46 | 65 | 84 | 102 | 121 |
| | 24 | 17 | 25 | 32 | 39 | 46 | 34 | 48 | 62 | 76 | 89 | 51 | 72 | 93 | 114 | 135 |
| | 28 | 19 | 27 | 35 | 43 | 49 | 37 | 52 | 68 | 83 | 95 | 56 | 79 | 103 | 126 | 143 |
| | 32 | 21 | 29 | 38 | 47[6] | - | 40 | 57 | 74 | 91[6] | - | 61 | 87 | 113 | 139[6] | - |
| | 36 | 22 | 32 | 42 | 46[6] | - | 43 | 62 | 81 | 89[6] | - | 66 | 94 | 122 | 135[6] | - |
| Roof, Ceiling, & 2 Floors | 12 | 21 | 28 | 36 | 43 | 51 | 40 | 55 | 69 | 84 | 98 | 61 | 83 | 105 | 127 | 149 |
| | 16 | 23 | 32 | 41 | 50 | 58 | 45 | 62 | 79 | 96 | 113 | 68 | 94 | 120 | 146 | 172 |
| | 20 | 26 | 36 | 46 | 56 | 66 | 50 | 70 | 89 | 109 | 129 | 76 | 106 | 135 | 165 | 195 |
| | 24 | 28 | 40 | 51 | 63 | 74 | 55 | 77 | 99 | 122 | 144 | 84 | 117 | 151 | 184 | 218 |
| | 28 | 31 | 44 | 56 | 69 | 78 | 60 | 85 | 110 | 134 | 152 | 91 | 129 | 166 | 203 | 230 |
| | 32 | 34 | 48 | 62 | 76[6] | - | 65 | 92 | 120 | 147[6] | - | 99 | 140 | 181 | 223[6] | - |
| | 36 | 36 | 52 | 67 | 74[6] | - | 70 | 100 | 130 | 143[6] | - | 107 | 152 | 197 | 217[6] | - |
| Roof, Ceiling & 3 Floors | 12 | 30 | 41 | 51 | 62 | 73 | 58 | 79 | 100 | 121 | 141 | 88 | 120 | 151 | 183 | 214 |
| | 16 | 34 | 46 | 59 | 71 | 84 | 65 | 90 | 114 | 139 | 163 | 99 | 136 | 173 | 210 | 247 |
| | 20 | 37 | 52 | 66 | 81 | 95 | 73 | 101 | 129 | 157 | 185 | 110 | 152 | 195 | 237 | 280 |
| | 24 | 41 | 57 | 74 | 90 | 106 | 80 | 111 | 143 | 175 | 206 | 121 | 169 | 217 | 265 | 312 |
| | 28 | 45 | 63 | 81 | 99 | 112 | 87 | 122 | 157 | 193 | 218 | 132 | 185 | 239 | 292 | 330 |
| | 32 | 49 | 69 | 89 | 109[6] | - | 94 | 133 | 172 | 211[6] | - | 143 | 202 | 260 | 319[6] | - |
| | 36 | 52 | 74 | 96 | 106[6] | - | 101 | 144 | 186 | 205[6] | - | 154 | 218 | 282 | 311[6] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Foundation Sill Plate Connection Shear Load, plf[2,3,4,5] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 50 | 68 | 87 | 105 | 124 | 62 | 85 | 107 | 130 | 153 | 87 | 119 | 151 | 184 | 216 |
| | 16 | 56 | 78 | 99 | 121 | 143 | 69 | 96 | 123 | 150 | 177 | 98 | 136 | 174 | 212 | 249 |
| | 20 | 62 | 87 | 112 | 137 | 162 | 77 | 108 | 139 | 170 | 201 | 109 | 152 | 196 | 240 | 283 |
| | 24 | 69 | 97 | 125 | 153 | 182 | 85 | 120 | 155 | 190 | 225 | 120 | 169 | 218 | 268 | 317 |
| | 28 | 75 | 106 | 138 | 169 | 192 | 93 | 132 | 171 | 210 | 238 | 131 | 186 | 241 | 296 | 335 |
| | 32 | 81 | 116 | 151 | 186[6] | - | 101 | 144 | 187 | 230[6] | - | 142 | 203 | 263 | 324[6] | - |
| | 36 | 88 | 126 | 164 | 181[6] | - | 109 | 156 | 203 | 224[6] | - | 153 | 220 | 286 | 316[6] | - |
| Roof, Ceiling, & 2 Floors | 12 | 82 | 111 | 141 | 170 | 200 | 101 | 138 | 174 | 211 | 247 | 143 | 194 | 246 | 297 | 348 |
| | 16 | 92 | 126 | 161 | 196 | 230 | 114 | 156 | 199 | 242 | 285 | 160 | 221 | 281 | 341 | 402 |
| | 20 | 102 | 142 | 181 | 221 | 261 | 126 | 175 | 225 | 274 | 323 | 178 | 247 | 317 | 386 | 456 |
| | 24 | 112 | 157 | 202 | 247 | 292 | 139 | 194 | 250 | 306 | 361 | 196 | 274 | 353 | 431 | 509 |
| | 28 | 122 | 172 | 222 | 273 | 308 | 151 | 213 | 276 | 338 | 382 | 213 | 301 | 388 | 476 | 538 |
| | 32 | 132 | 188 | 243 | 298[6] | - | 164 | 233 | 301 | 369[6] | - | 231 | 328 | 424 | 521[6] | - |
| | 36 | 143 | 203 | 264 | 290[6] | - | 177 | 252 | 326 | 360[6] | - | 249 | 355 | 460 | 507[6] | - |
| Roof, Ceiling & 3 Floors | 12 | 119 | 161 | 203 | 245 | 287 | 147 | 199 | 251 | 303 | 355 | 207 | 281 | 354 | 428 | 501 |
| | 16 | 133 | 182 | 232 | 281 | 331 | 165 | 226 | 287 | 348 | 410 | 232 | 318 | 405 | 491 | 578 |
| | 20 | 147 | 204 | 261 | 318 | 375 | 183 | 253 | 323 | 394 | 464 | 257 | 357 | 456 | 555 | 654 |
| | 24 | 162 | 226 | 290 | 355 | 419 | 201 | 280 | 360 | 439 | 519 | 283 | 395 | 507 | 619 | 731 |
| | 28 | 177 | 248 | 320 | 391 | 442 | 219 | 307 | 396 | 485 | 548 | 308 | 433 | 558 | 683 | 772 |
| | 32 | 191 | 270 | 349 | 428[6] | - | 237 | 335 | 432 | 530[6] | - | 334 | 472 | 610 | 747[6] | - |
| | 36 | 206 | 292 | 378 | 417[6] | - | 255 | 362 | 469 | 516[6] | - | 360 | 510 | 661 | 728[6] | - |

See footnotes 1-6.

## Table 3.3 Sill Plate to Foundation Connection Shear Load for Seismic (Cont.)

# GSL = 70 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=70 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Foundation Sill Plate Connection Shear Load, plf[2,3,4,5] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 13 | 18 | 23 | 28 | 33 | 26 | 36 | 45 | 55 | 65 | 39 | 54 | 69 | 83 | 98 |
| | 16 | 15 | 21 | 27 | 33 | 39 | 29 | 41 | 52 | 64 | 75 | 44 | 62 | 79 | 96 | 114 |
| | 20 | 17 | 24 | 30 | 37 | 44 | 33 | 46 | 59 | 72 | 85 | 50 | 69 | 89 | 109 | 129 |
| | 24 | 19 | 26 | 34 | 42 | 49 | 36 | 51 | 66 | 81 | 96 | 55 | 77 | 100 | 122 | 145 |
| | 28 | 20 | 29 | 38 | 46 | 52 | 40 | 56 | 73 | 89 | 101 | 60 | 85 | 110 | 136 | 154 |
| | 32 | 22 | 32 | 41 | 51[6] | - | 43 | 61 | 80 | 98[6] | - | 65 | 93 | 121 | 149[6] | - |
| | 36 | 24 | 34 | 45 | 49[6] | - | 46 | 67 | 87 | 96[6] | - | 70 | 101 | 131 | 145[6] | - |
| Roof, Ceiling, & 2 Floors | 12 | 22 | 29 | 37 | 45 | 53 | 42 | 57 | 72 | 87 | 102 | 63 | 86 | 109 | 132 | 155 |
| | 16 | 24 | 33 | 43 | 52 | 61 | 47 | 65 | 83 | 101 | 118 | 71 | 98 | 125 | 152 | 179 |
| | 20 | 27 | 38 | 48 | 59 | 69 | 52 | 73 | 93 | 114 | 135 | 79 | 110 | 142 | 173 | 204 |
| | 24 | 30 | 42 | 54 | 66 | 78 | 58 | 81 | 104 | 127 | 151 | 87 | 123 | 158 | 193 | 228 |
| | 28 | 32 | 46 | 59 | 73 | 82 | 63 | 89 | 115 | 141 | 159 | 96 | 135 | 174 | 213 | 241 |
| | 32 | 35 | 50 | 65 | 79[6] | - | 68 | 97 | 126 | 154[6] | - | 104 | 147 | 190 | 234[6] | - |
| | 36 | 38 | 54 | 70 | 77[6] | - | 74 | 105 | 136 | 150[6] | - | 112 | 159 | 207 | 228[6] | - |
| Roof, Ceiling & 3 Floors | 12 | 31 | 42 | 53 | 64 | 75 | 60 | 82 | 103 | 124 | 146 | 91 | 124 | 156 | 189 | 221 |
| | 16 | 35 | 48 | 61 | 74 | 87 | 68 | 93 | 118 | 143 | 168 | 102 | 141 | 179 | 217 | 255 |
| | 20 | 39 | 54 | 69 | 84 | 98 | 75 | 104 | 133 | 162 | 191 | 114 | 158 | 202 | 246 | 290 |
| | 24 | 43 | 59 | 76 | 93 | 110 | 83 | 115 | 148 | 181 | 214 | 125 | 175 | 225 | 274 | 324 |
| | 28 | 46 | 65 | 84 | 103 | 116 | 90 | 127 | 163 | 200 | 226 | 137 | 192 | 247 | 303 | 342 |
| | 32 | 50 | 71 | 92 | 113[6] | - | 98 | 138 | 178 | 219[6] | - | 148 | 209 | 270 | 332[6] | - |
| | 36 | 54 | 77 | 100 | 110[6] | - | 105 | 149 | 194 | 213[6] | - | 159 | 226 | 293 | 323[6] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Foundation Sill Plate Connection Shear Load, plf[2,3,4,5] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 53 | 72 | 92 | 112 | 131 | 65 | 90 | 114 | 138 | 163 | 92 | 127 | 161 | 195 | 229 |
| | 16 | 60 | 83 | 106 | 129 | 152 | 74 | 102 | 131 | 160 | 189 | 104 | 144 | 185 | 225 | 266 |
| | 20 | 66 | 93 | 120 | 147 | 173 | 82 | 115 | 148 | 182 | 215 | 116 | 163 | 209 | 256 | 303 |
| | 24 | 73 | 104 | 134 | 164 | 194 | 91 | 128 | 166 | 203 | 241 | 128 | 181 | 234 | 287 | 339 |
| | 28 | 80 | 114 | 148 | 182 | 206 | 99 | 141 | 183 | 225 | 255 | 140 | 199 | 258 | 317 | 359 |
| | 32 | 87 | 125 | 162 | 199[6] | - | 108 | 154 | 201 | 246[6] | - | 152 | 218 | 283 | 348[6] | - |
| | 36 | 94 | 135 | 176 | 194[6] | - | 117 | 167 | 218 | 241[6] | - | 165 | 236 | 307 | 339[6] | - |
| Roof, Ceiling, & 2 Floors | 12 | 85 | 116 | 147 | 177 | 208 | 105 | 143 | 182 | 220 | 258 | 149 | 202 | 256 | 310 | 363 |
| | 16 | 96 | 132 | 168 | 204 | 240 | 118 | 163 | 208 | 253 | 298 | 167 | 230 | 293 | 357 | 420 |
| | 20 | 106 | 148 | 190 | 231 | 273 | 132 | 183 | 235 | 287 | 338 | 186 | 259 | 331 | 404 | 477 |
| | 24 | 117 | 164 | 211 | 259 | 306 | 145 | 204 | 262 | 320 | 379 | 205 | 287 | 369 | 452 | 534 |
| | 28 | 128 | 181 | 233 | 286 | 324 | 159 | 224 | 289 | 354 | 401 | 224 | 315 | 407 | 499 | 565 |
| | 32 | 139 | 197 | 255 | 313[6] | - | 172 | 244 | 316 | 388[6] | - | 243 | 344 | 445 | 547[6] | - |
| | 36 | 150 | 213 | 277 | 305[6] | - | 186 | 264 | 343 | 378[6] | - | 262 | 373 | 484 | 533[6] | - |
| Roof, Ceiling & 3 Floors | 12 | 122 | 166 | 209 | 253 | 296 | 151 | 205 | 259 | 313 | 367 | 213 | 289 | 365 | 441 | 517 |
| | 16 | 137 | 188 | 240 | 291 | 342 | 170 | 233 | 297 | 360 | 424 | 240 | 329 | 418 | 508 | 597 |
| | 20 | 152 | 211 | 270 | 329 | 388 | 189 | 262 | 335 | 408 | 481 | 266 | 369 | 472 | 575 | 678 |
| | 24 | 168 | 234 | 301 | 367 | 434 | 208 | 290 | 373 | 455 | 538 | 293 | 409 | 525 | 642 | 758 |
| | 28 | 183 | 257 | 332 | 406 | 459 | 227 | 319 | 411 | 503 | 569 | 319 | 449 | 579 | 709 | 801 |
| | 32 | 198 | 280 | 362 | 444[6] | - | 246 | 347 | 449 | 550[6] | - | 346 | 489 | 633 | 776[6] | - |
| | 36 | 214 | 303 | 393 | 433[6] | - | 265 | 376 | 487 | 536[6] | - | 373 | 530 | 686 | 756[6] | - |

See footnotes 1-6.

## Footnotes to Table 3.3

[1] Tabulated values are calculated using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$, in ASCE 7-22. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

[2] Tabulated foundation sill plate shear connection load is applicable to the minimum dimension, W, of the diaphragm for a rectangular building with dimension W x L. The foundation sill plate shear connection load for the side corresponding to the maximum building dimension, L, need not exceed the tabulated loads for L/W=1.0.

[3] Where the lateral force resisting system is other than wood structural panel shear walls, tabulated foundation sill plate shear connection loads shall be increased by multiplying by 3.25.

[4] Foundation sill plate shear connection load can be determined for other load cases by multiplying by the appropriate adjustment factor given in the following table:

| Foundation Supporting | Minimum Building Dimension, W (ft.) | Roof/Ceiling Assembly = 15 psf | | | | Roof/Ceiling Assembly = 25 psf | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf |
| | | Foundation sill plate connection shear load adjustment factors | | | | | | | |
| Roof, Ceiling & 1 Floor | 12 | 1.33 | 1.41 | 1.00 | 1.10 | 1.51 | 1.60 | 1.18 | 1.28 |
| | 16 | 1.30 | 1.39 | 1.00 | 1.12 | 1.49 | 1.59 | 1.20 | 1.31 |
| | 20 | 1.27 | 1.38 | 1.00 | 1.13 | 1.47 | 1.58 | 1.21 | 1.33 |
| | 24 | 1.24 | 1.37 | 1.00 | 1.14 | 1.45 | 1.57 | 1.21 | 1.35 |
| | 28 | 1.22 | 1.36 | 1.00 | 1.15 | 1.44 | 1.57 | 1.22 | 1.37 |
| | 32 | 1.21 | 1.35 | 1.00 | 1.15 | 1.43 | 1.56 | 1.23 | 1.38 |
| | 36 | 1.19 | 1.34 | 1.00 | 1.16 | 1.42 | 1.56 | 1.23 | 1.39 |
| Roof, Ceiling & 2 Floors | 12 | 1.36 | 1.46 | 1.00 | 1.13 | 1.48 | 1.58 | 1.12 | 1.25 |
| | 16 | 1.32 | 1.45 | 1.00 | 1.15 | 1.44 | 1.57 | 1.13 | 1.28 |
| | 20 | 1.29 | 1.43 | 1.00 | 1.17 | 1.42 | 1.56 | 1.13 | 1.30 |
| | 24 | 1.27 | 1.42 | 1.00 | 1.18 | 1.40 | 1.55 | 1.14 | 1.32 |
| | 28 | 1.25 | 1.41 | 1.00 | 1.19 | 1.38 | 1.54 | 1.14 | 1.33 |
| | 32 | 1.23 | 1.40 | 1.00 | 1.19 | 1.36 | 1.54 | 1.14 | 1.34 |
| | 36 | 1.21 | 1.39 | 1.00 | 1.20 | 1.35 | 1.53 | 1.15 | 1.35 |
| Roof, Ceiling & 3 Floors | 12 | 1.37 | 1.49 | 1.00 | 1.14 | 1.46 | 1.57 | 1.09 | 1.23 |
| | 16 | 1.34 | 1.47 | 1.00 | 1.16 | 1.42 | 1.56 | 1.09 | 1.26 |
| | 20 | 1.30 | 1.46 | 1.00 | 1.18 | 1.40 | 1.55 | 1.10 | 1.28 |
| | 24 | 1.28 | 1.45 | 1.00 | 1.20 | 1.37 | 1.54 | 1.10 | 1.30 |
| | 28 | 1.25 | 1.44 | 1.00 | 1.21 | 1.35 | 1.53 | 1.10 | 1.31 |
| | 32 | 1.24 | 1.43 | 1.00 | 1.21 | 1.34 | 1.53 | 1.11 | 1.32 |
| | 36 | 1.22 | 1.42 | 1.00 | 1.22 | 1.32 | 1.52 | 1.11 | 1.33 |

[5] Effective seismic weight used to determine foundation sill plate anchorage load includes 20% of ASD ground snow load, $p_{g(ASD)}$, where the ASD ground snow load, $p_{g(ASD)}$, exceeds 30 psf. $S_{DS}$ used for SDC A, B, C, $D_0$, $D_1$ and $D_2$ are as follows: $S_{DS}$=0.17 for SDC A; $S_{DS}$=0.33 for SDC B; $S_{DS}$=0.50 for SDC C; $S_{DS}$=0.67 for SDC $D_0$; $S_{DS}$=0.83 for SDC $D_1$; $S_{DS}$=1.17 for SDC $D_2$.

[6] Tabulated foundation sill plate anchorage loads are based on a building length, L, equal to 80 ft.

## Table 3.3A1 1/2" Anchor Bolts - Foundation Sill Plate Connection Resisting Shear Loads from Seismic (prescriptive alternative to Table 3.3)

**GSL = 30 psf**
**ϕ = 1/2"**

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=30 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A L/W | | | | | SDC B L/W | | | | | SDC C L/W | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 |
| | 28 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | 32 | 1 | 1 | 1 | 2[8] | - | 1 | 2 | 2 | 3[8] | - | 2 | 3 | 3 | 4[8] | - |
| | 36 | 1 | 1 | 2 | 2[8] | - | 2 | 2 | 3 | 3[8] | - | 2 | 3 | 4 | 4[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 20 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 24 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 5 |
| | 28 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 3 | 3 | 4 | 5 | 6 |
| | 32 | 1 | 2 | 2 | 2[8] | - | 2 | 3 | 4 | 4[8] | - | 3 | 4 | 5 | 6[8] | - |
| | 36 | 2 | 2 | 2 | 3[8] | - | 3 | 3 | 4 | 5[8] | - | 4 | 5 | 6 | 7[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 16 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 20 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 4 | 5 |
| | 24 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 28 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 6 | 4 | 5 | 6 | 7 | 8 |
| | 32 | 2 | 2 | 3 | 3[8] | - | 3 | 4 | 5 | 6[8] | - | 4 | 6 | 7 | 9[8] | - |
| | 36 | 2 | 3 | 3 | 4[8] | - | 4 | 5 | 6 | 7[8] | - | 5 | 7 | 9 | 10[8] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ L/W | | | | | SDC $D_1$ L/W | | | | | SDC $D_2$ L/W | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 16 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 20 | 1 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 5 |
| | 24 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 4 | 5 | 6 |
| | 28 | 2 | 3 | 3 | 4 | 5 | 2 | 3 | 4 | 5 | 6 | 3 | 4 | 6 | 7 | 8 |
| | 32 | 2 | 3 | 4 | 5[8] | - | 3 | 4 | 5 | 6[8] | - | 4 | 5 | 7 | 8[8] | - |
| | 36 | 3 | 4 | 5 | 5[8] | - | 3 | 5 | 6 | 7[8] | - | 5 | 6 | 8 | 9[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 16 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 5 | 6 |
| | 20 | 2 | 3 | 3 | 4 | 5 | 3 | 3 | 4 | 5 | 6 | 3 | 5 | 6 | 7 | 8 |
| | 24 | 3 | 4 | 4 | 5 | 6 | 3 | 4 | 5 | 6 | 8 | 4 | 6 | 7 | 9 | 10 |
| | 28 | 3 | 4 | 6 | 7 | 7 | 4 | 5 | 7 | 8 | 9 | 5 | 7 | 9 | 11 | 13 |
| | 32 | 4 | 5 | 7 | 8[8] | - | 5 | 6 | 8 | 10[8] | - | 6 | 9 | 11 | 14[8] | - |
| | 36 | 5 | 6 | 8 | 9[8] | - | 6 | 8 | 10 | 11[8] | - | 8 | 11 | 14 | 15[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 5 | 6 |
| | 16 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 4 | 5 | 6 | 4 | 5 | 6 | 7 | 8 |
| | 20 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 7 | 8 | 5 | 6 | 8 | 10 | 11 |
| | 24 | 4 | 5 | 6 | 8 | 9 | 5 | 6 | 8 | 9 | 11 | 6 | 8 | 11 | 13 | 15 |
| | 28 | 5 | 6 | 8 | 10 | 11 | 6 | 8 | 10 | 12 | 13 | 8 | 11 | 14 | 16 | 19 |
| | 32 | 6 | 8 | 10 | 12[8] | - | 7 | 9 | 12 | 15[8] | - | 9 | 13 | 17 | 20[8] | - |
| | 36 | 7 | 9 | 12 | 13[8] | - | 8 | 11 | 15 | 16[8] | - | 11 | 16 | 20 | 22[8] | - |

See footnotes 1-8.

## Table 3.3A2 1/2" Anchor Bolts - Foundation Sill Plate Connection Resisting Shear Loads from Seismic (prescriptive alternative to Table 3.3)

**GSL = 50 psf**
**ϕ = 1/2"**

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=50 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 24 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| | 28 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 32 | 1 | 1 | 2 | 2[8] | - | 2 | 2 | 3 | 3[8] | - | 2 | 3 | 4 | 5[8] | - |
| | 36 | 1 | 2 | 2 | 2[8] | - | 2 | 3 | 3 | 3[8] | - | 3 | 4 | 5 | 5[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 4 |
| | 24 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 5 | 5 |
| | 28 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 5 | 6 | 6 |
| | 32 | 1 | 2 | 2 | 3[8] | - | 2 | 3 | 4 | 5[8] | - | 3 | 5 | 6 | 7[8] | - |
| | 36 | 2 | 2 | 3 | 3[8] | - | 3 | 4 | 5 | 5[8] | - | 4 | 6 | 7 | 8[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 20 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 3 | 3 | 4 | 5 | 6 |
| | 24 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 28 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | 4 | 5 | 7 | 8 | 9 |
| | 32 | 2 | 3 | 3 | 4[8] | - | 3 | 4 | 6 | 7[8] | - | 5 | 6 | 8 | 10[8] | - |
| | 36 | 2 | 3 | 4 | 4[8] | - | 4 | 5 | 7 | 7[8] | - | 6 | 8 | 10 | 11[8] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 4 |
| | 20 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 4 | 4 | 2 | 3 | 4 | 5 | 6 |
| | 24 | 2 | 3 | 3 | 4 | 5 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 28 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 7 | 8 | 9 |
| | 32 | 3 | 4 | 5 | 6[8] | - | 3 | 5 | 6 | 7[8] | - | 5 | 6 | 8 | 10[8] | - |
| | 36 | 3 | 5 | 6 | 6[8] | - | 4 | 6 | 7 | 8[8] | - | 6 | 8 | 10 | 11[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 16 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 6 | 6 |
| | 20 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 6 | 4 | 5 | 6 | 8 | 9 |
| | 24 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 7 | 8 | 5 | 7 | 8 | 10 | 12 |
| | 28 | 4 | 5 | 6 | 8 | 8 | 4 | 6 | 8 | 9 | 10 | 6 | 8 | 10 | 13 | 14 |
| | 32 | 4 | 6 | 8 | 9[8] | - | 5 | 7 | 9 | 11[8] | - | 7 | 10 | 13 | 16[8] | - |
| | 36 | 5 | 7 | 9 | 10[8] | - | 6 | 9 | 11 | 12[8] | - | 9 | 12 | 16 | 17[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 4 | 5 | 6 |
| | 16 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 8 | 9 |
| | 20 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 8 | 9 | 5 | 7 | 9 | 11 | 13 |
| | 24 | 4 | 5 | 7 | 8 | 10 | 5 | 7 | 8 | 10 | 12 | 7 | 9 | 12 | 14 | 17 |
| | 28 | 5 | 7 | 9 | 11 | 12 | 6 | 8 | 11 | 13 | 15 | 8 | 12 | 15 | 18 | 20 |
| | 32 | 6 | 8 | 11 | 13[8] | - | 7 | 10 | 13 | 16[8] | - | 10 | 14 | 18 | 22[8] | - |
| | 36 | 7 | 10 | 13 | 14[8] | - | 9 | 12 | 16 | 18[8] | - | 12 | 17 | 22 | 25[8] | - |

See footnotes 1-8.

## Table 3.3A3 1/2" Anchor Bolts - Foundation Sill Plate Connection Resisting Shear Loads from Seismic (prescriptive alternative to Table 3.3)

**GSL = 70 psf**
**ϕ = 1/2"**

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=70 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 |
| | 24 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 28 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 32 | 1 | 1 | 2 | 2[8] | - | 2 | 2 | 3 | 3[8] | - | 2 | 3 | 4 | 5[8] | - |
| | 36 | 1 | 2 | 2 | 2[8] | - | 2 | 3 | 3 | 4[8] | - | 3 | 4 | 5 | 5[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 24 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 5 | 6 |
| | 28 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 32 | 2 | 2 | 2 | 3[8] | - | 3 | 3 | 4 | 5[8] | - | 4 | 5 | 6 | 7[8] | - |
| | 36 | 2 | 2 | 3 | 3[8] | - | 3 | 4 | 5 | 5[8] | - | 4 | 6 | 7 | 8[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 20 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 3 | 3 | 4 | 5 | 6 |
| | 24 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 5 | 7 | 8 |
| | 28 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 6 | 6 | 4 | 5 | 7 | 8 | 9 |
| | 32 | 2 | 3 | 3 | 4[8] | - | 3 | 5 | 6 | 7[8] | - | 5 | 7 | 8 | 10[8] | - |
| | 36 | 2 | 3 | 4 | 4[8] | - | 4 | 5 | 7 | 8[8] | - | 6 | 8 | 10 | 11[8] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 20 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 5 | 6 |
| | 24 | 2 | 3 | 3 | 4 | 5 | 3 | 3 | 4 | 5 | 6 | 3 | 4 | 6 | 7 | 8 |
| | 28 | 3 | 3 | 4 | 5 | 6 | 3 | 4 | 5 | 6 | 7 | 4 | 6 | 7 | 9 | 10 |
| | 32 | 3 | 4 | 5 | 6[8] | - | 4 | 5 | 6 | 8[8] | - | 5 | 7 | 9 | 11[8] | - |
| | 36 | 4 | 5 | 6 | 7[8] | - | 4 | 6 | 8 | 8[8] | - | 6 | 8 | 11 | 12[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 5 |
| | 16 | 2 | 2 | 3 | 4 | 4 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 20 | 2 | 3 | 4 | 5 | 6 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 7 | 8 | 9 |
| | 24 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 8 | 9 | 5 | 7 | 9 | 10 | 12 |
| | 28 | 4 | 5 | 7 | 8 | 9 | 5 | 6 | 8 | 10 | 11 | 6 | 9 | 11 | 13 | 15 |
| | 32 | 5 | 6 | 8 | 10[8] | - | 6 | 8 | 10 | 12[8] | - | 8 | 11 | 14 | 17[8] | - |
| | 36 | 5 | 8 | 10 | 11[8] | - | 7 | 9 | 12 | 13[8] | - | 9 | 13 | 17 | 18[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 5 | 6 |
| | 16 | 3 | 3 | 4 | 5 | 6 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 7 | 8 | 9 |
| | 20 | 3 | 4 | 5 | 7 | 8 | 4 | 5 | 7 | 8 | 9 | 5 | 7 | 9 | 11 | 13 |
| | 24 | 4 | 6 | 7 | 9 | 10 | 5 | 7 | 9 | 11 | 12 | 7 | 10 | 12 | 15 | 17 |
| | 28 | 5 | 7 | 9 | 11 | 12 | 6 | 9 | 11 | 13 | 15 | 9 | 12 | 15 | 19 | 21 |
| | 32 | 6 | 9 | 11 | 14[8] | - | 8 | 11 | 14 | 17[8] | - | 11 | 15 | 19 | 23[8] | - |
| | 36 | 8 | 11 | 14 | 15[8] | - | 9 | 13 | 17 | 18[8] | - | 13 | 18 | 23 | 26[8] | - |

See footnotes 1-8.

## Table 3.3A4 5/8" Anchor Bolts - Foundation Sill Plate Connection Resisting Shear Loads from Seismic (prescriptive alternative to Table 3.3)

**GSL = 30 psf**
**ϕ = 5/8"**

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=30 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 32 | 1 | 1 | 1 | 1[8] | - | 1 | 1 | 2 | 2[8] | - | 2 | 2 | 2 | 3[8] | - |
| | 36 | 1 | 1 | 1 | 1[8] | - | 1 | 2 | 2 | 2[8] | - | 2 | 2 | 3 | 3[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 24 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| | 28 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 32 | 1 | 1 | 2 | 2[8] | - | 2 | 2 | 3 | 3[8] | - | 2 | 3 | 4 | 5[8] | - |
| | 36 | 1 | 2 | 2 | 2[8] | - | 2 | 3 | 3 | 3[8] | - | 3 | 4 | 4 | 5[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 20 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 24 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 4 | 4 | 5 |
| | 28 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 4 | 5 | 6 |
| | 32 | 1 | 2 | 2 | 3[8] | - | 2 | 3 | 4 | 4[8] | - | 3 | 4 | 5 | 6[8] | - |
| | 36 | 2 | 2 | 3 | 3[8] | - | 3 | 4 | 4 | 5[8] | - | 4 | 5 | 6 | 7[8] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 20 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 24 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 5 |
| | 28 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 4 | 4 | 2 | 3 | 4 | 5 | 5 |
| | 32 | 2 | 2 | 3 | 4[8] | - | 2 | 3 | 4 | 4[8] | - | 3 | 4 | 5 | 6[8] | - |
| | 36 | 2 | 3 | 4 | 4[8] | - | 3 | 3 | 4 | 5[8] | - | 3 | 5 | 6 | 6[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 20 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 5 | 6 |
| | 24 | 2 | 3 | 3 | 4 | 4 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 28 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 7 | 8 | 9 |
| | 32 | 3 | 4 | 5 | 6[8] | - | 3 | 5 | 6 | 7[8] | - | 5 | 6 | 8 | 10[8] | - |
| | 36 | 3 | 5 | 6 | 6[8] | - | 4 | 6 | 7 | 8[8] | - | 6 | 8 | 10 | 11[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 4 |
| | 16 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 4 | 5 | 6 |
| | 20 | 2 | 3 | 4 | 4 | 5 | 3 | 3 | 4 | 5 | 6 | 4 | 5 | 6 | 7 | 8 |
| | 24 | 3 | 4 | 5 | 5 | 6 | 3 | 4 | 6 | 7 | 8 | 4 | 6 | 8 | 9 | 11 |
| | 28 | 3 | 5 | 6 | 7 | 8 | 4 | 6 | 7 | 8 | 9 | 6 | 8 | 10 | 12 | 13 |
| | 32 | 4 | 6 | 7 | 8[8] | - | 5 | 7 | 9 | 10[8] | - | 7 | 9 | 12 | 14[8] | - |
| | 36 | 5 | 7 | 8 | 9[8] | - | 6 | 8 | 10 | 11[8] | - | 8 | 11 | 14 | 16[8] | - |

See footnotes 1-8.

## Table 3.3A5 5/8" Anchor Bolts - Foundation Sill Plate Connection Resisting Shear Loads from Seismic (prescriptive alternative to Table 3.3)

**GSL = 50 psf**
**ϕ = 5/8"**

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=50 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 32 | 1 | 1 | 1 | 1[8] | - | 1 | 2 | 2 | 2[8] | - | 2 | 2 | 3 | 3[8] | - |
| | 36 | 1 | 1 | 1 | 2[8] | - | 2 | 2 | 2 | 3[8] | - | 2 | 3 | 3 | 4[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 |
| | 24 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 28 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 5 |
| | 32 | 1 | 1 | 2 | 2[8] | - | 2 | 2 | 3 | 4[8] | - | 3 | 3 | 4 | 5[8] | - |
| | 36 | 1 | 2 | 2 | 2[8] | - | 2 | 3 | 4 | 4[8] | - | 3 | 4 | 5 | 6[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 4 |
| | 24 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 5 | 5 |
| | 28 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 5 | 6 | 6 |
| | 32 | 2 | 2 | 2 | 3[8] | - | 2 | 3 | 4 | 5[8] | - | 3 | 5 | 6 | 7[8] | - |
| | 36 | 2 | 2 | 3 | 3[8] | - | 3 | 4 | 5 | 5[8] | - | 4 | 6 | 7 | 8[8] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 2 | 2 | 2 | 3 | 1 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 4 |
| | 24 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 5 | 5 |
| | 28 | 2 | 2 | 3 | 4 | 4 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 32 | 2 | 3 | 4 | 4[8] | - | 3 | 3 | 4 | 5[8] | - | 3 | 5 | 6 | 7[8] | - |
| | 36 | 3 | 3 | 4 | 5[8] | - | 3 | 4 | 5 | 6[8] | - | 4 | 6 | 7 | 8[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 5 |
| | 20 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 5 | 6 |
| | 24 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 4 | 5 | 6 | 4 | 5 | 6 | 7 | 8 |
| | 28 | 3 | 4 | 5 | 5 | 6 | 3 | 4 | 5 | 7 | 7 | 4 | 6 | 8 | 9 | 10 |
| | 32 | 3 | 4 | 6 | 7[8] | - | 4 | 5 | 7 | 8[8] | - | 5 | 7 | 9 | 11[8] | - |
| | 36 | 4 | 5 | 7 | 7[8] | - | 5 | 6 | 8 | 9[8] | - | 6 | 9 | 11 | 12[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 16 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 6 | 6 |
| | 20 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 6 | 4 | 5 | 6 | 8 | 9 |
| | 24 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 7 | 9 | 5 | 7 | 8 | 10 | 12 |
| | 28 | 4 | 5 | 6 | 8 | 8 | 4 | 6 | 8 | 9 | 10 | 6 | 8 | 11 | 13 | 14 |
| | 32 | 4 | 6 | 8 | 9[8] | - | 5 | 7 | 9 | 11[8] | - | 7 | 10 | 13 | 16[8] | - |
| | 36 | 5 | 7 | 9 | 10[8] | - | 6 | 9 | 11 | 12[8] | - | 9 | 12 | 16 | 17[8] | - |

See footnotes 1-8.

## Table 3.3A6 5/8" Anchor Bolts - Foundation Sill Plate Connection Resisting Shear Loads from Seismic (prescriptive alternative to Table 3.3)

**GSL = 70 psf**
**ϕ = 5/8"**

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=70 psf; Lateral force resisting system: Wood structural panel shear walls)

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 32 | 1 | 1 | 1 | 2[8] | - | 1 | 2 | 2 | 3[8] | - | 2 | 2 | 3 | 4[8] | - |
| | 36 | 1 | 1 | 2 | 2[8] | - | 2 | 2 | 3 | 3[8] | - | 2 | 3 | 4 | 4[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 24 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 4 |
| | 28 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 4 | 4 | 5 |
| | 32 | 1 | 2 | 2 | 2[8] | - | 2 | 3 | 3 | 4[8] | - | 3 | 4 | 4 | 5[8] | - |
| | 36 | 1 | 2 | 2 | 2[8] | - | 2 | 3 | 4 | 4[8] | - | 3 | 4 | 5 | 6[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 24 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 5 | 6 |
| | 28 | 1 | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 32 | 2 | 2 | 2 | 3[8] | - | 3 | 3 | 4 | 5[8] | - | 4 | 5 | 6 | 7[8] | - |
| | 36 | 2 | 2 | 3 | 3[8] | - | 3 | 4 | 5 | 5[8] | - | 4 | 6 | 7 | 8[8] | - |

| Foundation Supporting | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Number of Bolts Required[2,3,4,5,6,7] | | | | | | | | | | | | | | |
| Roof, Ceiling, & 1 Floor | 12 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 24 | 2 | 2 | 3 | 3 | 4 | 2 | 2 | 3 | 4 | 4 | 2 | 3 | 4 | 5 | 6 |
| | 28 | 2 | 3 | 3 | 4 | 4 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 32 | 2 | 3 | 4 | 5[8] | - | 3 | 4 | 5 | 6[8] | - | 4 | 5 | 6 | 8[8] | - |
| | 36 | 3 | 4 | 5 | 5[8] | - | 3 | 4 | 6 | 6[8] | - | 4 | 6 | 8 | 8[8] | - |
| Roof, Ceiling, & 2 Floors | 12 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 4 | 5 |
| | 20 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 24 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 5 | 5 | 6 | 4 | 5 | 6 | 7 | 9 |
| | 28 | 3 | 4 | 5 | 6 | 6 | 3 | 5 | 6 | 7 | 8 | 5 | 6 | 8 | 10 | 11 |
| | 32 | 3 | 5 | 6 | 7[8] | - | 4 | 6 | 7 | 9[8] | - | 6 | 8 | 10 | 12[8] | - |
| | 36 | 4 | 5 | 7 | 8[8] | - | 5 | 7 | 8 | 9[8] | - | 7 | 9 | 12 | 13[8] | - |
| Roof, Ceiling & 3 Floors | 12 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 4 |
| | 16 | 2 | 2 | 3 | 3 | 4 | 2 | 3 | 4 | 4 | 5 | 3 | 4 | 5 | 6 | 7 |
| | 20 | 2 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 7 | 8 | 9 |
| | 24 | 3 | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 8 | 9 | 5 | 7 | 9 | 10 | 12 |
| | 28 | 4 | 5 | 6 | 8 | 9 | 5 | 6 | 8 | 10 | 11 | 6 | 9 | 11 | 13 | 15 |
| | 32 | 5 | 6 | 8 | 10[8] | - | 6 | 8 | 10 | 12[8] | - | 8 | 11 | 14 | 16[8] | - |
| | 36 | 5 | 8 | 10 | 11[8] | - | 7 | 9 | 12 | 13[8] | - | 9 | 13 | 16 | 18[8] | - |

See footnotes 1-8.

## Footnotes to Table 3.3A

[1] Tabulated values are calculated using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$, in ASCE 7-22. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.
[2] Prescriptive limits are based on assumptions in Table 3.3.
[3] Anchor bolts shall be uniformly distributed along the length of the sill plate. See Section 3.2.1.7 for anchor bolt limitations.
[4] Sill plates are assumed to be treated Southern Pine.
[5] Where the lateral force resisting system is other than wood structural panel shear walls the number of anchor bolts required shall be increased by multiplying by 3.25.
[6] The number of foundation sill plate anchor bolts can be determined for other load cases by multiplying by the appropriate adjustment factor given in the following table:

| Foundation Supporting | Minimum Building Dimension, W (ft.) | Roof/Ceiling Assembly = 15 psf | | | | Roof/Ceiling Assembly = 25 psf | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf |
| | | Foundation sill plate connection shear load adjustment factors | | | | | | | |
| Roof, Ceiling & 1 Floor | 12 | 1.33 | 1.41 | 1.00 | 1.10 | 1.51 | 1.60 | 1.18 | 1.28 |
| | 16 | 1.30 | 1.39 | 1.00 | 1.12 | 1.49 | 1.59 | 1.20 | 1.31 |
| | 20 | 1.27 | 1.38 | 1.00 | 1.13 | 1.47 | 1.58 | 1.21 | 1.33 |
| | 24 | 1.24 | 1.37 | 1.00 | 1.14 | 1.45 | 1.57 | 1.21 | 1.35 |
| | 28 | 1.22 | 1.36 | 1.00 | 1.15 | 1.44 | 1.57 | 1.22 | 1.37 |
| | 32 | 1.21 | 1.35 | 1.00 | 1.15 | 1.43 | 1.56 | 1.23 | 1.38 |
| | 36 | 1.19 | 1.34 | 1.00 | 1.16 | 1.42 | 1.56 | 1.23 | 1.39 |
| Roof, Ceiling & 2 Floors | 12 | 1.36 | 1.46 | 1.00 | 1.13 | 1.48 | 1.58 | 1.12 | 1.25 |
| | 16 | 1.32 | 1.45 | 1.00 | 1.15 | 1.44 | 1.57 | 1.13 | 1.28 |
| | 20 | 1.29 | 1.43 | 1.00 | 1.17 | 1.42 | 1.56 | 1.13 | 1.30 |
| | 24 | 1.27 | 1.42 | 1.00 | 1.18 | 1.40 | 1.55 | 1.14 | 1.32 |
| | 28 | 1.25 | 1.41 | 1.00 | 1.19 | 1.38 | 1.54 | 1.14 | 1.33 |
| | 32 | 1.23 | 1.40 | 1.00 | 1.19 | 1.36 | 1.54 | 1.14 | 1.34 |
| | 36 | 1.21 | 1.39 | 1.00 | 1.20 | 1.35 | 1.53 | 1.15 | 1.35 |
| Roof, Ceiling & 3 Floors | 12 | 1.37 | 1.49 | 1.00 | 1.14 | 1.46 | 1.57 | 1.09 | 1.23 |
| | 16 | 1.34 | 1.47 | 1.00 | 1.16 | 1.42 | 1.56 | 1.09 | 1.26 |
| | 20 | 1.30 | 1.46 | 1.00 | 1.18 | 1.40 | 1.55 | 1.10 | 1.28 |
| | 24 | 1.28 | 1.45 | 1.00 | 1.20 | 1.37 | 1.54 | 1.10 | 1.30 |
| | 28 | 1.25 | 1.44 | 1.00 | 1.21 | 1.35 | 1.53 | 1.10 | 1.31 |
| | 32 | 1.24 | 1.43 | 1.00 | 1.21 | 1.34 | 1.53 | 1.11 | 1.32 |
| | 36 | 1.22 | 1.42 | 1.00 | 1.22 | 1.32 | 1.52 | 1.11 | 1.33 |

7 Effective seismic weight used to determine foundation sill plate anchorage load includes 20% of ASD ground snow load, $p_{g(ASD)}$, where the ASD ground snow load, $p_{g(ASD)}$, exceeds 30 psf. $S_{DS}$ used for SDC A, B, C, $D_0$, $D_1$ and $D_2$ are as follows: $S_{DS}$=0.17 for SDC A; $S_{DS}$=0.33 for SDC B; $S_{DS}$=0.50 for SDC C; $S_{DS}$=0.67 for SDC $D_0$; $S_{DS}$=0.83 for SDC $D_1$; $S_{DS}$=1.17 for SDC $D_2$.
8 The number of foundation sill plate anchor bolts is based on a building length, L, equal to 80 ft.

## Table 3.3B Bottom Plate to Foundation Connections (Anchor Bolts) Resisting Shear from Seismic

| For Seismic Design Categories A, B, C, $D_0$, $D_1$, and $D_2$ | |
|---|---|
| **Anchor Bolt Diameter (in.)** | **Maximum Anchor Bolt Spacing (in.)[1,2]** |
| **1/2"** | 67 |
| **5/8"** | 72 |

[1] Tabulated anchor bolt spacings assume shear walls are sheathed in accordance with Section 3.4.4.2. For other wall sheathing types the tabulated anchor bolt spacings shall be multiplied by the appropriate sheathing type adjustment factor in Table 3.17D. For anchor bolt limitations see Section 3.2.1.7.
[2] Wall bottom plates are assumed to be treated Southern Pine.

## Table 3.4 Rafter/Truss Framing to Wall Connection Requirements for Wind Loads

# Exposure B

(Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf)

| Wind Speed 3-second gust (mph) | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/ Truss Spacing (in.) | Roof Span (ft) | Required Capacity of Connection (lbs.)[1] | | | | | | | | | | | |
| | | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ |
| 12 | 12 | 8 | 53 | 48R | 18 | 59 | 48R | 27 | 66 | 48R | 37 | 72 | 48R |
| | 16 | 8 | | | 19 | | | 30 | | | 43 | | |
| | 20 | 7 | | | 20 | | | 34 | | | 48 | | |
| | 24 | 6 | | | 21 | | | 37 | | | 54 | | |
| | 28 | 5 | | | 22 | | | 40 | | | 59 | | |
| | 32 | 5 | | | 24 | | | 44 | | | 65 | | |
| | 36 | 4 | | | 25 | | | 47 | | | 70 | | |
| 16 | 12 | 11 | 71 | 64R | 24 | 79 | 64R | 36 | 87 | 64R | 50 | 96 | 64R |
| | 16 | 10 | | | 25 | | | 41 | | | 57 | | |
| | 20 | 9 | | | 26 | | | 45 | | | 64 | | |
| | 24 | 8 | | | 28 | | | 49 | | | 72 | | |
| | 28 | 7 | | | 30 | | | 54 | | | 79 | | |
| | 32 | 6 | | | 32 | | | 58 | | | 86 | | |
| | 36 | 5 | | | 33 | | | 63 | | | 94 | | |
| 19.2 | 12 | 14 | 85 | 77R | 28 | 95 | 77R | 44 | 105 | 77R | 60 | 116 | 77R |
| | 16 | 12 | | | 30 | | | 49 | | | 68 | | |
| | 20 | 11 | | | 32 | | | 54 | | | 77 | | |
| | 24 | 10 | | | 34 | | | 59 | | | 86 | | |
| | 28 | 8 | | | 36 | | | 64 | | | 95 | | |
| | 32 | 7 | | | 38 | | | 70 | | | 104 | | |
| | 36 | 6 | | | 40 | | | 75 | | | 113 | | |
| 24 | 12 | 17 | 106 | 96R | 35 | 118 | 96R | 55 | 131 | 96R | 75 | 145 | 96R |
| | 16 | 15 | | | 37 | | | 61 | | | 85 | | |
| | 20 | 13 | | | 40 | | | 67 | | | 96 | | |
| | 24 | 12 | | | 42 | | | 74 | | | 107 | | |
| | 28 | 11 | | | 45 | | | 81 | | | 118 | | |
| | 32 | 9 | | | 47 | | | 87 | | | 130 | | |
| | 36 | 8 | | | 50 | | | 94 | | | 141 | | |

U = Connector uplift load.

L = Connector lateral load (Perpendicular to the wall).

S = Connector shear load (Parallel to the wall).

R = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

1 Tabulated uplift and lateral loads shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated uplift loads assume a reduced roof and ceiling assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for roof-to-wall connections. When calculating uplift loads for wall-to-wall or wall-to-foundation connections, tabulated uplift values shall be permitted to be reduced by 73 plf (0.60 x 121 plf)

4 Shear connection values shall be multiplied by the following adjustments:

| | Wall Height | 8' | 10' |
|---|---|---|---|
| Roof Pitch | Top Plate to Ridge Height | Adjustment Factor | |
| ≤6:12 | 0' (flat) | 0.40 | 0.50 |
| | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| >6:12 | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| | 15' | 1.15 | 1.25 |
| | 20' | 1.40 | 1.50 |

5 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.4 Rafter/Truss Framing to Wall Connection Requirements for Wind Loads (Cont.)

# Exposure B

(Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf)

| Wind Speed 3-second gust (mph) | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/ Truss Spacing (in.) | Roof Span (ft) | Required Capacity of Connection (lbs.)[1] | | | | | | | | | | | | | | |
| | | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ |
| 12 | 12 | 48 | 79 | 48R | 59 | 87 | 48R | 71 | 94 | 50R | 96 | 111 | 58R | 123 | 129 | 68R |
| | 16 | 56 | | | 69 | | | 83 | | | 113 | | | 146 | | |
| | 20 | 63 | | | 79 | | | 96 | | | 131 | | | 170 | | |
| | 24 | 71 | | | 89 | | | 109 | | | 149 | | | 193 | | |
| | 28 | 79 | | | 100 | | | 121 | | | 167 | | | 217 | | |
| | 32 | 87 | | | 110 | | | 134 | | | 186 | | | 241 | | |
| | 36 | 95 | | | 120 | | | 147 | | | 204 | | | 265 | | |
| 16 | 12 | 64 | 106 | 64R | 79 | 116 | 64R | 95 | 126 | 66R | 128 | 148 | 78R | 164 | 171 | 90R |
| | 16 | 74 | | | 92 | | | 111 | | | 151 | | | 195 | | |
| | 20 | 84 | | | 106 | | | 128 | | | 175 | | | 226 | | |
| | 24 | 95 | | | 119 | | | 145 | | | 199 | | | 258 | | |
| | 28 | 105 | | | 133 | | | 162 | | | 223 | | | 290 | | |
| | 32 | 116 | | | 147 | | | 179 | | | 248 | | | 322 | | |
| | 36 | 126 | | | 160 | | | 196 | | | 272 | | | 354 | | |
| 19.2 | 12 | 77 | 127 | 77R | 95 | 139 | 77R | 114 | 151 | 79R | 153 | 177 | 93R | 196 | 206 | 108R |
| | 16 | 89 | | | 111 | | | 133 | | | 182 | | | 234 | | |
| | 20 | 101 | | | 127 | | | 154 | | | 210 | | | 271 | | |
| | 24 | 114 | | | 143 | | | 174 | | | 239 | | | 309 | | |
| | 28 | 126 | | | 160 | | | 194 | | | 268 | | | 348 | | |
| | 32 | 139 | | | 176 | | | 215 | | | 297 | | | 386 | | |
| | 36 | 152 | | | 193 | | | 235 | | | 326 | | | 424 | | |
| 24 | 12 | 96 | 159 | 96R | 119 | 173 | 96R | 142 | 189 | 99R | 192 | 222 | 117R | 245 | 257 | 135R |
| | 16 | 111 | | | 138 | | | 167 | | | 227 | | | 292 | | |
| | 20 | 127 | | | 159 | | | 192 | | | 263 | | | 339 | | |
| | 24 | 142 | | | 179 | | | 217 | | | 299 | | | 387 | | |
| | 28 | 158 | | | 199 | | | 243 | | | 335 | | | 434 | | |
| | 32 | 174 | | | 220 | | | 268 | | | 371 | | | 482 | | |
| | 36 | 190 | | | 241 | | | 294 | | | 408 | | | 530 | | |

U = Connector uplift load.

L = Connector lateral load (Perpendicular to the wall).

S = Connector shear load (Parallel to the wall).

R = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

1 Tabulated uplift and lateral loads shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated uplift loads assume a reduced roof and ceiling assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for roof-to-wall connections. When calculating uplift loads for wall-to-wall or wall-to-foundation connections, tabulated uplift values shall be permitted to be reduced by 73 plf (0.60 x 121 plf) for each full wall above.

4 Shear connection values shall be multiplied by the following adjustments:

| Roof Pitch | Wall Height: Top Plate to Ridge Height | 8' Adjustment Factor | 10' Adjustment Factor |
|---|---|---|---|
| ≤6:12 | 0' (flat) | 0.40 | 0.50 |
| | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| >6:12 | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| | 15' | 1.15 | 1.25 |
| | 20' | 1.40 | 1.50 |

5 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.4 Rafter/Truss Framing to Wall Connection Requirements for Wind Loads (Cont.)

# Exposure B

(Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf)

| Wind Speed 3-second gust (mph) | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/ Truss Spacing (in.) | Roof Span (ft) | Required Capacity of Connection (lbs.)[1] | | | | | | | | | | | | | | |
| | | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ |
| 12 | 12 | 151 | 148 | 78R | 182 | 168 | 88R | 215 | 190 | 100R | 250 | 212 | 112R | 306 | 249 | 131R |
| | 16 | 181 | | | 218 | | | 258 | | | 300 | | | 368 | | |
| | 20 | 211 | | | 255 | | | 301 | | | 351 | | | 431 | | |
| | 24 | 241 | | | 291 | | | 345 | | | 402 | | | 494 | | |
| | 28 | 271 | | | 328 | | | 389 | | | 453 | | | 557 | | |
| | 32 | 301 | | | 365 | | | 432 | | | 504 | | | 620 | | |
| | 36 | 331 | | | 401 | | | 476 | | | 556 | | | 684 | | |
| 16 | 12 | 202 | 197 | 103R | 243 | 224 | 118R | 287 | 253 | 133R | 333 | 283 | 149R | 407 | 333 | 175R |
| | 16 | 241 | | | 291 | | | 344 | | | 400 | | | 490 | | |
| | 20 | 281 | | | 339 | | | 402 | | | 468 | | | 574 | | |
| | 24 | 321 | | | 388 | | | 460 | | | 536 | | | 658 | | |
| | 28 | 361 | | | 437 | | | 518 | | | 604 | | | 742 | | |
| | 32 | 401 | | | 486 | | | 577 | | | 673 | | | 827 | | |
| | 36 | 441 | | | 535 | | | 635 | | | 741 | | | 911 | | |
| 19.2 | 12 | 242 | 236 | 124R | 292 | 269 | 141R | 344 | 303 | 159R | 400 | 340 | 179R | 489 | 399 | 210R |
| | 16 | 289 | | | 349 | | | 413 | | | 480 | | | 588 | | |
| | 20 | 337 | | | 407 | | | 482 | | | 561 | | | 689 | | |
| | 24 | 385 | | | 466 | | | 552 | | | 643 | | | 790 | | |
| | 28 | 433 | | | 525 | | | 622 | | | 725 | | | 891 | | |
| | 32 | 481 | | | 583 | | | 692 | | | 807 | | | 992 | | |
| | 36 | 530 | | | 642 | | | 762 | | | 889 | | | 1094 | | |
| 24 | 12 | 303 | 295 | 155R | 364 | 336 | 177R | 430 | 379 | 199R | 500 | 425 | 223R | 611 | 499 | 262R |
| | 16 | 362 | | | 436 | | | 516 | | | 600 | | | 736 | | |
| | 20 | 421 | | | 509 | | | 603 | | | 702 | | | 861 | | |
| | 24 | 481 | | | 582 | | | 690 | | | 804 | | | 987 | | |
| | 28 | 541 | | | 656 | | | 777 | | | 906 | | | 1114 | | |
| | 32 | 602 | | | 729 | | | 865 | | | 1009 | | | 1240 | | |
| | 36 | 662 | | | 803 | | | 953 | | | 1112 | | | 1367 | | |

U = Connector uplift load.

L = Connector lateral load (Perpendicular to the wall).

S = Connector shear load (Parallel to the wall).

R = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

1 Tabulated uplift and lateral loads shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated uplift loads assume a reduced roof and ceiling assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for roof-to-wall connections. When calculating uplift loads for wall-to-wall or wall-to-foundation connections, tabulated uplift values shall be permitted to be reduced by 73 plf (0.60 x 121 plf) for each full wall above.

4 Shear connection values shall be multiplied by the following adjustments:

| | Wall Height | 8' | 10' |
|---|---|---|---|
| Roof Pitch | Top Plate to Ridge Height | Adjustment Factor | |
| ≤6:12 | 0' (flat) | 0.40 | 0.50 |
| | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| >6:12 | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| | 15' | 1.15 | 1.25 |
| | 20' | 1.40 | 1.50 |

5 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.4 Rafter/Truss Framing to Wall Connection Requirements for Wind Loads

# Exposure C

(Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf)

| Wind Speed 3-second gust (mph) | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/ Truss Spacing (in.) | Roof Span (ft) | Required Capacity of Connection (lbs.)[1] | | | | | | | | | | | |
| | | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ |
| 12 | 12 | 40 | 74 | 48R | 52 | 82 | 48R | 66 | 91 | 48R | 80 | 100 | 53R |
| | 16 | 45 | | | 61 | | | 77 | | | 94 | | |
| | 20 | 51 | | | 70 | | | 89 | | | 109 | | |
| | 24 | 57 | | | 78 | | | 100 | | | 124 | | |
| | 28 | 63 | | | 87 | | | 112 | | | 138 | | |
| | 32 | 69 | | | 96 | | | 124 | | | 153 | | |
| | 36 | 76 | | | 105 | | | 135 | | | 168 | | |
| 16 | 12 | 53 | 98 | 64R | 70 | 110 | 64R | 88 | 121 | 64R | 107 | 134 | 70R |
| | 16 | 61 | | | 81 | | | 103 | | | 126 | | |
| | 20 | 68 | | | 93 | | | 118 | | | 145 | | |
| | 24 | 76 | | | 104 | | | 134 | | | 165 | | |
| | 28 | 84 | | | 116 | | | 149 | | | 184 | | |
| | 32 | 93 | | | 128 | | | 165 | | | 204 | | |
| | 36 | 101 | | | 140 | | | 181 | | | 224 | | |
| 19.2 | 12 | 64 | 118 | 77R | 84 | 132 | 77R | 105 | 146 | 77R | 128 | 161 | 84R |
| | 16 | 73 | | | 97 | | | 124 | | | 151 | | |
| | 20 | 82 | | | 111 | | | 142 | | | 174 | | |
| | 24 | 92 | | | 125 | | | 160 | | | 198 | | |
| | 28 | 101 | | | 139 | | | 179 | | | 221 | | |
| | 32 | 111 | | | 153 | | | 198 | | | 245 | | |
| | 36 | 121 | | | 167 | | | 217 | | | 268 | | |
| 24 | 12 | 79 | 148 | 96R | 105 | 164 | 96R | 132 | 182 | 96R | 160 | 201 | 106R |
| | 16 | 91 | | | 122 | | | 154 | | | 189 | | |
| | 20 | 103 | | | 139 | | | 177 | | | 218 | | |
| | 24 | 115 | | | 156 | | | 201 | | | 247 | | |
| | 28 | 127 | | | 174 | | | 224 | | | 276 | | |
| | 32 | 139 | | | 192 | | | 247 | | | 306 | | |
| | 36 | 151 | | | 209 | | | 271 | | | 336 | | |

U = Connector uplift load.

L = Connector lateral load (Perpendicular to the wall).

S = Connector shear load (Parallel to the wall).

R = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

1 Tabulated uplift and lateral loads shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated uplift loads assume a reduced roof and ceiling assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for roof-to-wall connections. When calculating uplift loads for wall-to-wall or wall-to-foundation connections, tabulated uplift values shall be permitted to be reduced by 73 plf (0.60 x 121 plf)

4 Shear connection values shall be multiplied by the following adjustments:

| | Wall Height | 8' | 10' |
|---|---|---|---|
| Roof Pitch | Top Plate to Ridge Height | Adjustment Factor | |
| ≤6:12 | 0' (flat) | 0.40 | 0.50 |
| | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| >6:12 | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| | 15' | 1.15 | 1.25 |
| | 20' | 1.40 | 1.50 |

5 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.4 Rafter/Truss Framing to Wall Connection Requirements for Wind Loads (Cont.)

# Exposure C

(Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf)

| Wind Speed 3-second gust (mph) | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/ Truss Spacing (in.) | Roof Span (ft) | Required Capacity of Connection (lbs.)[1] | | | | | | | | | | | | | | |
| | | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ |
| 12 | 12 | 95 | 110 | 58R | 110 | 120 | 63R | 127 | 131 | 69R | 161 | 154 | 81R | 198 | 179 | 94R |
| | 16 | 112 | | | 131 | | | 151 | | | 193 | | | 238 | | |
| | 20 | 130 | | | 152 | | | 175 | | | 224 | | | 278 | | |
| | 24 | 148 | | | 173 | | | 200 | | | 256 | | | 318 | | |
| | 28 | 166 | | | 195 | | | 225 | | | 289 | | | 358 | | |
| | 32 | 184 | | | 216 | | | 249 | | | 321 | | | 398 | | |
| | 36 | 202 | | | 237 | | | 274 | | | 353 | | | 438 | | |
| 16 | 12 | 127 | 147 | 77R | 147 | 161 | 84R | 169 | 175 | 92R | 215 | 205 | 108R | 264 | 238 | 125R |
| | 16 | 150 | | | 175 | | | 201 | | | 257 | | | 317 | | |
| | 20 | 173 | | | 203 | | | 234 | | | 299 | | | 370 | | |
| | 24 | 197 | | | 231 | | | 267 | | | 342 | | | 423 | | |
| | 28 | 221 | | | 259 | | | 299 | | | 385 | | | 477 | | |
| | 32 | 245 | | | 288 | | | 333 | | | 428 | | | 531 | | |
| | 36 | 269 | | | 316 | | | 366 | | | 471 | | | 584 | | |
| 19.2 | 12 | 152 | 176 | 93R | 177 | 193 | 101R | 203 | 210 | 110R | 258 | 246 | 130R | 317 | 286 | 150R |
| | 16 | 180 | | | 210 | | | 241 | | | 308 | | | 380 | | |
| | 20 | 208 | | | 243 | | | 280 | | | 359 | | | 444 | | |
| | 24 | 237 | | | 277 | | | 320 | | | 410 | | | 508 | | |
| | 28 | 265 | | | 311 | | | 359 | | | 462 | | | 572 | | |
| | 32 | 294 | | | 345 | | | 399 | | | 513 | | | 637 | | |
| | 36 | 323 | | | 379 | | | 439 | | | 565 | | | 701 | | |
| 24 | 12 | 190 | 220 | 116R | 221 | 241 | 127R | 253 | 262 | 138R | 322 | 308 | 162R | 397 | 357 | 188R |
| | 16 | 225 | | | 262 | | | 302 | | | 385 | | | 475 | | |
| | 20 | 260 | | | 304 | | | 351 | | | 449 | | | 555 | | |
| | 24 | 296 | | | 347 | | | 400 | | | 513 | | | 635 | | |
| | 28 | 331 | | | 389 | | | 449 | | | 577 | | | 715 | | |
| | 32 | 367 | | | 432 | | | 499 | | | 642 | | | 796 | | |
| | 36 | 403 | | | 474 | | | 548 | | | 706 | | | 877 | | |

U = Connector uplift load.

L = Connector lateral load (Perpendicular to the wall).

S = Connector shear load (Parallel to the wall).

R = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

1 Tabulated uplift and lateral loads shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated uplift loads assume a reduced roof and ceiling assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for roof-to-wall connections. When calculating uplift loads for wall-to-wall or wall-to-foundation connections, tabulated uplift values shall be permitted to be reduced by 73 plf (0.60 x 121 plf) for each full wall above.

4 Shear connection values shall be multiplied by the following adjustments:

| | Wall Height | 8' | 10' |
|---|---|---|---|
| Roof Pitch | Top Plate to Ridge Height | Adjustment Factor | |
| ≤6:12 | 0' (flat) | 0.40 | 0.50 |
| | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| >6:12 | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| | 15' | 1.15 | 1.25 |
| | 20' | 1.40 | 1.50 |

5 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.4 Rafter/Truss Framing to Wall Connection Requirements for Wind Loads (Cont.)

# Exposure C

(Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf)

| Wind Speed 3-second gust (mph) | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/ Truss Spacing (in.) | Roof Span (ft) | Required Capacity of Connection (lbs.)[1] | | | | | | | | | | | | | | |
| | | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ | $U^{2,3,5}$ | L | $S^4$ |
| 12 | 12 | 238 | 205 | 108R | 281 | 233 | 123R | 327 | 263 | 138R | 375 | 295 | 155R | 452 | 346 | 182R |
| | 16 | 286 | | | 338 | | | 393 | | | 452 | | | 546 | | |
| | 20 | 335 | | | 396 | | | 460 | | | 529 | | | 640 | | |
| | 24 | 383 | | | 453 | | | 528 | | | 607 | | | 735 | | |
| | 28 | 432 | | | 511 | | | 596 | | | 685 | | | 829 | | |
| | 32 | 481 | | | 569 | | | 664 | | | 764 | | | 924 | | |
| | 36 | 530 | | | 628 | | | 732 | | | 842 | | | 1019 | | |
| 16 | 12 | 318 | 273 | 144R | 375 | 311 | 163R | 435 | 351 | 185R | 500 | 394 | 207R | 603 | 462 | 243R |
| | 16 | 382 | | | 451 | | | 524 | | | 602 | | | 728 | | |
| | 20 | 446 | | | 527 | | | 614 | | | 706 | | | 853 | | |
| | 24 | 511 | | | 604 | | | 704 | | | 810 | | | 979 | | |
| | 28 | 576 | | | 682 | | | 794 | | | 914 | | | 1106 | | |
| | 32 | 641 | | | 759 | | | 885 | | | 1018 | | | 1232 | | |
| | 36 | 706 | | | 837 | | | 975 | | | 1123 | | | 1359 | | |
| 19.2 | 12 | 381 | 328 | 172R | 450 | 373 | 196R | 523 | 421 | 221R | 600 | 472 | 248R | 724 | 554 | 291R |
| | 16 | 458 | | | 541 | | | 629 | | | 723 | | | 873 | | |
| | 20 | 535 | | | 633 | | | 737 | | | 847 | | | 1024 | | |
| | 24 | 613 | | | 725 | | | 845 | | | 972 | | | 1175 | | |
| | 28 | 691 | | | 818 | | | 953 | | | 1097 | | | 1327 | | |
| | 32 | 769 | | | 911 | | | 1062 | | | 1222 | | | 1479 | | |
| | 36 | 848 | | | 1004 | | | 1171 | | | 1347 | | | 1631 | | |
| 24 | 12 | 477 | 410 | 216R | 562 | 466 | 245R | 653 | 526 | 277R | 750 | 590 | 310R | 905 | 693 | 364R |
| | 16 | 572 | | | 676 | | | 786 | | | 903 | | | 1092 | | |
| | 20 | 669 | | | 791 | | | 921 | | | 1059 | | | 1280 | | |
| | 24 | 766 | | | 907 | | | 1056 | | | 1214 | | | 1469 | | |
| | 28 | 864 | | | 1023 | | | 1192 | | | 1371 | | | 1659 | | |
| | 32 | 962 | | | 1139 | | | 1327 | | | 1527 | | | 1849 | | |
| | 36 | 1059 | | | 1255 | | | 1463 | | | 1684 | | | 2039 | | |

U = Connector uplift load.

L = Connector lateral load (Perpendicular to the wall).

S = Connector shear load (Parallel to the wall).

R = L/W for wind perpendicular to the ridge and W/L for wind parallel to the ridge, where W is the building width and L is the building length.

1 Tabulated uplift and lateral loads shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated uplift loads assume a reduced roof and ceiling assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for roof-to-wall connections. When calculating uplift loads for wall-to-wall or wall-to-foundation connections, tabulated uplift values shall be permitted to be reduced by 73 plf (0.60 x 121 plf) for each full wall above.

4 Shear connection values shall be multiplied by the following adjustments:

| Roof Pitch | Wall Height: Top Plate to Ridge Height | 8' Adjustment Factor | 10' Adjustment Factor |
|---|---|---|---|
| ≤6:12 | 0' (flat) | 0.40 | 0.50 |
| | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| >6:12 | 5' | 0.65 | 0.75 |
| | 10' | 0.90 | 1.00 |
| | 15' | 1.15 | 1.25 |
| | 20' | 1.40 | 1.50 |

5 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.4A Rafter and/or Ceiling Joist to Top Plate Lateral and Shear Connection Requirements — Exposure B

(Prescriptive Alternative to Table 3.4)

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/Ceiling Joist Spacing (in.) | Wall Height (ft.) | Number of 8d Common Nails or 10d Box Nails (Toenailed) Required in Each Rafter and/or Ceiling Joist to Top Plate Connection[1,2,3,4] | | | | | | | | | | | | | |
| 12 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| 16 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| 24 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 |
| | 10 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 6 |

1 Prescriptive limits are based on assumptions in Table 3.4.

2 When ceiling joists are installed parallel to rafters, the sum of the toenails in the rafter and ceiling joist shall equal or exceed the tabulated number of nails required.

3 To avoid splitting, no more than 2 toenails shall be installed in each side of a rafter or ceiling joist when fastened to a 2x4 top plate or 3 toenails in each side when fastened to a 2x6 top plate.

4 Where top plate-to-ridge heights exceed 10', they shall be adjusted as follows:

| Wall Height | 8' | 10' |
|---|---|---|
| Top Plate to Ridge Height (ft) | Adjustment Factor | |
| 10' | 1.00 | 1.00 |
| 15' | 1.15 | 1.25 |
| 20' | 1.40 | 1.50 |

## Table 3.4A Rafter and/or Ceiling Joist to Top Plate Lateral and Shear Connection Requirements — Exposure C

(Prescriptive Alternative to Table 3.4)

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter/Ceiling Joist Spacing (in.) | Wall Height (ft.) | Number of 8d Common Nails or 10d Box Nails (Toenailed) Required in Each Rafter and/or Ceiling Joist to Top Plate Connection[1,2,3,4] | | | | | | | | | | | | | |
| 12 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| 16 | 8 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 |
| | 10 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 |
| 24 | 8 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 |
| | 10 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 8 |

1 Prescriptive limits are based on assumptions in Table 3.4.

2 When ceiling joists are installed parallel to rafters, the sum of the toenails in the rafter and ceiling joist shall equal or exceed the tabulated number of nails required.

3 To avoid splitting, no more than 2 toenails shall be installed in each side of a rafter or ceiling joist when fastened to a 2x4 top plate or 3 toenails in each side when fastened to a 2x6 top plate.

4 Where top plate-to-ridge heights exceed 10', they shall be adjusted as follows:

| Wall Height | 8' | 10' |
|---|---|---|
| Top Plate to Ridge Height (ft) | Adjustment Factor | |
| 10' | 1.00 | 1.00 |
| 15' | 1.15 | 1.25 |
| 20' | 1.40 | 1.50 |

## Table 3.4B Shear Walls Resisting Uplift and Shear[1]

(Prescriptive Alternative to Table 3.4)

# Exposure B

| Wind Speed 3-second gust (mph) | | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wood Structural Panel Shear Wall Requirements | | Top & Bottom of Panel Nailing Requirements | | Maximum Roof Span (ft) [2, 3] | | | | | | | | | | | | | |
| Sheathing Thickness | Shear Wall Nailing | Rows of Nails | Nail Spacing (in) | | | | | | | | | | | | | | |
| 7/16" OSB or 15/32" plywood with species of plies having G≥0.49 | 8d Common Nails @ 4" panel edge spacing and 12" field edge spacing | 1 [4] | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 28 | 20 | 12 | - | - | - | - | - | - |
| | | 2 [5] | 6 | 36 | 36 | 36 | 36 | 36 | 28 | 20 | 12 | - | - | - | - | - | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 20 | 16 | 12 |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 |
| 7/16" OSB or 15/32" plywood with species of plies having G≥0.49 | 8d Common Nails @ 6" panel edge spacing and 12" field edge spacing | 1 [4] | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 28 | 20 | 12 | - | - | - | - | - | - |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 24 | 20 | 12 | 12 | - | - |
| | | 2 [5] | 6 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 24 | 20 | 12 | 12 | - | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 28 | 24 | 20 |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 |
| 15/32" OSB or plywood with species of plies having G≥0.49 | 10d Common Nails @ 6" panel edge spacing and 12" field edge spacing | 1 [4] | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 36 | 28 | 16 | 12 | - | - | - | - | - |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 20 | 16 | 12 | - |
| | | 2 [5] | 6 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 20 | 16 | 12 | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |

[1] See *AWC/ANSI Special Design Provisions for Wind and Seismic (SDPWS)* for proper design and detailing of wood structural panels used to resist combined shear and uplift from wind.

[2] Where framing has a specific gravity of 0.49 or greater, tabulated maximum roof spans shall be permitted to be multiplied by 1.08, but in no case shall they exceed a span of 36 ft.

[3] Tabulated values for plywood assume plywood with a species of plies having a specific gravity of 0.49 or greater. For plywood with other species, multiply the tabulated maximum roof spans by 0.90.

[4] Wood structural panels shall overlap the top member of the double top plate and bottom plate by 1½" and a single row of fasteners shall be placed ¾" from the panel edge.

[5] Wood structural panels shall overlap the top member of the double top plate and bottom plate by 1½". Rows of fasteners shall be ½" apart with a minimum edge distance of ½". Each row shall have nails at the specified spacing.

## Table 3.4B Shear Walls Resisting Uplift and Shear[1]

(Prescriptive Alternative to Table 3.4)

# Exposure C

| Wind Speed 3-second gust (mph) | | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wood Structural Panel Shear Wall Requirements | | Top & Bottom of Panel Nailing Requirements | | Maximum Roof Span (ft) [2, 3] | | | | | | | | | | | | | |
| Sheathing Thickness | Shear Wall Nailing | Rows of Nails | Nail Spacing (in) | | | | | | | | | | | | | | |
| 7/16" OSB or 15/32" plywood with species of plies having G≥0.49 | 8d Common Nails @ 4" panel edge spacing and 12" field edge spacing | 1 [4] | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | 3 | 36 | 36 | 24 | 16 | 12 | - | - | - | - | - | - | - | - | - |
| | | 2 [5] | 6 | 36 | 36 | 24 | 16 | 12 | - | - | - | - | - | - | - | - | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 16 | 12 | - | - | - |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 28 | 24 | 20 | 12 |
| 7/16" OSB or 15/32" plywood with species of plies having G≥0.49 | 8d Common Nails @ 6" panel edge spacing and 12" field edge spacing | 1 [4] | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | 4 | 36 | 36 | 24 | 16 | 12 | - | - | - | - | - | - | - | - | - |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 16 | 12 | - | - | - | - | - |
| | | 2 [5] | 6 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 16 | 12 | - | - | - | - | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 28 | 20 | 16 | 12 | - |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 28 | 24 | 20 |
| 15/32" OSB or plywood with species of plies having G≥0.49 | 10d Common Nails @ 6" panel edge spacing and 12" field edge spacing | 1 [4] | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | 4 | 36 | 36 | 32 | 24 | 20 | 12 | 12 | - | - | - | - | - | - | - |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 16 | 12 | - | - | - | - |
| | | 2 [5] | 6 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 | 16 | 12 | - | - | - | - |
| | | | 4 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 28 | 20 | 16 | 12 |
| | | | 3 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 32 | 24 |

[1] See *AWC/ANSI Special Design Provisions for Wind and Seismic (SDPWS)* for proper design and detailing of wood structural panels used to resist combined shear and uplift from wind.

[2] Where framing has a specific gravity of 0.49 or greater, tabulated maximum roof spans shall be permitted to be multiplied by 1.08, but in no case shall they exceed a span of 36 ft.

[3] Tabulated values for plywood assume plywood with a species of plies having a specific gravity of 0.49 or greater. For plywood with other species, multiply the tabulated maximum roof spans by 0.90.

[4] Wood structural panels shall overlap the top member of the double top plate and bottom plate by 1½" and a single row of fasteners shall be placed ¾" from the panel edge.

[5] Wood structural panels shall overlap the top member of the double top plate and bottom plate by 1½". Rows of fasteners shall be ½" apart with a minimum edge distance of ½". Each row shall have nails at the specified spacing.

## Table 3.4C Rake Overhang Outlooker Uplift Connection Requirements

# Exposure B

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Overhang Span (in.) | Outlooker Spacing (in.) | Uplift Connection Load (lbs)[1] | | | | | | | | | | | | | |
| 12 | 12 | 85 | 95 | 102 | 116 | 127 | 139 | 151 | 177 | 206 | 236 | 269 | 303 | 340 | 399 |
| | 16 | 113 | 126 | 137 | 154 | 169 | 185 | 201 | 236 | 274 | 315 | 358 | 405 | 453 | 532 |
| | 24 | 170 | 189 | 205 | 231 | 254 | 277 | 302 | 355 | 411 | 472 | 537 | 607 | 679 | - |
| 16 | 12 | 107 | 119 | 129 | 145 | 159 | 174 | 190 | 222 | 258 | 296 | 337 | 381 | 426 | 500 |
| | 16 | 142 | 158 | 172 | 193 | 212 | 232 | 253 | 297 | 344 | 395 | 449 | 508 | 568 | 667[2,5] |
| | 24 | 213 | 238 | 258 | 290 | 318 | 348 | 379 | 445 | 516 | 592 | 674 | 761 | - | |
| 19.2 | 12 | 126 | 140 | 153 | 171 | 188 | 205 | 223 | 262 | 304 | 349 | 397 | 448 | 502[2,5] | 589[3,6] |
| | 16 | 167 | 187 | 203 | 228 | 250 | 273 | 298 | 349 | 405 | 465 | 529 | 598[2,5] | 669[2,5] | 786[3,6] |
| | 24 | 251 | 280 | 305 | 342 | 375 | 410 | 446 | 524 | 607 | 697 | 794[2,5] | - | - | |
| 24 | 12 | 157 | 175 | 191 | 213 | 234 | 256 | 279 | 327 | 379[2,5] | 435[2] | 495[3,6] | 559[4,7] | 627[4,7] | 736[4] |
| | 16 | 209 | 233 | 255 | 284 | 312 | 341 | 372 | 436 | 506[2,5] | 580[2] | 660[3,6] | 746[4,7] | 836[4,7] | - |
| | 24 | 313 | 349 | 382 | 427 | 468 | 512 | 557 | 654[2,5] | 758[2,5] | 871[3,6] | - | - | | |

1 Uplift connection load based on connector located on inside face of 2x4 end wall and is not applicable for connector located on inside face of walls with framing members larger than 2x4. It shall be permitted to locate the connector on the outside face of walls with 2x4 and larger framing.

2 Wood structural panel sheathing with minimum 24/16 span rating required (minimum 7/16" nominal thickness).

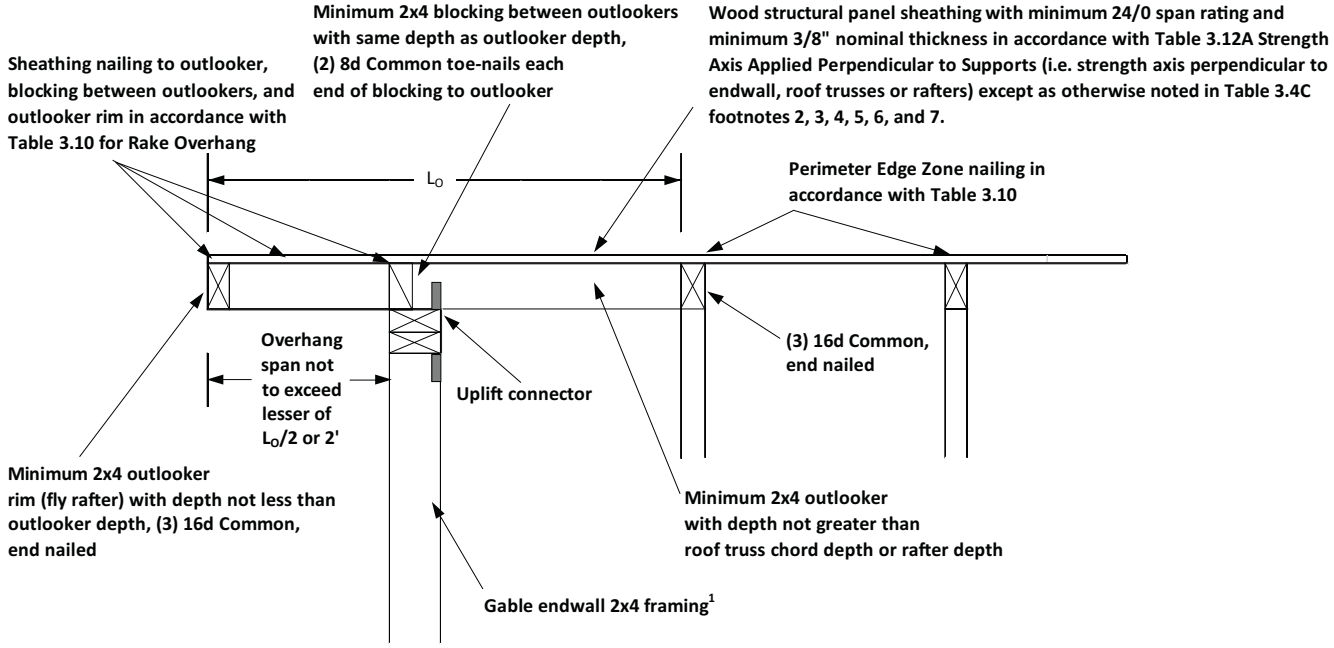
3 Wood structural panel sheathing with minimum 32/16 span rating required (minimum 15/32" nominal thickness).

4 Wood structural panel sheathing with minimum 40/20 span rating required (minimum 19/32" nominal thickness).

5 Where wood structural panel sheathing is OSB, minimum 24/0 span rating (minimum 3/8" nominal thickness) shall be permitted.

6 Where wood structural panel sheathing is OSB, minimum 24/16 span rating (minimum 7/16" nominal thickness) shall be permitted.

7 Where wood structural panel sheathing is OSB, minimum 32/16 span rating (minimum 15/32" nominal thickness) shall be permitted.



## Table 3.4C Rake Overhang Outlooker Uplift Connection Requirements

# Exposure C

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Overhang Span (in.) | Outlooker Spacing (in.) | Uplift Connection Load (lbs)[1] | | | | | | | | | | | | | |
| 12 | 12 | 118 | 132 | 142 | 161 | 176 | 193 | 210 | 246 | 286 | 328 | 373 | 422 | 472 | 554 |
| | 16 | 157 | 175 | 190 | 214 | 235 | 257 | 280 | 329 | 381 | 437 | 498 | 562 | 630 | - |
| | 24 | 236 | 263 | 285 | 322 | 353 | 386 | 420 | 493 | 571 | 656 | - | - | - | - |
| 16 | 12 | 148 | 165 | 180 | 202 | 221 | 242 | 263 | 309 | 358 | 411 | 468 | 529 | 592[2,5] | 695[3,6] |
| | 16 | 198 | 220 | 239 | 269 | 295 | 323 | 351 | 412 | 478 | 549 | 624 | 706[2,5] | 790[2,5] | - |
| | 24 | 296 | 330 | 359 | 403 | 443 | 484 | 527 | 618 | 717 | - | - | - | - | - |
| 19.2 | 12 | 175 | 194 | 212 | 238 | 261 | 285 | 310 | 364 | 422 | 485[2,5] | 552[2] | 623[3,6] | 698[4,7] | 819[4] |
| | 16 | 233 | 259 | 283 | 317 | 348 | 380 | 414 | 486 | 563[2,5] | 646[2,5] | 735[3,6] | 831[4,6] | - | - |
| | 24 | 349 | 389 | 424 | 475 | 521 | 570 | 621 | 728 | 844[2,5] | - | - | - | - | - |
| 24 | 12 | 218 | 243 | 266 | 297 | 325 | 356 | 387[2,5] | 455[2] | 527[3,6] | 605[4,7] | 689[4] | 778[4] | 871[4] | - |
| | 16 | 290 | 324 | 354 | 395 | 434 | 474 | 516[2,5] | 606[2] | 703[3,6] | 807[4,7] | - | - | - | - |
| | 24 | 436 | 486 | 531 | 593 | 651[2,5] | 711[2,5] | 775[2,5] | - | - | | | - | - | - |

1 Uplift connection load based on connector located on inside face of 2x4 end wall and is not applicable for connector located on inside face of walls with framing members larger than 2x4. It shall be permitted to locate the connector on the outside face of walls with 2x4 and larger framing.

2 Wood structural panel sheathing with minimum 24/16 span rating required (minimum 7/16" nominal thickness).

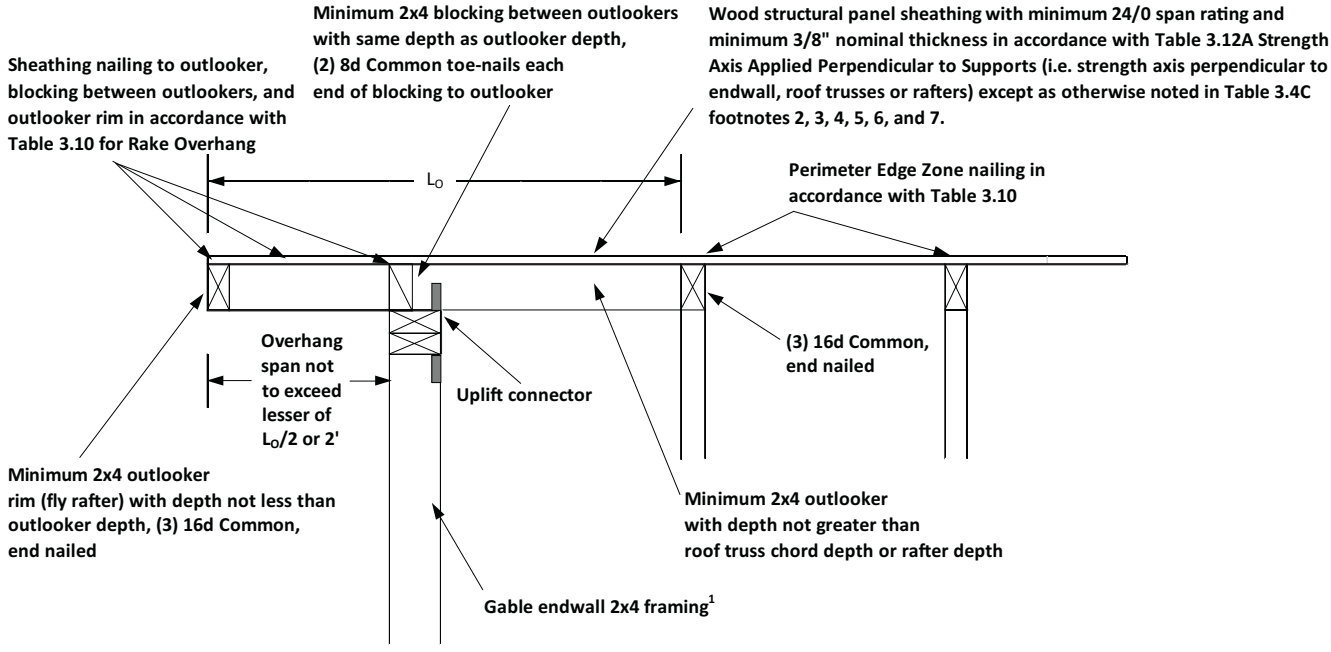
3 Wood structural panel sheathing with minimum 32/16 span rating required (minimum 15/32" nominal thickness).

4 Wood structural panel sheathing with minimum 40/20 span rating required (minimum 19/32" nominal thickness).

5 Where wood structural panel sheathing is OSB, minimum 24/0 span rating (minimum 3/8" nominal thickness) shall be permitted.

6 Where wood structural panel sheathing is OSB, minimum 24/16 span rating (minimum 7/16" nominal thickness) shall be permitted.

7 Where wood structural panel sheathing is OSB, minimum 32/16 span rating (minimum 15/32" nominal thickness) shall be permitted.



## Table 3.5 Top and Bottom Plate to Stud Lateral Connection Requirements for Wind Loads

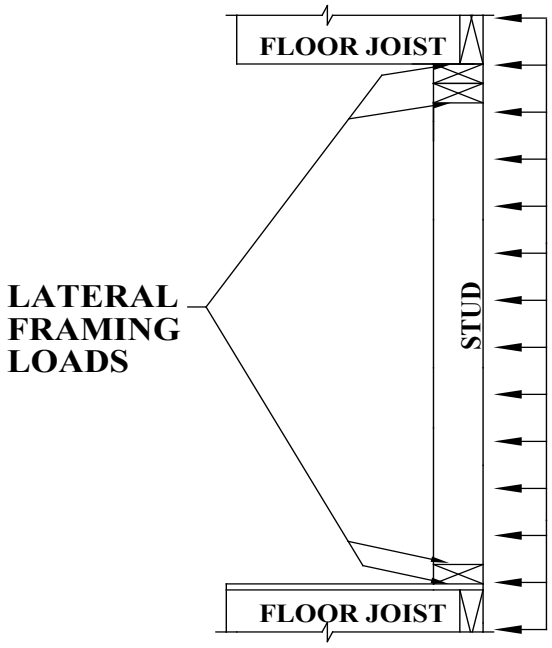
# Exposure B

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wall Height (ft)** | **Unit Framing Loads (plf)[1,2]** | | | | | | | | | | | | | |
| **8** | 45 | 50 | 55 | 61 | 67 | 73 | 79 | 93 | 108 | 124 | 141 | 159 | 178 | 209 |
| **10** | 53 | 59 | 66 | 72 | 79 | 87 | 94 | 111 | 129 | 148 | 168 | 190 | 212 | 249 |
| **12** | 61 | 68 | 76 | 83 | 91 | 100 | 109 | 128 | 148 | 170 | 193 | 218 | 245 | 287 |
| **14** | 69 | 77 | 85 | 94 | 103 | 112 | 122 | 144 | 167 | 191 | 218 | 246 | 275 | 323 |
| **16** | 77 | 85 | 94 | 104 | 114 | 124 | 135 | 159 | 184 | 212 | 241 | 272 | 305 | 358 |
| **18** | 86 | 93 | 103 | 113 | 124 | 136 | 148 | 174 | 201 | 231 | 263 | 297 | 333 | 391 |
| **20** | 96 | 100 | 111 | 123 | 135 | 147 | 160 | 188 | 218 | 250 | 285 | 321 | 360 | 423 |

1 Tabulated framing loads and connection requirements shall be permitted to be multiplied by 0.92 for framing not located within 8 feet of corners.

2 Tabulated framing loads are specified in pounds per linear foot of wall. To determine connection requirements (lbs), multiply the tabulated unit lateral framing load by the multiplier from the table below corresponding to the spacing of the connection:

| Connection Spacing (in.) | 12 | 16 | 19.2 | 24 | 48 |
|---|---|---|---|---|---|
| **Multiplier** | 1.00 | 1.33 | 1.60 | 2.00 | 4.00 |



## Table 3.5 Top and Bottom Plate to Stud Lateral Connection Requirements for Wind Loads

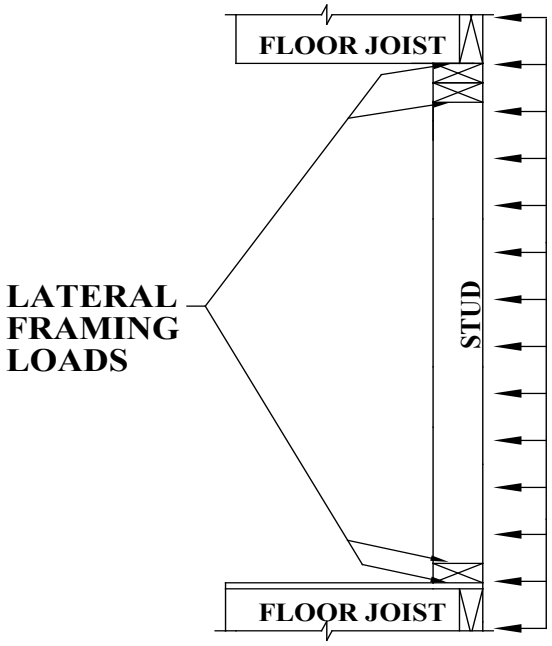
# Exposure C

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wall Height (ft)** | **Unit Framing Loads (plf)[1,2]** | | | | | | | | | | | | | |
| **8** | 62 | 69 | 76 | 84 | 92 | 101 | 110 | 129 | 150 | 172 | 196 | 221 | 248 | 291 |
| **10** | 74 | 82 | 91 | 100 | 110 | 120 | 131 | 154 | 179 | 205 | 233 | 263 | 295 | 346 |
| **12** | 85 | 95 | 105 | 116 | 127 | 139 | 151 | 177 | 206 | 236 | 269 | 303 | 340 | 399 |
| **14** | 96 | 107 | 118 | 130 | 143 | 156 | 170 | 200 | 231 | 266 | 302 | 341 | 383 | 449 |
| **16** | 106 | 118 | 131 | 144 | 158 | 173 | 188 | 221 | 256 | 294 | 335 | 378 | 423 | 497 |
| **18** | 116 | 129 | 143 | 157 | 173 | 189 | 206 | 241 | 280 | 321 | 365 | 413 | 463 | 543 |
| **20** | 125 | 139 | 154 | 170 | 187 | 204 | 222 | 261 | 303 | 347 | 395 | 446 | 500 | 587 |

1 Tabulated framing loads and connection requirements shall be permitted to be multiplied by 0.92 for framing not located within 8 feet of corners.

2 Tabulated framing loads are specified in pounds per linear foot of wall. To determine connection requirements (lbs), multiply the tabulated unit lateral framing load by the multiplier from the table below corresponding to the spacing of the connection:

| Connection Spacing (in.) | 12 | 16 | 19.2 | 24 | 48 |
|---|---|---|---|---|---|
| **Multiplier** | 1.00 | 1.33 | 1.60 | 2.00 | 4.00 |



## Table 3.5A Top and Bottom Plate to Stud Lateral Connections for Wind Loads

# Exposure B

(Prescriptive Alternative to Table 3.5)

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Wall Height (ft) | Required Number of 16d Common Nails or 40d Box Nails per Stud to Plate Connection (plf)[1] | | | | | | | | | | | | | |
| 12 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 12 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 14 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| | 18 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| 16 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| | 12 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 14 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 18 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 |
| | 20 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 |
| 24 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 12 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 14 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 5 |
| | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 18 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | 20 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 |

1 Prescriptive limits are based on assumptions in Table 3.5.

## Table 3.5A Top and Bottom Plate to Stud Lateral Connections for Wind Loads

# Exposure C

(Prescriptive Alternative to Table 3.5)

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Wall Height (ft) | Required Number of 16d Common Nails or 40d Box Nails per Stud to Plate Connection (plf)[1] | | | | | | | | | | | | | |
| 12 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| | 12 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 14 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 18 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 |
| | 20 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| 16 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 12 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 |
| | 14 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 |
| | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 |
| | 18 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 20 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| 24 | 8 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 12 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | 14 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 |
| | 16 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 | 8 |
| | 18 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | 7 | 9 |
| | 20 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 8 | 9 |

1 Prescriptive limits are based on assumptions in Table 3.5.

## Table 3.6 Ridge Connection Requirements for Wind

(Dead Load Assumptions: Roof Assembly DL = 10 psf)

# Exposure B

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roof Pitch | Roof Span (ft) | Required Capacity of Ridge Connection (plf)[1,2,3,4] | | | | | | | | | | | | | |
| 3:12 | 12 | 28 | 39 | 51 | 64 | 77 | 91 | 105 | 136 | 169 | 205 | 243 | 284 | 327 | 397 |
| | 16 | 37 | 52 | 68 | 85 | 103 | 121 | 141 | 182 | 226 | 274 | 325 | 379 | 436 | 529 |
| | 20 | 46 | 65 | 85 | 106 | 128 | 152 | 176 | 227 | 282 | 342 | 406 | 473 | 545 | 661 |
| | 24 | 56 | 78 | 102 | 128 | 154 | 182 | 211 | 272 | 339 | 410 | 487 | 568 | 654 | 793 |
| | 28 | 65 | 91 | 119 | 149 | 180 | 212 | 246 | 318 | 395 | 479 | 568 | 663 | 763 | 925 |
| | 32 | 74 | 105 | 137 | 170 | 206 | 243 | 281 | 363 | 452 | 547 | 649 | 758 | 873 | 1057 |
| | 36 | 83 | 118 | 154 | 192 | 231 | 273 | 316 | 409 | 508 | 616 | 730 | 852 | 982 | 1190 |
| 4:12 | 12 | 26 | 35 | 45 | 55 | 65 | 77 | 88 | 113 | 139 | 168 | 199 | 231 | 266 | 321 |
| | 16 | 35 | 47 | 60 | 73 | 87 | 102 | 118 | 150 | 186 | 224 | 265 | 308 | 354 | 428 |
| | 20 | 43 | 58 | 75 | 91 | 109 | 128 | 147 | 188 | 232 | 280 | 331 | 385 | 443 | 536 |
| | 24 | 52 | 70 | 89 | 110 | 131 | 153 | 176 | 226 | 279 | 336 | 397 | 463 | 532 | 643 |
| | 28 | 61 | 82 | 104 | 128 | 153 | 179 | 206 | 263 | 325 | 392 | 464 | 540 | 620 | 750 |
| | 32 | 69 | 94 | 119 | 146 | 174 | 204 | 235 | 301 | 372 | 448 | 530 | 617 | 709 | 857 |
| | 36 | 78 | 105 | 134 | 164 | 196 | 230 | 264 | 338 | 418 | 504 | 596 | 694 | 797 | 964 |
| 5:12 | 12 | 20 | 27 | 35 | 43 | 51 | 60 | 69 | 88 | 109 | 132 | 156 | 182 | 209 | 253 |
| | 16 | 26 | 36 | 46 | 57 | 68 | 80 | 92 | 118 | 146 | 176 | 208 | 242 | 279 | 337 |
| | 20 | 33 | 45 | 58 | 71 | 85 | 100 | 115 | 147 | 182 | 220 | 260 | 303 | 348 | 421 |
| | 24 | 40 | 54 | 69 | 85 | 102 | 119 | 138 | 177 | 219 | 264 | 312 | 364 | 418 | 506 |
| | 28 | 46 | 63 | 81 | 99 | 119 | 139 | 161 | 206 | 255 | 308 | 364 | 424 | 488 | 590 |
| | 32 | 53 | 72 | 92 | 114 | 136 | 159 | 184 | 236 | 292 | 352 | 416 | 485 | 557 | 674 |
| | 36 | 60 | 81 | 104 | 128 | 153 | 179 | 207 | 265 | 328 | 396 | 468 | 545 | 627 | 758 |
| 6:12 | 12 | 20 | 26 | 33 | 40 | 48 | 55 | 63 | 81 | 99 | 119 | 141 | 164 | 188 | 227 |
| | 16 | 27 | 35 | 44 | 54 | 63 | 74 | 85 | 108 | 133 | 159 | 188 | 218 | 250 | 302 |
| | 20 | 33 | 44 | 55 | 67 | 79 | 92 | 106 | 135 | 166 | 199 | 235 | 273 | 313 | 378 |
| | 24 | 40 | 53 | 66 | 80 | 95 | 111 | 127 | 162 | 199 | 239 | 282 | 327 | 376 | 453 |
| | 28 | 47 | 61 | 77 | 94 | 111 | 129 | 148 | 188 | 232 | 279 | 329 | 382 | 438 | 529 |
| | 32 | 53 | 70 | 88 | 107 | 127 | 148 | 169 | 215 | 265 | 319 | 376 | 436 | 501 | 605 |
| | 36 | 60 | 79 | 99 | 121 | 143 | 166 | 190 | 242 | 298 | 358 | 423 | 491 | 564 | 680 |
| 7:12-12:12 | 12 | 27 | 32 | 37 | 43 | 49 | 55 | 62 | 76 | 94 | 112 | 132 | 153 | 175 | 211 |
| | 16 | 36 | 43 | 50 | 57 | 65 | 73 | 82 | 102 | 125 | 149 | 176 | 204 | 233 | 281 |
| | 20 | 45 | 53 | 62 | 72 | 81 | 92 | 103 | 127 | 156 | 187 | 220 | 254 | 291 | 351 |
| | 24 | 54 | 64 | 75 | 86 | 98 | 110 | 123 | 153 | 187 | 224 | 263 | 305 | 350 | 421 |
| | 28 | 62 | 74 | 87 | 100 | 114 | 129 | 144 | 178 | 218 | 261 | 307 | 356 | 408 | 491 |
| | 32 | 71 | 85 | 99 | 115 | 130 | 147 | 164 | 204 | 250 | 299 | 351 | 407 | 466 | 562 |
| | 36 | 80 | 96 | 112 | 129 | 147 | 165 | 185 | 229 | 281 | 336 | 395 | 458 | 525 | 632 |

1 Tabulated connection requirements shall be permitted to be multiplied by 0.70 for framing not located within 8 feet of building corners.

2 Tabulated connection requirements are based on total uplift minus the roof assembly dead load of 6 psf (0.6 x 10 psf = 6 psf).

3 Tabulated connection requirements are based on a 12 inch ridge connection spacing, for different ridge connection spacing, multiply the tabulated values by the appropriate multiplier below:

| Ridge Connection Spacing (in.) | 12 | 16 | 19.2 | 24 | 48 |
|---|---|---|---|---|---|
| Multiplier | 1.00 | 1.33 | 1.60 | 2.00 | 4.00 |

4 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.6 Ridge Connection Requirements for Wind

(Dead Load Assumptions: Roof Assembly DL = 10 psf)

# Exposure C

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Roof Pitch** | **Roof Span (ft)** | **Required Capacity of Ridge Connection (plf)[1,2,3,4]** | | | | | | | | | | | | | |
| **3:12** | **12** | 67 | 82 | 99 | 117 | 135 | 154 | 174 | 217 | 263 | 313 | 366 | 423 | 482 | 579 |
| | **16** | 89 | 110 | 132 | 156 | 180 | 206 | 233 | 290 | 351 | 417 | 488 | 563 | 643 | 772 |
| | **20** | 111 | 137 | 165 | 194 | 225 | 257 | 291 | 362 | 439 | 522 | 610 | 704 | 804 | 965 |
| | **24** | 133 | 165 | 198 | 233 | 270 | 309 | 349 | 434 | 527 | 626 | 732 | 845 | 965 | 1157 |
| | **28** | 155 | 192 | 231 | 272 | 315 | 360 | 407 | 507 | 615 | 730 | 854 | 986 | 1126 | 1350 |
| | **32** | 178 | 220 | 264 | 311 | 360 | 412 | 465 | 579 | 702 | 835 | 976 | 1127 | 1287 | 1543 |
| | **36** | 200 | 247 | 297 | 350 | 405 | 463 | 523 | 652 | 790 | 939 | 1098 | 1268 | 1447 | 1736 |
| **4:12** | **12** | 57 | 70 | 83 | 97 | 112 | 127 | 143 | 178 | 215 | 254 | 297 | 342 | 390 | 467 |
| | **16** | 76 | 93 | 111 | 130 | 149 | 170 | 191 | 237 | 286 | 339 | 396 | 456 | 520 | 623 |
| | **20** | 95 | 116 | 138 | 162 | 186 | 212 | 239 | 296 | 358 | 424 | 495 | 570 | 650 | 779 |
| | **24** | 114 | 139 | 166 | 194 | 224 | 255 | 287 | 355 | 429 | 509 | 594 | 684 | 780 | 935 |
| | **28** | 133 | 163 | 194 | 227 | 261 | 297 | 335 | 415 | 501 | 594 | 693 | 798 | 910 | 1090 |
| | **32** | 152 | 186 | 222 | 259 | 298 | 339 | 382 | 474 | 573 | 679 | 792 | 912 | 1040 | 1246 |
| | **36** | 171 | 209 | 249 | 291 | 336 | 382 | 430 | 533 | 644 | 763 | 891 | 1027 | 1170 | 1402 |
| **5:12** | **12** | 44 | 54 | 65 | 76 | 88 | 100 | 112 | 140 | 169 | 200 | 234 | 269 | 307 | 368 |
| | **16** | 59 | 73 | 87 | 101 | 117 | 133 | 150 | 186 | 225 | 267 | 311 | 359 | 409 | 491 |
| | **20** | 74 | 91 | 108 | 127 | 146 | 166 | 187 | 233 | 281 | 333 | 389 | 449 | 512 | 613 |
| | **24** | 89 | 109 | 130 | 152 | 175 | 200 | 225 | 279 | 337 | 400 | 467 | 539 | 614 | 736 |
| | **28** | 104 | 127 | 151 | 177 | 204 | 233 | 262 | 326 | 394 | 467 | 545 | 628 | 717 | 858 |
| | **32** | 118 | 145 | 173 | 203 | 234 | 266 | 300 | 372 | 450 | 534 | 623 | 718 | 819 | 981 |
| | **36** | 133 | 163 | 195 | 228 | 263 | 299 | 337 | 419 | 506 | 600 | 701 | 808 | 921 | 1104 |
| **6:12** | **12** | 42 | 51 | 60 | 70 | 80 | 91 | 102 | 126 | 152 | 180 | 210 | 241 | 275 | 329 |
| | **16** | 56 | 67 | 80 | 93 | 107 | 121 | 136 | 168 | 203 | 240 | 280 | 322 | 367 | 439 |
| | **20** | 70 | 84 | 100 | 116 | 134 | 152 | 170 | 210 | 253 | 300 | 349 | 402 | 458 | 548 |
| | **24** | 83 | 101 | 120 | 140 | 160 | 182 | 204 | 252 | 304 | 360 | 419 | 483 | 550 | 658 |
| | **28** | 97 | 118 | 140 | 163 | 187 | 212 | 238 | 294 | 355 | 420 | 489 | 563 | 641 | 767 |
| | **32** | 111 | 135 | 160 | 186 | 214 | 242 | 272 | 336 | 406 | 480 | 559 | 644 | 733 | 877 |
| | **36** | 125 | 152 | 180 | 209 | 240 | 273 | 307 | 379 | 456 | 540 | 629 | 724 | 825 | 987 |
| **7:12-12:12** | **12** | 44 | 51 | 59 | 67 | 76 | 86 | 96 | 118 | 142 | 168 | 195 | 224 | 255 | 304 |
| | **16** | 59 | 68 | 78 | 89 | 101 | 114 | 128 | 158 | 189 | 223 | 260 | 299 | 340 | 406 |
| | **20** | 74 | 85 | 98 | 111 | 126 | 143 | 160 | 197 | 237 | 279 | 325 | 373 | 425 | 507 |
| | **24** | 88 | 103 | 118 | 133 | 152 | 172 | 192 | 236 | 284 | 335 | 390 | 448 | 510 | 609 |
| | **28** | 103 | 120 | 137 | 155 | 177 | 200 | 224 | 276 | 331 | 391 | 455 | 523 | 595 | 710 |
| | **32** | 118 | 137 | 157 | 178 | 202 | 229 | 256 | 315 | 379 | 447 | 520 | 597 | 680 | 812 |
| | **36** | 133 | 154 | 176 | 200 | 228 | 257 | 288 | 355 | 426 | 503 | 585 | 672 | 765 | 913 |

1 Tabulated connection requirements shall be permitted to be multiplied by 0.70 for framing not located within 8 feet of building corners.

2 Tabulated connection requirements are based on total uplift minus the roof assembly dead load of 6 psf (0.6 x 10 psf = 6 psf).

3 Tabulated connection requirements are based on a 12 inch ridge connection spacing, for different ridge connection spacing, multiply the tabulated values by the appropriate multiplier below:

| Ridge Connection Spacing (in.) | 12 | 16 | 19.2 | 24 | 48 |
|---|---|---|---|---|---|
| Multiplier | 1.00 | 1.33 | 1.60 | 2.00 | 4.00 |

4 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.7 Header Connection Requirements for Wind

(Dead Load Assumptions: Roof Assembly DL = 15 psf)

# Exposure B

| Wind Speed 3- second gust (mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roof Span (ft) | Header Span (ft) | Required Capacity of Connection at Each End of Header (lbs)[1] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L |
| 12 | 2 | 8 | 53 | 18 | 59 | 27 | 66 | 37 | 72 | 48 | 79 | 59 | 87 | 71 | 94 | 96 | 111 | 123 | 129 | 151 | 148 | 182 | 168 | 215 | 190 | 250 | 212 | 306 | 249 |
| | 4 | 17 | 106 | 35 | 118 | 55 | 131 | 75 | 145 | 96 | 159 | 119 | 173 | 142 | 189 | 192 | 222 | 245 | 257 | 303 | 295 | 364 | 336 | 430 | 379 | 500 | 425 | 611 | 499 |
| | 6 | 25 | 159 | 53 | 178 | 82 | 197 | 112 | 217 | 144 | 238 | 178 | 260 | 213 | 283 | 287 | 333 | 368 | 386 | 454 | 443 | 547 | 504 | 645 | 569 | 749 | 637 | 917 | 748 |
| | 8 | 34 | 212 | 71 | 237 | 109 | 262 | 150 | 289 | 193 | 317 | 237 | 347 | 284 | 378 | 383 | 443 | 491 | 514 | 606 | 590 | 729 | 672 | 860 | 758 | 999 | 850 | 1222 | 998 |
| | 10 | 42 | 266 | 88 | 296 | 137 | 328 | 187 | 362 | 241 | 397 | 297 | 434 | 355 | 472 | 479 | 554 | 613 | 643 | 757 | 738 | 911 | 839 | 1075 | 948 | 1249 | 1062 | 1528 | 1247 |
| | 12 | 51 | 319 | 106 | 355 | 164 | 394 | 225 | 434 | 289 | 476 | 356 | 520 | 426 | 567 | 575 | 665 | 736 | 771 | 909 | 885 | 1093 | 1007 | 1290 | 1137 | 1499 | 1275 | 1834 | 1496 |
| | 14 | 59 | 372 | 123 | 414 | 191 | 459 | 262 | 506 | 337 | 555 | 415 | 607 | 497 | 661 | 671 | 776 | 859 | 900 | 1060 | 1033 | 1276 | 1175 | 1505 | 1327 | 1748 | 1487 | 2139 | 1746 |
| | 16 | 68 | 425 | 141 | 474 | 218 | 525 | 300 | 578 | 385 | 635 | 475 | 694 | 568 | 756 | 767 | 887 | 981 | 1028 | 1212 | 1181 | 1458 | 1343 | 1720 | 1516 | 1998 | 1700 | 2445 | 1995 |
| | 18 | 76 | 478 | 159 | 533 | 246 | 590 | 337 | 651 | 433 | 714 | 534 | 781 | 639 | 850 | 862 | 998 | 1104 | 1157 | 1363 | 1328 | 1640 | 1511 | 1935 | 1706 | 2248 | 1912 | 2751 | 2244 |
| | 20 | 84 | 531 | 176 | 592 | 273 | 656 | 375 | 723 | 482 | 794 | 593 | 867 | 710 | 944 | 958 | 1108 | 1226 | 1285 | 1514 | 1476 | 1822 | 1679 | 2150 | 1895 | 2498 | 2125 | 3056 | 2494 |
| 24 | 2 | 6 | 53 | 21 | 59 | 37 | 66 | 54 | 72 | 71 | 79 | 89 | 87 | 109 | 94 | 149 | 111 | 193 | 129 | 241 | 148 | 291 | 168 | 345 | 190 | 402 | 212 | 494 | 249 |
| | 4 | 12 | 106 | 42 | 118 | 74 | 131 | 107 | 145 | 142 | 159 | 179 | 173 | 217 | 189 | 299 | 222 | 387 | 257 | 481 | 295 | 582 | 336 | 690 | 379 | 804 | 425 | 987 | 499 |
| | 6 | 18 | 159 | 63 | 178 | 111 | 197 | 161 | 217 | 213 | 238 | 268 | 260 | 326 | 283 | 448 | 333 | 580 | 386 | 722 | 443 | 873 | 504 | 1035 | 569 | 1206 | 637 | 1481 | 748 |
| | 8 | 24 | 212 | 84 | 237 | 148 | 262 | 215 | 289 | 285 | 317 | 358 | 347 | 435 | 378 | 598 | 443 | 773 | 514 | 962 | 590 | 1165 | 672 | 1380 | 758 | 1608 | 850 | 1974 | 998 |
| | 10 | 30 | 266 | 105 | 296 | 185 | 328 | 268 | 362 | 356 | 397 | 447 | 434 | 543 | 472 | 747 | 554 | 967 | 643 | 1203 | 738 | 1456 | 839 | 1725 | 948 | 2010 | 1062 | 2468 | 1247 |
| | 12 | 36 | 319 | 126 | 355 | 222 | 394 | 322 | 434 | 427 | 476 | 537 | 520 | 652 | 567 | 896 | 665 | 1160 | 771 | 1444 | 885 | 1747 | 1007 | 2069 | 1137 | 2412 | 1275 | 2962 | 1496 |
| | 14 | 42 | 372 | 147 | 414 | 259 | 459 | 376 | 506 | 498 | 555 | 626 | 607 | 760 | 661 | 1046 | 776 | 1354 | 900 | 1684 | 1033 | 2038 | 1175 | 2414 | 1327 | 2814 | 1487 | 3455 | 1746 |
| | 16 | 48 | 425 | 168 | 474 | 296 | 525 | 429 | 578 | 569 | 635 | 716 | 694 | 869 | 756 | 1195 | 887 | 1547 | 1028 | 1925 | 1181 | 2329 | 1343 | 2759 | 1516 | 3216 | 1700 | 3949 | 1995 |
| | 18 | 54 | 478 | 190 | 533 | 332 | 590 | 483 | 651 | 640 | 714 | 805 | 781 | 978 | 850 | 1344 | 998 | 1740 | 1157 | 2166 | 1328 | 2620 | 1511 | 3104 | 1706 | 3617 | 1912 | 4442 | 2244 |
| | 20 | 60 | 531 | 211 | 592 | 369 | 656 | 536 | 723 | 712 | 794 | 895 | 867 | 1086 | 944 | 1494 | 1108 | 1934 | 1285 | 2406 | 1476 | 2911 | 1679 | 3449 | 1895 | 4019 | 2125 | 4936 | 2494 |
| 36 | 2 | 4 | 53 | 25 | 59 | 47 | 66 | 70 | 72 | 95 | 79 | 120 | 87 | 147 | 94 | 204 | 111 | 265 | 129 | 331 | 148 | 401 | 168 | 476 | 190 | 556 | 212 | 684 | 249 |
| | 4 | 8 | 106 | 50 | 118 | 94 | 131 | 141 | 145 | 190 | 159 | 241 | 173 | 294 | 189 | 408 | 222 | 530 | 257 | 662 | 295 | 803 | 336 | 953 | 379 | 1112 | 425 | 1367 | 499 |
| | 6 | 12 | 159 | 75 | 178 | 141 | 197 | 211 | 217 | 284 | 238 | 361 | 260 | 441 | 283 | 611 | 333 | 795 | 386 | 993 | 443 | 1204 | 504 | 1429 | 569 | 1668 | 637 | 2051 | 748 |
| | 8 | 16 | 212 | 100 | 237 | 188 | 262 | 282 | 289 | 379 | 317 | 481 | 347 | 588 | 378 | 815 | 443 | 1061 | 514 | 1324 | 590 | 1606 | 672 | 1905 | 758 | 2223 | 850 | 2734 | 998 |
| | 10 | 20 | 266 | 125 | 296 | 236 | 328 | 352 | 362 | 474 | 397 | 602 | 434 | 735 | 472 | 1019 | 554 | 1326 | 643 | 1655 | 738 | 2007 | 839 | 2382 | 948 | 2779 | 1062 | 3418 | 1247 |
| | 12 | 24 | 319 | 150 | 355 | 283 | 394 | 422 | 434 | 569 | 476 | 722 | 520 | 882 | 567 | 1223 | 665 | 1591 | 771 | 1986 | 885 | 2408 | 1007 | 2858 | 1137 | 3335 | 1275 | 4102 | 1496 |
| | 14 | 28 | 372 | 175 | 414 | 330 | 459 | 493 | 506 | 664 | 555 | 842 | 607 | 1029 | 661 | 1427 | 776 | 1856 | 900 | 2317 | 1033 | 2810 | 1175 | 3334 | 1327 | 3891 | 1487 | 4785 | 1746 |
| | 16 | 32 | 425 | 200 | 474 | 377 | 525 | 563 | 578 | 758 | 635 | 963 | 694 | 1176 | 756 | 1631 | 887 | 2121 | 1028 | 2648 | 1181 | 3211 | 1343 | 3811 | 1516 | 4447 | 1700 | 5469 | 1995 |
| | 18 | 36 | 478 | 225 | 533 | 424 | 590 | 634 | 651 | 853 | 714 | 1083 | 781 | 1323 | 850 | 1834 | 998 | 2386 | 1157 | 2979 | 1328 | 3613 | 1511 | 4287 | 1706 | 5003 | 1912 | 6152 | 2244 |
| | 20 | 40 | 531 | 250 | 592 | 471 | 656 | 704 | 723 | 948 | 794 | 1204 | 867 | 1470 | 944 | 2038 | 1108 | 2651 | 1285 | 3310 | 1476 | 4014 | 1679 | 4764 | 1895 | 5558 | 2125 | 6836 | 2494 |

U = Connector uplift load.

L = Connector lateral load (perpendicular to the wall).

1 Tabulated uplift and lateral connection requirements shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated connection requirements assume a roof assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for headers supporting a roof assembly. When calculating uplift loads for headers supporting floor loads, the tabulated uplift loads shall be permitted to be reduced by 36 plf times the header span for each full wall above.

4 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.7 Header Connection Requirements for Wind

(Dead Load Assumptions: Roof Assembly DL = 15 psf)

# Exposure C

| Wind Speed 3- second gust (mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roof Span (ft) | Header Span (ft) | Required Capacity of Connection at Each End of Header (lbs)[1] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L | U[2,3,4] | L |
| 12 | 2 | 40 | 74 | 52 | 82 | 66 | 91 | 80 | 100 | 95 | 110 | 110 | 120 | 127 | 131 | 161 | 154 | 198 | 179 | 238 | 205 | 281 | 233 | 327 | 263 | 375 | 295 | 452 | 346 |
| | 4 | 79 | 148 | 105 | 164 | 132 | 182 | 160 | 201 | 190 | 220 | 221 | 241 | 253 | 262 | 322 | 308 | 397 | 357 | 477 | 410 | 562 | 466 | 653 | 526 | 750 | 590 | 905 | 693 |
| | 6 | 119 | 221 | 157 | 247 | 198 | 273 | 240 | 301 | 285 | 331 | 331 | 361 | 380 | 394 | 483 | 462 | 595 | 536 | 715 | 615 | 843 | 700 | 980 | 790 | 1125 | 885 | 1357 | 1039 |
| | 8 | 159 | 295 | 210 | 329 | 264 | 364 | 320 | 402 | 380 | 441 | 442 | 482 | 506 | 525 | 644 | 616 | 793 | 714 | 953 | 820 | 1124 | 933 | 1306 | 1053 | 1500 | 1181 | 1810 | 1385 |
| | 10 | 199 | 369 | 262 | 411 | 330 | 455 | 400 | 502 | 474 | 551 | 552 | 602 | 633 | 656 | 805 | 770 | 992 | 893 | 1192 | 1025 | 1405 | 1166 | 1633 | 1316 | 1874 | 1476 | 2262 | 1732 |
| | 12 | 238 | 443 | 315 | 493 | 396 | 547 | 480 | 603 | 569 | 661 | 662 | 723 | 760 | 787 | 967 | 924 | 1190 | 1071 | 1430 | 1230 | 1687 | 1399 | 1960 | 1579 | 2249 | 1771 | 2715 | 2078 |
| | 14 | 278 | 516 | 367 | 575 | 461 | 638 | 560 | 703 | 664 | 772 | 773 | 843 | 886 | 918 | 1128 | 1078 | 1388 | 1250 | 1668 | 1435 | 1968 | 1632 | 2286 | 1843 | 2624 | 2066 | 3167 | 2425 |
| | 16 | 318 | 590 | 420 | 658 | 527 | 729 | 641 | 803 | 759 | 882 | 883 | 964 | 1013 | 1049 | 1289 | 1232 | 1587 | 1428 | 1907 | 1640 | 2249 | 1865 | 2613 | 2106 | 2999 | 2361 | 3620 | 2771 |
| | 18 | 357 | 664 | 472 | 740 | 593 | 820 | 721 | 904 | 854 | 992 | 994 | 1084 | 1140 | 1181 | 1450 | 1385 | 1785 | 1607 | 2145 | 1845 | 2530 | 2099 | 2940 | 2369 | 3374 | 2656 | 4072 | 3117 |
| | 20 | 397 | 738 | 525 | 822 | 659 | 911 | 801 | 1004 | 949 | 1102 | 1104 | 1205 | 1266 | 1312 | 1611 | 1539 | 1983 | 1785 | 2383 | 2049 | 2811 | 2332 | 3266 | 2632 | 3749 | 2951 | 4525 | 3464 |
| 24 | 2 | 57 | 74 | 78 | 82 | 100 | 91 | 124 | 100 | 148 | 110 | 173 | 120 | 200 | 131 | 256 | 154 | 318 | 179 | 383 | 205 | 453 | 233 | 528 | 263 | 607 | 295 | 735 | 346 |
| | 4 | 115 | 148 | 156 | 164 | 201 | 182 | 247 | 201 | 296 | 220 | 347 | 241 | 400 | 262 | 513 | 308 | 635 | 357 | 766 | 410 | 907 | 466 | 1056 | 526 | 1214 | 590 | 1469 | 693 |
| | 6 | 172 | 221 | 235 | 247 | 301 | 273 | 371 | 301 | 444 | 331 | 520 | 361 | 600 | 394 | 769 | 462 | 953 | 536 | 1150 | 615 | 1360 | 700 | 1584 | 790 | 1822 | 885 | 2204 | 1039 |
| | 8 | 229 | 295 | 313 | 329 | 401 | 364 | 494 | 402 | 591 | 441 | 693 | 482 | 800 | 525 | 1026 | 616 | 1270 | 714 | 1533 | 820 | 1813 | 933 | 2112 | 1053 | 2429 | 1181 | 2938 | 1385 |
| | 10 | 287 | 369 | 391 | 411 | 502 | 455 | 618 | 502 | 739 | 551 | 866 | 602 | 999 | 656 | 1282 | 770 | 1588 | 893 | 1916 | 1025 | 2267 | 1166 | 2640 | 1316 | 3036 | 1476 | 3673 | 1732 |
| | 12 | 344 | 443 | 469 | 493 | 602 | 547 | 741 | 603 | 887 | 661 | 1040 | 723 | 1199 | 787 | 1539 | 924 | 1905 | 1071 | 2299 | 1230 | 2720 | 1399 | 3168 | 1579 | 3643 | 1771 | 4407 | 2078 |
| | 14 | 401 | 516 | 548 | 575 | 702 | 638 | 865 | 703 | 1035 | 772 | 1213 | 843 | 1399 | 918 | 1795 | 1078 | 2223 | 1250 | 2682 | 1435 | 3174 | 1632 | 3696 | 1843 | 4251 | 2066 | 5142 | 2425 |
| | 16 | 458 | 590 | 626 | 658 | 802 | 729 | 988 | 803 | 1183 | 882 | 1386 | 964 | 1599 | 1049 | 2052 | 1232 | 2541 | 1428 | 3066 | 1640 | 3627 | 1865 | 4224 | 2106 | 4858 | 2361 | 5876 | 2771 |
| | 18 | 516 | 664 | 704 | 740 | 903 | 820 | 1112 | 904 | 1331 | 992 | 1560 | 1084 | 1799 | 1181 | 2308 | 1385 | 2858 | 1607 | 3449 | 1845 | 4080 | 2099 | 4752 | 2369 | 5465 | 2656 | 6611 | 3117 |
| | 20 | 573 | 738 | 782 | 822 | 1003 | 911 | 1235 | 1004 | 1478 | 1102 | 1733 | 1205 | 1999 | 1312 | 2565 | 1539 | 3176 | 1785 | 3832 | 2049 | 4534 | 2332 | 5280 | 2632 | 6072 | 2951 | 7345 | 3464 |
| 36 | 2 | 76 | 74 | 105 | 82 | 135 | 91 | 168 | 100 | 202 | 110 | 237 | 120 | 274 | 131 | 353 | 154 | 438 | 179 | 530 | 205 | 628 | 233 | 732 | 263 | 842 | 295 | 1019 | 346 |
| | 4 | 151 | 148 | 209 | 164 | 271 | 182 | 336 | 201 | 403 | 220 | 474 | 241 | 548 | 262 | 706 | 308 | 877 | 357 | 1059 | 410 | 1255 | 466 | 1463 | 526 | 1684 | 590 | 2039 | 693 |
| | 6 | 227 | 221 | 314 | 247 | 406 | 273 | 503 | 301 | 605 | 331 | 711 | 361 | 823 | 394 | 1059 | 462 | 1315 | 536 | 1589 | 615 | 1883 | 700 | 2195 | 790 | 2526 | 885 | 3058 | 1039 |
| | 8 | 302 | 295 | 419 | 329 | 542 | 364 | 671 | 402 | 807 | 441 | 949 | 482 | 1097 | 525 | 1412 | 616 | 1753 | 714 | 2119 | 820 | 2510 | 933 | 2926 | 1053 | 3368 | 1181 | 4078 | 1385 |
| | 10 | 378 | 369 | 523 | 411 | 677 | 455 | 839 | 502 | 1008 | 551 | 1186 | 602 | 1371 | 656 | 1765 | 770 | 2191 | 893 | 2649 | 1025 | 3138 | 1166 | 3658 | 1316 | 4210 | 1476 | 5097 | 1732 |
| | 12 | 453 | 443 | 628 | 493 | 813 | 547 | 1007 | 603 | 1210 | 661 | 1423 | 723 | 1645 | 787 | 2119 | 924 | 2630 | 1071 | 3178 | 1230 | 3765 | 1399 | 4390 | 1579 | 5052 | 1771 | 6117 | 2078 |
| | 14 | 529 | 516 | 733 | 575 | 948 | 638 | 1174 | 703 | 1412 | 772 | 1660 | 843 | 1920 | 918 | 2472 | 1078 | 3068 | 1250 | 3708 | 1435 | 4393 | 1632 | 5121 | 1843 | 5894 | 2066 | 7136 | 2425 |
| | 16 | 604 | 590 | 837 | 658 | 1083 | 729 | 1342 | 803 | 1613 | 882 | 1897 | 964 | 2194 | 1049 | 2825 | 1232 | 3506 | 1428 | 4238 | 1640 | 5020 | 1865 | 5853 | 2106 | 6736 | 2361 | 8156 | 2771 |
| | 18 | 680 | 664 | 942 | 740 | 1219 | 820 | 1510 | 904 | 1815 | 992 | 2134 | 1084 | 2468 | 1181 | 3178 | 1385 | 3944 | 1607 | 4768 | 1845 | 5648 | 2099 | 6584 | 2369 | 7578 | 2656 | 9175 | 3117 |
| | 20 | 755 | 738 | 1047 | 822 | 1354 | 911 | 1678 | 1004 | 2017 | 1102 | 2372 | 1205 | 2742 | 1312 | 3531 | 1539 | 4383 | 1785 | 5297 | 2049 | 6275 | 2332 | 7316 | 2632 | 8420 | 2951 | 10194 | 3464 |

U = Connector uplift load.
L = Connector lateral load (perpendicular to the wall).

1 Tabulated uplift and lateral connection requirements shall be permitted to be multiplied by 0.75 and 0.92, respectively, for framing not located within 8 feet of building corners.

2 Tabulated connection requirements assume a roof assembly dead load of 9 psf (0.6 x 15 psf = 9 psf).

3 Tabulated uplift loads are specified for headers supporting a roof assembly. When calculating uplift loads for headers supporting floor loads, the tabulated uplift loads shall be permitted to be reduced by 36 plf times the header span for each full wall above.

4 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table 3.8 Window Sill Plate Connection Requirements for Wind Exposure B

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Window Sill Span (ft)** | **Required Lateral Capacity of Connection at Each End of Window Sill Plate (lbs)[1]** | | | | | | | | | | | | | |
| **2** | 53 | 59 | 66 | 72 | 79 | 87 | 94 | 111 | 129 | 148 | 168 | 190 | 212 | 249 |
| **4** | 106 | 118 | 131 | 145 | 159 | 173 | 189 | 222 | 257 | 295 | 336 | 379 | 425 | 499 |
| **6** | 159 | 178 | 197 | 217 | 238 | 260 | 283 | 333 | 386 | 443 | 504 | 569 | 637 | 748 |
| **8** | 212 | 237 | 262 | 289 | 317 | 347 | 378 | 443 | 514 | 590 | 672 | 758 | 850 | 998 |
| **10** | 266 | 296 | 328 | 362 | 397 | 434 | 472 | 554 | 643 | 738 | 839 | 948 | 1062 | 1247 |
| **12** | 319 | 355 | 394 | 434 | 476 | 520 | 567 | 665 | 771 | 885 | 1007 | 1137 | 1275 | 1496 |
| **14** | 372 | 414 | 459 | 506 | 555 | 607 | 661 | 776 | 900 | 1033 | 1175 | 1327 | 1487 | 1746 |
| **16** | 425 | 474 | 525 | 578 | 635 | 694 | 756 | 887 | 1028 | 1181 | 1343 | 1516 | 1700 | 1995 |
| **18** | 478 | 533 | 590 | 651 | 714 | 781 | 850 | 998 | 1157 | 1328 | 1511 | 1706 | 1912 | 2244 |
| **20** | 531 | 592 | 656 | 723 | 794 | 867 | 944 | 1108 | 1285 | 1476 | 1679 | 1895 | 2125 | 2494 |

1 Tabulated lateral connection requirements shall be permitted to be multiplied by 0.92 for framing not located within 8 feet of building corners.

## Table 3.8 Window Sill Plate Connection Requirements for Wind Exposure C

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Window Sill Span (ft)** | **Required Lateral Capacity of Connection at Each End of Window Sill Plate (lbs)[1]** | | | | | | | | | | | | | |
| **2** | 74 | 82 | 91 | 100 | 110 | 120 | 131 | 154 | 179 | 205 | 233 | 263 | 295 | 346 |
| **4** | 148 | 164 | 182 | 201 | 220 | 241 | 262 | 308 | 357 | 410 | 466 | 526 | 590 | 693 |
| **6** | 221 | 247 | 273 | 301 | 331 | 361 | 394 | 462 | 536 | 615 | 700 | 790 | 885 | 1039 |
| **8** | 295 | 329 | 364 | 402 | 441 | 482 | 525 | 616 | 714 | 820 | 933 | 1053 | 1181 | 1385 |
| **10** | 369 | 411 | 455 | 502 | 551 | 602 | 656 | 770 | 893 | 1025 | 1166 | 1316 | 1476 | 1732 |
| **12** | 443 | 493 | 547 | 603 | 661 | 723 | 787 | 924 | 1071 | 1230 | 1399 | 1579 | 1771 | 2078 |
| **14** | 516 | 575 | 638 | 703 | 772 | 843 | 918 | 1078 | 1250 | 1435 | 1632 | 1843 | 2066 | 2425 |
| **16** | 590 | 658 | 729 | 803 | 882 | 964 | 1049 | 1232 | 1428 | 1640 | 1865 | 2106 | 2361 | 2771 |
| **18** | 664 | 740 | 820 | 904 | 992 | 1084 | 1181 | 1385 | 1607 | 1845 | 2099 | 2369 | 2656 | 3117 |
| **20** | 738 | 822 | 911 | 1004 | 1102 | 1205 | 1312 | 1539 | 1785 | 2049 | 2332 | 2632 | 2951 | 3464 |

1 Tabulated lateral connection requirements shall be permitted to be multiplied by 0.92 for framing not located within 8 feet of building corners.

## Table 3.9 Rafter/Ceiling Joist Heel Joint Connection Requirements

(Dead Load Assumptions: Roof Assembly DL = 10 psf)

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Roof Span (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Rafter Slope | Rafter Spacing (in.) | Required Capacity of Heel Joint Connection (lbs.) [2,3,4,5,6] | | | | | | | | | | | |
| 3:12 | 12 | 360 | 720 | 1080 | 422 | 845 | 1267 | 624 | 1248 | 1872 | 826 | 1651 | 2477 |
| | 16 | 480 | 960 | 1440 | 563 | 1126 | 1690 | 832 | 1664 | 2496 | 1101 | 2202 | 3302 |
| | 19.2 | 576 | 1152 | 1728 | 676 | 1352 | 2028 | 998 | 1997 | 2995 | 1321 | 2642 | 3963 |
| | 24 | 720 | 1440 | 2160 | 845 | 1690 | 2534 | 1248 | 2496 | 3744 | 1651 | 3302 | 4954 |
| 4:12 | 12 | 270 | 540 | 810 | 317 | 634 | 950 | 468 | 936 | 1404 | 619 | 1238 | 1858 |
| | 16 | 360 | 720 | 1080 | 422 | 845 | 1267 | 624 | 1248 | 1872 | 826 | 1651 | 2477 |
| | 19.2 | 432 | 864 | 1296 | 507 | 1014 | 1521 | 749 | 1498 | 2246 | 991 | 1981 | 2972 |
| | 24 | 540 | 1080 | 1620 | 634 | 1267 | 1901 | 936 | 1872 | 2808 | 1238 | 2477 | 3715 |
| 5:12 | 12 | 216 | 432 | 648 | 253 | 507 | 760 | 374 | 749 | 1123 | 495 | 991 | 1486 |
| | 16 | 288 | 576 | 864 | 338 | 676 | 1014 | 499 | 998 | 1498 | 660 | 1321 | 1981 |
| | 19.2 | 346 | 691 | 1037 | 406 | 811 | 1217 | 599 | 1198 | 1797 | 793 | 1585 | 2378 |
| | 24 | 432 | 864 | 1296 | 507 | 1014 | 1521 | 749 | 1498 | 2246 | 991 | 1981 | 2972 |
| 7:12 | 12 | 154 | 309 | 463 | 181 | 362 | 543 | 267 | 535 | 802 | 354 | 708 | 1061 |
| | 16 | 206 | 411 | 617 | 241 | 483 | 724 | 357 | 713 | 1070 | 472 | 944 | 1415 |
| | 19.2 | 247 | 494 | 741 | 290 | 579 | 869 | 428 | 856 | 1284 | 566 | 1132 | 1698 |
| | 24 | 309 | 617 | 926 | 362 | 724 | 1086 | 535 | 1070 | 1605 | 708 | 1415 | 2123 |
| 9:12 | 12 | 120 | 240 | 360 | 141 | 282 | 422 | 208 | 416 | 624 | 275 | 550 | 826 |
| | 16 | 160 | 320 | 480 | 188 | 375 | 563 | 277 | 555 | 832 | 367 | 734 | 1101 |
| | 19.2 | 192 | 384 | 576 | 225 | 451 | 676 | 333 | 666 | 998 | 440 | 881 | 1321 |
| | 24 | 240 | 480 | 720 | 282 | 563 | 845 | 416 | 832 | 1248 | 550 | 1101 | 1651 |
| 12:12 | 12 | 90 | 180 | 270 | 106 | 211 | 317 | 156 | 312 | 468 | 206 | 413 | 619 |
| | 16 | 120 | 240 | 360 | 141 | 282 | 422 | 208 | 416 | 624 | 275 | 550 | 826 |
| | 19.2 | 144 | 288 | 432 | 169 | 338 | 507 | 250 | 499 | 749 | 330 | 660 | 991 |
| | 24 | 180 | 360 | 540 | 211 | 422 | 634 | 312 | 624 | 936 | 413 | 826 | 1238 |

1 Tabulated heel joint connection requirements are calculating using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22 and assume a thermal factor, $C_t$=1.2. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

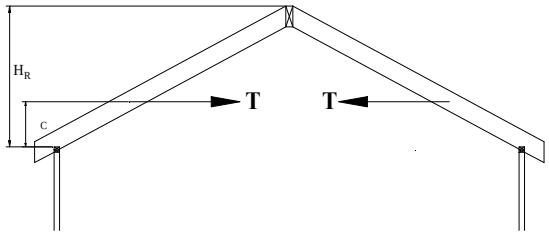
2 Heel joint connections are not required when the ridge is supported by a loadbearing wall, header, or ridge beam designed to resist the applied loads.

3 When intermediate support of the rafter is provided by vertical struts or purlins to a loadbearing wall, the tabulated heel joint connection requirements shall be permitted to be reduced proportionally to the reduction in span.

4 Equivalent connections are required for ceiling joist to ceiling joist lap splices.

5 Tabulated heel joint connection requirements do not include the additional weight of the ceiling assembly.

6 Tabulated heel joint connection requirements assume ceiling joists or rafter ties are located at the bottom of the attic space. When ceiling joists or rafter ties are located higher in the attic space, no attic storage is assumed, and the tabulated heel joint connection requirements shall be increased by the following factors:




| Ceiling Height/ Top Plate-to-Roof Ridge Height ($H_C/H_R$) | Heel Joint Connection Adjustment Factors |
|---|---|
| 1/2 | 2.00 |
| 1/3 | 1.50 |
| 1/4 | 1.33 |
| 1/5 | 1.25 |
| 1/6 | 1.20 |
| 1/10 | 1.11 |

**Note:** Lateral deflection of the rafter below the rafter ties may exceed 3/4 inch when rafter ties are located above one-third of the top plate-to-roof ridge height, $H_R$, or when $H_C$ is greater than 2 feet and may require additional consideration.

## Table 3.9A Rafter/Ceiling Joist Heel Joint Connection Requirements

(Prescriptive Alternative to Table 3.9)

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Roof Span (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Rafter Slope | Rafter Spacing (in.) | Required Number of 16d Common or 40d Box Nails per Heel Joint Connection[2,3,4,5,6] | | | | | | | | | | | |
| 3:12 | 12 | 3 | 5 | 8 | 4 | 7 | 10 | 5 | 10 | 14 | 6 | 12 | 18 |
| | 16 | 4 | 7 | 10 | 5 | 9 | 13 | 7 | 13 | 19 | 8 | 16 | 24 |
| | 19.2 | 4 | 8 | 12 | 5 | 10 | 15 | 8 | 15 | 22 | 10 | 20 | 29 |
| | 24 | 5 | 10 | 15 | 7 | 13 | 19 | 10 | 19 | 28 | 12 | 24 | 36 |
| 4:12 | 12 | 3 | 4 | 6 | 3 | 5 | 7 | 4 | 7 | 11 | 5 | 9 | 14 |
| | 16 | 3 | 5 | 8 | 4 | 7 | 10 | 5 | 10 | 14 | 6 | 12 | 18 |
| | 19.2 | 3 | 6 | 9 | 4 | 8 | 12 | 6 | 11 | 17 | 8 | 15 | 22 |
| | 24 | 4 | 8 | 11 | 5 | 10 | 14 | 7 | 14 | 21 | 9 | 18 | 27 |
| 5:12 | 12 | 3 | 3 | 5 | 3 | 4 | 6 | 3 | 6 | 9 | 4 | 8 | 11 |
| | 16 | 3 | 4 | 6 | 3 | 5 | 8 | 4 | 8 | 11 | 5 | 10 | 15 |
| | 19.2 | 3 | 5 | 7 | 3 | 6 | 9 | 5 | 9 | 14 | 6 | 12 | 18 |
| | 24 | 3 | 6 | 9 | 4 | 8 | 12 | 6 | 11 | 17 | 8 | 15 | 22 |
| 7:12 | 12 | 3 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 6 | 3 | 6 | 8 |
| | 16 | 3 | 3 | 5 | 3 | 4 | 6 | 3 | 6 | 8 | 4 | 7 | 11 |
| | 19.2 | 3 | 4 | 5 | 3 | 5 | 7 | 4 | 7 | 10 | 5 | 9 | 13 |
| | 24 | 3 | 5 | 7 | 3 | 6 | 8 | 4 | 8 | 12 | 6 | 11 | 16 |
| 9:12 | 12 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 5 | 3 | 4 | 6 |
| | 16 | 3 | 3 | 4 | 3 | 3 | 5 | 3 | 5 | 7 | 3 | 6 | 8 |
| | 19.2 | 3 | 3 | 4 | 3 | 4 | 5 | 3 | 5 | 8 | 4 | 7 | 10 |
| | 24 | 3 | 4 | 5 | 3 | 5 | 7 | 4 | 7 | 10 | 4 | 8 | 12 |
| 12:12 | 12 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 5 |
| | 16 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 5 | 3 | 4 | 6 |
| | 19.2 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 6 | 3 | 5 | 8 |
| | 24 | 3 | 3 | 4 | 3 | 4 | 5 | 3 | 5 | 7 | 3 | 6 | 9 |

1 Tabulated heel joint connection requirements are calculating using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22 and assume a thermal factor, $C_t$=1.2. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

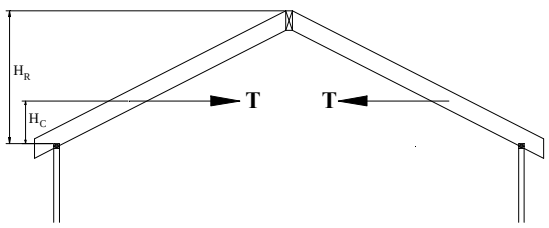
2 Heel joint connections are not required when the ridge is supported by a loadbearing wall, header, or ridge beam designed to resist the applied loads.

3 When intermediate support of the rafter is provided by vertical struts or purlins to a loadbearing wall, the tabulated heel joint connection requirements shall be permitted to be reduced proportionally to the reduction in span.

4 Equivalent connections are required for ceiling joist to ceiling joist lap splices.

5 Tabulated heel joint connection requirements do not include the additional weight of the ceiling assembly.

6 Tabulated heel joint connection requirements assume ceiling joists or rafter ties are located at the bottom of the attic space. When ceiling joists or rafter ties are located higher in the attic space, no attic storage is assumed, and the tabulated heel joint connection requirements shall be increased by the following factors:




| Ceiling Height/ Top Plate-to-Roof Ridge Height ($H_C/H_R$) | Heel Joint Connection Adjustment Factors |
|---|---|
| 1/2 | 2.00 |
| 1/3 | 1.50 |
| 1/4 | 1.33 |
| 1/5 | 1.25 |
| 1/6 | 1.20 |
| 1/10 | 1.11 |

**Note:** Lateral deflection of the rafter below the rafter ties may exceed 3/4 inch when rafter ties are located above one-third of the top plate-to-roof ridge height, $H_R$, or when $H_C$ is greater than 2 feet and may require additional consideration.

## Table 3.10 Roof Sheathing Attachment Requirements for Wind Loads

# Exposure B

| Wind Speed 3-second gust (mph) | | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sheathing Location[1] | Rafter /Truss Spacing (in.) | Fastener Spacing | | Uplift Load per Nail (lbs) | | | | | | | | | | | | | |
| | | Panel Edges (in.) | Interm. Supports (in.) | | | | | | | | | | | | | | |
| Interior Zone | 12 | 6 | 12 | 17 | 19 | 21 | 23 | 25 | 28 | 30 | 35 | 41 | 47 | 53 | 60 | 67 | 78 |
| | | 6 | 6 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 18 | 21 | 24 | 27 | 30 | 34 | 39 |
| | | 4 | 4 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 23 | 26 |
| | | 3 | 3 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 14 | 15 | 17 | 20 |
| | 16 | 6 | 12 | 23 | 25 | 28 | 31 | 34 | 37 | 40 | 47 | 54 | 62 | 70 | 79 | 89 | 104 |
| | | 6 | 6 | 12 | 13 | 14 | 16 | 17 | 19 | 20 | 24 | 27 | 31 | 35 | 40 | 45 | 52 |
| | | 4 | 4 | 8 | 9 | 10 | 10 | 11 | 12 | 14 | 16 | 18 | 21 | 24 | 27 | 30 | 35 |
| | | 3 | 3 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 23 | 26 |
| | 19.2 | 6 | 12 | 27 | 30 | 33 | 37 | 40 | 44 | 48 | 56 | 65 | 74 | 84 | 95 | 107 | 125 |
| | | 6 | 6 | 14 | 15 | 17 | 19 | 20 | 22 | 24 | 28 | 33 | 37 | 42 | 48 | 54 | 63 |
| | | 4 | 4 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 19 | 22 | 25 | 28 | 32 | 36 | 42 |
| | | 3 | 3 | 7 | 8 | 9 | 9 | 10 | 11 | 12 | 14 | 17 | 19 | 21 | 24 | 27 | 32 |
| | 24 | 6 | 12 | 34 | 37 | 41 | 46 | 50 | 55 | 59 | 70 | 81 | 93 | 105 | 119 | 133 | 156 |
| | | 6 | 6 | 17 | 19 | 21 | 23 | 25 | 28 | 30 | 35 | 41 | 47 | 53 | 60 | 67 | 78 |
| | | 4 | 4 | 12 | 13 | 14 | 16 | 17 | 19 | 20 | 24 | 27 | 31 | 35 | 40 | 45 | 52 |
| | | 3 | 3 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 18 | 21 | 24 | 27 | 30 | 34 | 39 |
| Perimeter Edge Zone | 12 | 6 | 12 | 29 | 33 | 36 | 40 | 43 | 47 | 52 | 61 | 70 | 80 | 91 | 103 | 116 | 136 |
| | | 6 | 6 | 15 | 16 | 18 | 20 | 22 | 24 | 26 | 30 | 35 | 40 | 46 | 52 | 58 | 68 |
| | | 4 | 4 | 10 | 11 | 12 | 14 | 15 | 16 | 18 | 20 | 24 | 27 | 31 | 35 | 39 | 45 |
| | | 3 | 3 | 8 | 8 | 9 | 10 | 11 | 12 | 13 | 15 | 18 | 20 | 23 | 26 | 29 | 34 |
| | 16 | 6 | 12 | 39 | 43 | 48 | 53 | 58 | 63 | 69 | 81 | 93 | 107 | 122 | 137 | 154 | 181 |
| | | 6 | 6 | 20 | 22 | 24 | 27 | 29 | 32 | 35 | 40 | 47 | 54 | 61 | 69 | 77 | 91 |
| | | 4 | 4 | 13 | 15 | 16 | 18 | 20 | 21 | 23 | 27 | 31 | 36 | 41 | 46 | 52 | 61 |
| | | 3 | 3 | 10 | 11 | 12 | 14 | 15 | 16 | 18 | 20 | 24 | 27 | 31 | 35 | 39 | 45 |
| | 19.2 | 6 | 12 | 47 | 52 | 57 | 63 | 69 | 76 | 82 | 97 | 112 | 128 | 146 | 165 | 185 | 217 |
| | | 6 | 6 | 23 | 26 | 29 | 32 | 35 | 38 | 41 | 48 | 56 | 64 | 73 | 83 | 93 | 109 |
| | | 4 | 4 | 16 | 18 | 19 | 21 | 23 | 26 | 28 | 32 | 38 | 43 | 49 | 55 | 62 | 73 |
| | | 3 | 3 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 24 | 28 | 32 | 37 | 42 | 47 | 54 |
| | 24 | 6 | 12 | 58 | 65 | 72 | 79 | 86 | 94 | 103 | 121 | 140 | 160 | 182 | 206 | 231 | 271 |
| | | 6 | 6 | 29 | 33 | 36 | 40 | 43 | 47 | 52 | 61 | 70 | 80 | 91 | 103 | 116 | 136 |
| | | 4 | 4 | 20 | 22 | 24 | 27 | 29 | 32 | 35 | 40 | 47 | 54 | 61 | 69 | 77 | 91 |
| | | 3 | 3 | 15 | 16 | 18 | 20 | 22 | 24 | 26 | 30 | 35 | 40 | 46 | 52 | 58 | 68 |
| Gable Endwall Rake or Rake Truss with up to 9" Rake Overhang | Fastener Spacing (in.) | | | Uplift Load per Nail (lbs) | | | | | | | | | | | | | |
| | 6 | | | 29 | 33 | 36 | 40 | 43 | 47 | 52 | 61 | 70 | 80 | 91 | 103 | 116 | 136 |
| | 4 | | | 20 | 22 | 24 | 27 | 29 | 32 | 35 | 40 | 47 | 54 | 61 | 69 | 77 | 91 |
| | 3 | | | 15 | 16 | 18 | 20 | 22 | 24 | 26 | 30 | 35 | 40 | 46 | 52 | 58 | 68 |

**Fastener Uplift Capacity[2, 3] (lbs) for Structural I Plywood and OSB (G=0.50)[6]**

| Sheathing Thickness (in.) | 3/8 | | 7/16 | | 15/32 | | 19/32 | | 23/32 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Framing Member SG | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 |
| 8d common[4] | 70 | 91 | 68 | 100 | 67 | 98 | 63 | 92 | 58 | 86 |
| 10d box[4] | 84 | 101 | 82 | 118 | 81 | 120 | 77 | 114 | 73 | 108 |
| RSRS-03[5] | 91 | 91 | 99 | 106 | 99 | 114 | 99 | 135 | 99 | 135 |

**Fastener Uplift Capacity[2, 3] (lbs) for All Grades of Plywood except Structural I (G=0.42)[6]**

| Sheathing Thickness (in.) | 3/8 | | 7/16 | | 15/32 | | 19/32 | | 23/32 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Framing Member SG | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 |
| 8d common[4] | 64 | 64 | 68 | 75 | 67 | 80 | 63 | 92 | 58 | 86 |
| 10d box[4] | 71 | 71 | 82 | 83 | 81 | 89 | 77 | 113 | 73 | 108 |
| RSRS-03[5] | 64 | 64 | 75 | 75 | 80 | 80 | 99 | 102 | 99 | 120 |

1 For roof sheathing within 4 feet of the perimeter edge of the roof, including 4 feet on each side of the roof peak, the 4-foot perimeter edge zone attachment requirements shall be used.

2 Minimum capacity of withdrawal and fastener head pull-through is tabulated.

3 Tabulated values include a load duration factor adjustment, $C_D$=1.6.

4 Tabulated values for 8d common nails and 10d box nails are applicable to carbon steel nails (bright or galvanized).

5 Tabulated values for RSRS-03 nails are applicable to carbon steel (bright or galvanized) or stainless steel nails.

6 See NDS Table 12.3.3B.

## Table 3.10 Roof Sheathing Attachment Requirements for Wind Loads

# Exposure C

| Wind Speed 3-second gust (mph) | | | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sheathing Location[1] | Rafter /Truss Spacing (in.) | Fastener Spacing | | Uplift Load per Nail (lbs) | | | | | | | | | | | | | |
| | | Panel Edges (in.) | Interm. Supports (in.) | | | | | | | | | | | | | | |
| Interior Zone | 12 | 6 | 12 | 24 | 26 | 29 | 32 | 35 | 38 | 41 | 49 | 56 | 64 | 73 | 83 | 93 | 109 |
| | | 6 | 6 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 25 | 28 | 32 | 37 | 42 | 47 | 55 |
| | | 4 | 4 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 22 | 25 | 28 | 31 | 37 |
| | | 3 | 3 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 19 | 21 | 24 | 28 |
| | 16 | 6 | 12 | 31 | 35 | 38 | 42 | 46 | 51 | 55 | 65 | 75 | 86 | 98 | 110 | 123 | 145 |
| | | 6 | 6 | 16 | 18 | 19 | 21 | 23 | 26 | 28 | 33 | 38 | 43 | 49 | 55 | 62 | 73 |
| | | 4 | 4 | 11 | 12 | 13 | 14 | 16 | 17 | 19 | 22 | 25 | 29 | 33 | 37 | 41 | 49 |
| | | 3 | 3 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 22 | 25 | 28 | 31 | 37 |
| | 19.2 | 6 | 12 | 37 | 42 | 46 | 51 | 56 | 61 | 66 | 77 | 90 | 103 | 117 | 132 | 148 | 174 |
| | | 6 | 6 | 19 | 21 | 23 | 26 | 28 | 31 | 33 | 39 | 45 | 52 | 59 | 66 | 74 | 87 |
| | | 4 | 4 | 13 | 14 | 16 | 17 | 19 | 21 | 22 | 26 | 30 | 35 | 39 | 44 | 50 | 58 |
| | | 3 | 3 | 10 | 11 | 12 | 13 | 14 | 16 | 17 | 20 | 23 | 26 | 30 | 33 | 37 | 44 |
| | 24 | 6 | 12 | 47 | 52 | 57 | 63 | 69 | 76 | 82 | 97 | 112 | 129 | 146 | 165 | 185 | 217 |
| | | 6 | 6 | 24 | 26 | 29 | 32 | 35 | 38 | 41 | 49 | 56 | 64 | 73 | 83 | 93 | 109 |
| | | 4 | 4 | 16 | 18 | 19 | 21 | 23 | 26 | 28 | 33 | 38 | 43 | 49 | 55 | 62 | 73 |
| | | 3 | 3 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 25 | 28 | 32 | 37 | 42 | 47 | 55 |
| Perimeter Edge Zone | 12 | 6 | 12 | 40 | 45 | 50 | 55 | 60 | 66 | 72 | 84 | 97 | 111 | 127 | 143 | 160 | 188 |
| | | 6 | 6 | 20 | 23 | 25 | 28 | 30 | 33 | 36 | 42 | 49 | 56 | 64 | 72 | 80 | 94 |
| | | 4 | 4 | 14 | 15 | 17 | 19 | 20 | 22 | 24 | 28 | 33 | 37 | 43 | 48 | 54 | 63 |
| | | 3 | 3 | 10 | 12 | 13 | 14 | 15 | 17 | 18 | 21 | 25 | 28 | 32 | 36 | 40 | 47 |
| | 16 | 6 | 12 | 54 | 60 | 66 | 73 | 80 | 87 | 95 | 112 | 129 | 149 | 169 | 191 | 214 | 251 |
| | | 6 | 6 | 27 | 30 | 33 | 37 | 40 | 44 | 48 | 56 | 65 | 74 | 85 | 96 | 107 | 126 |
| | | 4 | 4 | 18 | 20 | 22 | 25 | 27 | 29 | 32 | 38 | 43 | 50 | 57 | 64 | 72 | 84 |
| | | 3 | 3 | 14 | 15 | 17 | 19 | 20 | 22 | 24 | 28 | 33 | 37 | 43 | 48 | 54 | 63 |
| | 19.2 | 6 | 12 | 64 | 72 | 79 | 88 | 96 | 105 | 114 | 134 | 155 | 178 | 203 | 229 | 256 | 301 |
| | | 6 | 6 | 32 | 36 | 40 | 44 | 48 | 53 | 57 | 67 | 78 | 89 | 102 | 115 | 128 | 151 |
| | | 4 | 4 | 22 | 24 | 27 | 29 | 32 | 35 | 38 | 45 | 52 | 60 | 68 | 77 | 86 | 101 |
| | | 3 | 3 | 16 | 18 | 20 | 22 | 24 | 27 | 29 | 34 | 39 | 45 | 51 | 58 | 64 | 76 |
| | 24 | 6 | 12 | 80 | 90 | 99 | 109 | 120 | 131 | 143 | 167 | 194 | 223 | 253 | 286 | 320 | 376 |
| | | 6 | 6 | 40 | 45 | 50 | 55 | 60 | 66 | 72 | 84 | 97 | 111 | 127 | 143 | 160 | 188 |
| | | 4 | 4 | 27 | 30 | 33 | 37 | 40 | 44 | 48 | 56 | 65 | 74 | 85 | 96 | 107 | 126 |
| | | 3 | 3 | 20 | 23 | 25 | 28 | 30 | 33 | 36 | 42 | 49 | 56 | 64 | 72 | 80 | 94 |
| Gable Endwall Rake or Rake Truss with up to 9" Rake Overhang | Fastener Spacing (in.) | | | Uplift Load per Nail (lbs) | | | | | | | | | | | | | |
| | 6 | | | 40 | 45 | 50 | 55 | 60 | 66 | 72 | 84 | 97 | 111 | 127 | 143 | 160 | 188 |
| | 4 | | | 27 | 30 | 33 | 37 | 40 | 44 | 48 | 56 | 65 | 74 | 85 | 96 | 107 | 126 |
| | 3 | | | 20 | 23 | 25 | 28 | 30 | 33 | 36 | 42 | 49 | 56 | 64 | 72 | 80 | 94 |

**Fastener Uplift Capacity[2, 3] (lbs) for Structural I Plywood and OSB (G=0.50)[6]**

| Sheathing Thickness (in.) | 3/8 | | 7/16 | | 15/32 | | 19/32 | | 23/32 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Framing Member SG | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 |
| 8d common[4] | 70 | 91 | 68 | 100 | 67 | 98 | 63 | 92 | 58 | 86 |
| 10d box[4] | 84 | 101 | 82 | 118 | 81 | 120 | 77 | 114 | 73 | 108 |
| RSRS-03[5] | 91 | 91 | 99 | 106 | 99 | 114 | 99 | 135 | 99 | 135 |

**Fastener Uplift Capacity[2, 3] (lbs) for All Grades of Plywood except Structural I (G=0.42)[6]**

| Sheathing Thickness (in.) | 3/8 | | 7/16 | | 15/32 | | 19/32 | | 23/32 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Framing Member SG | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 | 0.42 | 0.49 |
| 8d common[4] | 64 | 64 | 68 | 75 | 67 | 80 | 63 | 92 | 58 | 86 |
| 10d box[4] | 71 | 71 | 82 | 83 | 81 | 89 | 77 | 113 | 73 | 108 |
| RSRS-03[5] | 64 | 64 | 75 | 75 | 80 | 80 | 99 | 102 | 99 | 120 |

1 For roof sheathing within 4 feet of the perimeter edge of the roof, including 4 feet on each side of the roof peak, the 4-foot perimeter edge zone attachment requirements shall be used.

2 Minimum capacity of withdrawal and fastener head pull-through is tabulated.

3 Tabulated values include a load duration factor adjustment, $C_D$=1.6.

4 Tabulated values for 8d common nails and 10d box nails are applicable to carbon steel nails (bright or galvanized).

5 Tabulated values for RSRS-03 nails are applicable to carbon steel (bright or galvanized) or stainless steel nails.

6 See NDS Table 12.3.3B.

## Table 3.10A Roof Sheathing Attachment Requirements to resist Wind Loads using OSB sheathing (7/16" nominal thickness) Exposure B

(Prescriptive Alternative to Table 3.10)

| Wind Speed 3-second gust (mph) | | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | STRUCTURAL SHEATHING | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F |
| Sheathing Location[1] | Rafter/Truss Framing Specific Gravity, G | Rafter/Truss Spacing (in.) | Maximum Nail Spacing for 8d Common Nails, or 10d Box Nails (inches, o.c.) [2, 4] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interior Zone | 0.49 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 |
| | | 19.2 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 |
| | | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | 0.42 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 19.2 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 |
| Perimeter Edge Zone | 0.49 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 19.2 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 |
| | | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | Exceeds 7/16" [3] | | | |
| | 0.42 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | 19.2 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 |
| | | 24 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | Exceeds 7/16" [3] | | | |
| Gable Endwall Rake or Rake Truss with up to 9" Rake Overhang | 0.49 | - | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 4 | | 4 | |
| | 0.42 | - | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 4 | | 4 | | 4 | | 3 | | 3 | |

| | | BOARD SHEATHING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sheathing Size | Rafter/Truss Spacing (in.) | Minimum Number of 8d Common Nails Per Support[4] | | | | | | | | | | | | | | |
| 1x6 or 1x8 Sheathing | 12-19.2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 1x10 or Larger Sheathing | 12-19.2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

E - Nail spacing at panel edges (in.)

F - Nail spacing at intermediate supports in the panel field (in.)

1 For roof sheathing within 4 feet of the perimeter edge of the roof, including 4 feet on each side of the roof peak, the 4 foot perimeter edge zone attachment requirements shall be used.

2 For wind speeds greater than 130 mph, blocking is required which transfers lateral load to two additional joists (3 joists total).

3 See Table 3.10 for other fastener and sheathing combinations.

4 Tabulated values for 8d common and 10d box nails are applicable to carbon steel nails (bright or galvanized).

## Table 3.10A Roof Sheathing Attachment Requirements to resist Wind Loads using OSB sheathing (7/16" nominal thickness) Exposure C

(Prescriptive Alternative to Table 3.10)

| Wind Speed 3-second gust (mph) | | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | STRUCTURAL SHEATHING | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F |
| Sheathing Location[1] | Rafter/Truss Framing Specific Gravity, G | Rafter/Truss Spacing (in.) | Maximum Nail Spacing for 8d Common Nails, or 10d Box Nails (inches, o.c.) [2,4] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interior Zone | 0.49 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 19.2 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | Exceeds 7/16" [3] | | | |
| | 0.42 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 |
| | | 19.2 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 |
| | | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | Exceeds 7/16" [3] | | | |
| Perimeter Edge Zone | 0.49 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 |
| | | 19.2 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | | | | |
| | | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | Exceeds capacity of 7/16" [3] | | | | | | | | | |
| | 0.42 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 |
| | | 19.2 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | | | | |
| | | 24 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | Exceeds capacity of 7/16" [3] | | | | | | | | | |
| Gable Endwall Rake or Rake Truss with up to 9" Rake Overhang | 0.49 | - | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 4 | | 4 | | 4 | | 4 | | 3 | |
| | 0.42 | - | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 4 | | 4 | | 4 | | 3 | | 3 | | 3 | | - | | - | |

| | | BOARD SHEATHING |
|---|---|---|
| Sheathing Size | Rafter/Truss Spacing (in.) | Minimum Number of 8d Common Nails Per Support[4] |
| 1x6 or 1x8 Sheathing | 12-19.2 | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 |
| 1x10 or Larger Sheathing | 12-19.2 | 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 |

E - Nail spacing at panel edges (in.)

F - Nail spacing at intermediate supports in the panel field (in.)

1 For roof sheathing within 4 feet of the perimeter edge of the roof, including 4 feet on each side of the roof peak, the 4 foot perimeter edge zone attachment requirements shall be used.

2 For wind speeds greater than 130 mph, blocking is required which transfers lateral load to two additional joists (3 joists total).

3 See Table 3.10 for other fastener and sheathing combinations.

4 Tabulated values for 8d common and 10d box nails are applicable to carbon steel nails (bright or galvanized).

## Table 3.11 Wall Sheathing and Cladding Attachment Requirements for Wind Loads

# Exposure B

| | Wind Speed 3-second gust (mph) | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **STRUCTURAL SHEATHING** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F |
| Sheathing Location[1] | Stud Spacing (inches, o.c.) | Maximum Nail Spacing for 8d Common Nails or 10d Box Nails (inches, o.c.)[2, 3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interior Zone | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 |
| | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 |
| | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 |
| Perimeter Edge Zone | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 |
| | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 |
| | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | **BOARD SHEATHING or LAP SIDING** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheathing Size | Rafter/Truss Spacing (inches, o.c.) | Minimum Number of 8d Common Nails or 10d Box Nails Per Support | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1x6 or 1x8 Sheathing | 12-24 | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | |
| 1x10 or Larger Sheathing | 12-24 | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | |

E - Nail spacing at panel edges (in.)

F - Nail spacing at intermediate supports in the panel field (in.)

1 For wall sheathing within 4 feet of the corners, the 4 foot edge zone attachment requirements shall be used.

2 Tabulated nail spacing assumes sheathing attached to stud framing members with $0.42 \leq G < 0.49$.

3 For exterior panel siding, galvanized box nails shall be permitted to be substituted for common nails.

## Table 3.11 Wall Sheathing and Cladding Attachment Requirements for Wind Loads

# Exposure C

| | Wind Speed 3-second gust (mph) | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **STRUCTURAL SHEATHING** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F | E | F |
| Sheathing Location[1] | Stud Spacing (inches, o.c.) | Maximum Nail Spacing for 8d Common Nails or 10d Box Nails (inches, o.c.)[2, 3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interior Zone | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 |
| | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 |
| | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Perimeter Edge Zone | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 |
| | 16 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | 24 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 |
| | | **BOARD SHEATHING or LAP SIDING** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheathing Size | Rafter/Truss Spacing (inches, o.c.) | Minimum Number of 8d Common Nails or 10d Box Nails Per Support | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1x6 or 1x8 Sheathing | 12-24 | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | |
| 1x10 or Larger Sheathing | 12-24 | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | |

E - Nail spacing at panel edges (in.)

F - Nail spacing at intermediate supports in the panel field (in.)

1 For wall sheathing within 4 feet of the corners, the 4 foot edge zone attachment requirements shall be used.

2 Tabulated nail spacing assumes sheathing attached to stud framing members with $0.42 \leq G < 0.49$.

3 For exterior panel siding, galvanized box nails shall be permitted to be substituted for common nails.

## Table 3.12A Roof Sheathing Requirements for Wind Loads[1] Exposure B

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WOOD STRUCTURAL PANELS** (Strength Axis[3] Applied Perpendicular to Supports)[2] | | | | | | | | | | | | | | |
| **Rafter/Truss Spacing (inches, o.c.)** | **Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.)** | | | | | | | | | | | | | |
| **12** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| **16** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| **19.2** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16[5] (7/16) | 32/16[6] (15/32) |
| **24** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 32/16[6] (15/32) | 40/20[6] (19/32) | 40/20[7] (19/32) | 40/20 (19/32) |
| **BOARD SHEATHING** (diagonally across 3 or more supports) | | | | | | | | | | | | | | |
| **Rafter/Truss Spacing (inches, o.c.)** | **Minimum Board Thickness (in.)** | | | | | | | | | | | | | |
| **12** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| **16** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4 | 3/4 |
| **19.2** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4 | 3/4 | - | - | |
| **24** | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | - | - | | | | | |

1 Where rake overhang outlookers are used, minimum wood structural panel sheathing requirements shall also comply with the minimum requirements of footnotes to Table 3.4C (Exposure B).

2 Tabulated values assume a two-span continuous condition.

3 Strength axis is defined as the axis parallel to the face and back orientation of the flakes or the grain (veneer), which is generally the long panel direction, unless otherwise marked.

4 Minimim PS 1 or PS 2 panel span rating. Minimum nominal panel thickness for a given span rating is shown in parentheses.

5 Where wood structural panel sheathing is OSB, minimum 24/0 span rating (minimum 3/8" nominal thickness) shall be permitted.

6 Where wood structural panel sheathing is OSB, minimum 24/16 span rating (minimum 7/16" nominal thickness) shall be permitted.

7 Where wood structural panel sheathing is OSB, minimum 32/16 span rating (minimum 15/32" nominal thickness) shall be permitted.

## Table 3.12A Roof Sheathing Requirements for Wind Loads[1] Exposure C

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WOOD STRUCTURAL PANELS** (Strength Axis[3] Applied Perpendicular to Supports)[2] | | | | | | | | | | | | | | |
| **Rafter/Truss Spacing (inches, o.c.)** | **Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.)** | | | | | | | | | | | | | |
| **12** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| **16** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16[5] (7/16) | 24/16 (7/16) |
| **19.2** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16[5] (7/16) | 24/16 (7/16) | 32/16[6] (15/32) | 40/20[7] (19/32) | 40/20 (19/32) |
| **24** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16[5] (7/16) | 24/16 (7/16) | 32/16[6] (15/32) | 40/20[7] (19/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 48/24[8] (23/32) |
| **BOARD SHEATHING** (diagonally across 3 or more supports) | | | | | | | | | | | | | | |
| **Rafter/Truss Spacing (inches, o.c.)** | **Minimum Board Thickness (in.)** | | | | | | | | | | | | | |
| **12** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4 |
| **16** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4 | 3/4 | - | - |
| **19.2** | 5/8 | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | - | - | | | |
| **24** | 3/4 | 3/4 | 3/4 | 3/4 | - | - | | | | | | | | |

1 Where rake overhang outlookers are used, minimum wood structural panel sheathing requirements shall also comply with the minimum requirements of footnotes to Table 3.4C (Exposure C).

2 Tabulated values assume a two-span continuous condition.

3 Strength axis is defined as the axis parallel to the face and back orientation of the flakes or the grain (veneer), which is generally the long panel direction, unless otherwise marked.

4 Minimim PS 1 or PS 2 panel span rating. Minimum nominal panel thickness for a given span rating is shown in parentheses.

5 Where wood structural panel sheathing is OSB, minimum 24/0 span rating (minimum 3/8" nominal thickness) shall be permitted.

6 Where wood structural panel sheathing is OSB, minimum 24/16 span rating (minimum 7/16" nominal thickness) shall be permitted.

7 Where wood structural panel sheathing is OSB, minimum 32/16 span rating (minimum 15/32" nominal thickness) shall be permitted.

8 Where wood structural panel sheathing is OSB, minimum 40/20 span rating (minimum 19/32" nominal thickness) shall be permitted.

## Table 3.12B Maximum Roof Sheathing Spans for Roof Live and Snow Loads

(Dead Load Assumptions: Roof Assembly DL = 10 psf)

| | | | Roof Live Load | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | |
|---|---|---|---|---|---|---|
| | | | 20 psf | 30 psf | 50 psf | 70 psf |
| **Sheathing Type** | **Span Rating or Grade** | **Minimum Thickness (in.)** | **Rafter/Truss Spacing (in.)** | | | |
| **Wood Structural Panels** (Sheathing Grades, C-C, C-D, OSB)[1] | **24/0** | **3/8** | 24 | 24 | 19.2 | 19.2 |
| | **24/16** | **7/16** | 24 | 24 | 24 | 19.2 |
| | **32/16** | **15/32** | 24 | 24 | 24 | 24 |
| | **40/20** | **19/32** | 24 | 24 | 24 | 24 |
| | **48/24** | **23/32** | 24 | 24 | 24 | 24 |
| **Wood Structural Panels** (Single Floor Grades, Underlayment, C-C Plugged)[1] | **16 o.c.** | **19/32** | 24 | 24 | 24 | 24 |
| | **20 o.c.** | **19/32** | 24 | 24 | 24 | 24 |
| | **24 o.c.** | **23/32** | 24 | 24 | 24 | 24 |
| | **32 o.c.** | **7/8** | 24 | 24 | 24 | 24 |
| **Lumber Board Sheathing** | **#4 Common or Utility** | **5/8** | 19.2 | 16 | 12 | 12 |
| | **#4 Common or Utility** | **3/4** | 24 | 19.2 | 19.2 | 16 |

[1] Tabulated values are calculated using unbalanced allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

[2] Tabulated values assume a two-span continuous condition.

## Table 3.13A1 Wall Sheathing Requirements for Wind Loads Wood Structural Panels

# Exposure B

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

### STRENGTH AXIS[1] PERPENDICULAR TO SUPPORTS

**PLYWOOD SHEATHING[3] (ALL SHEATHING PANELS INCLUDING STRUCTURAL I)**

| Stud Spacing (inches, o.c.) | Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12-24 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |

**OSB SHEATHING[3] (ALL SHEATHING PANELS INCLUDING STRUCTURAL I)**

| Stud Spacing (inches, o.c.) | Minimum Panel Span Rating[4,5] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12-24 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |

### STRENGTH AXIS[1] PARALLEL TO SUPPORTS

**PLYWOOD SHEATHING[3] (SHEATHING PANELS)**

| Stud Spacing (inches, o.c.) | Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) |
| 16 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) |
| 24[2] | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 48/24 (23/32) | 48/24 (23/32) | 48/24 (23/32) |

**PLYWOOD SHEATHING[3] (STRUCTURAL I SHEATHING PANELS)**

| Stud Spacing (inches, o.c.) | Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| 16 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 24/16 (7/16) |
| 24[2] | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) |

**OSB SHEATHING[3] (SHEATHING PANELS)**

| Stud Spacing (inches, o.c.) | Minimum Panel Span Rating[4,5] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| 16 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) |
| 24 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) |

**OSB SHEATHING[3] (STRUCTURAL I SHEATHING PANELS)**

| Stud Spacing (inches, o.c.) | Minimum Panel Span Rating[4,5] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| 16 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| 24 | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) |

See footnotes 1-5.

## Table 3.13A1 Wall Sheathing Requirements for Wind Loads Wood Structural Panels

# Exposure C

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **STRENGTH AXIS[1] PERPENDICULAR TO SUPPORTS** | | | | | | | | | | | | | | |
| **PLYWOOD SHEATHING[3] (ALL SHEATHING PANELS INCLUDING STRUCTURAL I)** | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
| **12-24** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) |
| **OSB SHEATHING[3] (ALL SHEATHING PANELS INCLUDING STRUCTURAL I)** | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | Minimum Panel Span Rating[4,5] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
| **12-24** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) |
| **STRENGTH AXIS[1] PARALLEL TO SUPPORTS** | | | | | | | | | | | | | | |
| **PLYWOOD SHEATHING[3] (SHEATHING PANELS)** | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
| **12** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) |
| **16** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) |
| **24[2]** | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 48/24 (23/32) | 48/24 (23/32) | 48/24 (23/32) | 48/24 (23/32) | - |
| **PLYWOOD SHEATHING[3] (STRUCTURAL I SHEATHING PANELS)** | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | Minimum Panel Span Rating[4] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
| **12** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) |
| **16** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) |
| **24[2]** | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) |
| **OSB SHEATHING[3] (SHEATHING PANELS)** | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | Minimum Panel Span Rating[4,5] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
| **12** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| **16** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) |
| **24** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 40/20 (19/32) | 48/24 (23/32) |
| **OSB SHEATHING[3] (STRUCTURAL I SHEATHING PANELS)** | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | Minimum Panel Span Rating[4,5] (Minimum Nominal Panel Thickness, in.) | | | | | | | | | | | | | |
| **12** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| **16** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) |
| **24** | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/0 (3/8) | 24/16 (7/16) | 24/16 (7/16) | 32/16 (15/32) | 32/16 (15/32) | 40/20 (19/32) | 40/20 (19/32) |

See footnotes 1-5.

## Footnotes to Table 3.13A1

1 Strength axis is defined as the axis parallel to the face and back orientation of the flakes or the grain (veneer), which is generally the long panel direction, unless otherwise marked.

2 Sheathing shall be plywood with 4 or more plies.

3 Tabulated values assume a two-span continuous condition.

4 Minimim PS 1 or PS 2 panel span rating. Minimum nominal panel thickness for a given span rating is shown in parentheses.

5 Wood structural panels with a Wall-24 (W24) span rating and a minimum nominal thickness of 3/8 in. shall be permitted to be substituted for sheathing grade material with a 24/0 span rating.

## Table 3.13A2 Wall Sheathing Requirements for Wind Loads Other — Exposure B

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CELLULOSIC FIBERBOARD SHEATHING** (short dimension across studs) | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | **Minimum Panel Thickness (in.)** | | | | | | | | | | | | | |
| **12** | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| **16** | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 25/32 | - |
| **BOARD SHEATHING** (diagonally across 3 or more supports) | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | **Minimum Board Thickness (in.)** | | | | | | | | | | | | | |
| **12** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| **16** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| **24** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | - |

## Table 3.13A2 Wall Sheathing Requirements for Wind Loads Other — Exposure C

| Stud Spacing (inches, o.c.) | Minimum Panel Thickness (in.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CELLULOSIC FIBERBOARD SHEATHING** (short dimension across studs) | | | | | | | | | | | | | | |
| **12** | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| **16** | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 25/32 | - | - | - |
| **BOARD SHEATHING** (diagonally across 3 or more supports) | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | **Minimum Board Thickness (in.)** | | | | | | | | | | | | | |
| **12** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| **16** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| **24** | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | - | - | - |

## Table 3.13B Wall Cladding Requirements for Wind Loads — Exposure B

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WOOD STRUCTURAL PANEL AND HARDBOARD PANEL SIDING** (Strength Axis[1,2,3] Parallel to Supports) | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | **Minimum Panel Thickness (in.)** | | | | | | | | | | | | | |
| **12** | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 7/16 |
| **16** | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 7/16 | 15/32 | 15/32 | 15/32 | 19/32 |
| **24[3]** | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 7/16 | 7/16 | 15/32 | 19/32 | 19/32 | 19/32 | 19/32 | 23/32 | 23/32 |
| **HARDBOARD LAP SIDING** (Strength Axis[2] Perpendicular to Supports) | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | **Minimum Board Thickness (in.)** | | | | | | | | | | | | | |
| **12-16** | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 |

1 Strength axis is defined as the axis parallel to the face and back orientation of the flakes or the grain (veneer), which is generally the long panel direction, unless otherwise marked.

2 Sheathing shall be plywood with 4 or more plies or OSB.

3 Tabulated values assume a two-span continuous condition.

## Table 3.13B Wall Cladding Requirements for Wind Loads — Exposure C

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WOOD STRUCTURAL PANEL AND HARDBOARD PANEL SIDING** (Strength Axis[1,2,3] Parallel to Supports) | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | **Minimum Panel Thickness (in.)** | | | | | | | | | | | | | |
| **12** | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 7/16 | 7/16 | 15/32 |
| **16** | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 7/16 | 15/32 | 15/32 | 15/32 | 19/32 | 19/32 | 19/32 |
| **24[3]** | 3/8 | 3/8 | 7/16 | 15/32 | 15/32 | 15/32 | 19/32 | 19/32 | 19/32 | 19/32 | 23/32 | 23/32 | 23/32 | - |
| **HARDBOARD LAP SIDING** (Strength Axis[2] Perpendicular to Supports) | | | | | | | | | | | | | | |
| **Stud Spacing (inches, o.c.)** | **Minimum Board Thickness (in.)** | | | | | | | | | | | | | |
| **12-16** | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 | 7/16 |

1 Strength axis is defined as the axis parallel to the face and back orientation of the flakes or the grain (veneer), which is generally the long panel direction, unless otherwise marked.

2 Sheathing shall be plywood with 4 or more plies or OSB.

3 Tabulated values assume a two-span continuous condition.

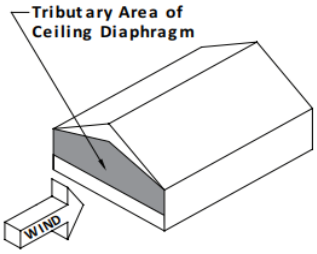
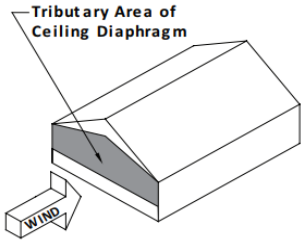
**Table 3.14 Maximum Floor Sheathing Spans for Live Loads**

| Sheathing Type | Span Rating or Grade | Minimum Panel Performance Category (in.) | Maximum Floor Joist Spacing (in.) |
|---|---|---|---|
| **Wood Structural Panels** (Sheathing Grade, C-C, C-D, OSB) | **24/16** | **7/16** | 16 |
| | **32/16** | **15/32** | 16 |
| | **40/20** | **19/32** | 19.2 |
| | **48/24** | **23/32** | 24 |
| **Wood Structural Panels** (Single Floor Grades, Underlayment, C-C Plugged) | **16 o.c.** | **19/32** | 16 |
| | **20 o.c.** | **19/32** | 19.2 |
| | **24 o.c.** | **23/32** | 24 |
| | **32 o.c.** | **7/8** | 24 |
| | **48 o.c.** | **1-3/32** | 24 |
| **Lumber Board Subflooring**[1] | **#4 Common or Utility** | **5/8** | 16 |
| | **#4 Common or Utility** | **3/4** | 24 |

1 Lumber Board Subflooring shall be limited to use with live loads of 40 psf or less.

## Table 3.15 Minimum Attic Floor/Ceiling Length When Bracing Gable Endwall for Wind Loads

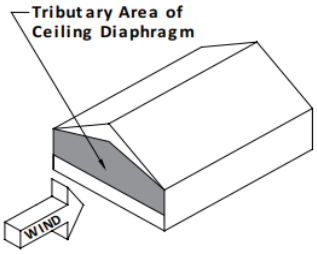
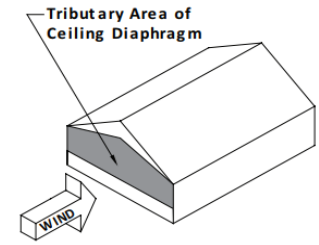
# Exposure B

| Assemblies | Roof Pitch | Roof Span (ft) | Wind Speed 3-second gust (mph): 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Length of Ceiling Diaphragm (ft)[1,2,3] (measured perpendicular to gable endwall) | | | | | | | | | | | | | |
| ***Sheathing Grade: Sheathing and Single-Floor*** **Attic Floor or Ceiling Diaphragm Bracing Gable Endwall** (Wind Parallel to Ridge)   | 1.5:12 -3:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 |
| | 4:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 |
| | 5:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 |
| | 6:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 15 |
| | 7:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 10 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 | 16 |
| | 8:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 17 |
| | 9:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 15 | 17 |
| | 10:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 11 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 | 15 | 18 |
| | 11:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 11 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 16 | 19 |
| | 12:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 11 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 15 | 17 | 20 |
| ***Gypsum*** **Ceiling Diaphragm Bracing Gable Endwall** (Wind Parallel to Ridge)[4]   | 1.5:12-3:12 | 12 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 |
| | | 24 | 8 | 8 | 8 | 8 | 9 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 23 | 26 |
| | | 36 | 12 | 12 | 12 | 12 | 13 | 15 | 16 | 19 | 22 | 25 | 28 | 32 | 35 | 41 |
| | 4:12 | 12 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| | | 24 | 8 | 8 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 19 | 21 | 23 | 27 |
| | | 36 | 12 | 12 | 12 | 13 | 14 | 16 | 17 | 20 | 23 | 26 | 30 | 33 | 37 | 44 |
| | 5:12 | 12 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 10 | 11 | 12 | 14 |
| | | 24 | 8 | 8 | 8 | 9 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 22 | 24 | 29 |
| | | 36 | 12 | 12 | 13 | 14 | 15 | 16 | 18 | 21 | 24 | 28 | 31 | 35 | 40 | 46 |
| | 6:12 | 12 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 24 | 8 | 8 | 8 | 9 | 10 | 11 | 12 | 13 | 16 | 18 | 20 | 23 | 25 | 30 |
| | | 36 | 12 | 12 | 13 | 15 | 16 | 17 | 19 | 22 | 25 | 29 | 33 | 37 | 42 | 49 |
| | 7:12 | 12 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 24 | 8 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 16 | 18 | 21 | 24 | 26 | 31 |
| | | 36 | 12 | 13 | 14 | 15 | 17 | 18 | 20 | 23 | 27 | 31 | 35 | 39 | 44 | 51 |
| | 8:12 | 12 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 15 |
| | | 24 | 8 | 8 | 9 | 10 | 11 | 11 | 12 | 14 | 17 | 19 | 22 | 24 | 27 | 32 |
| | | 36 | 12 | 13 | 15 | 16 | 17 | 19 | 21 | 24 | 28 | 32 | 36 | 41 | 46 | 54 |
| | 9:12 | 12 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 15 |
| | | 24 | 8 | 8 | 9 | 10 | 11 | 12 | 13 | 15 | 17 | 20 | 22 | 25 | 28 | 33 |
| | | 36 | 12 | 14 | 15 | 17 | 18 | 20 | 22 | 25 | 29 | 34 | 38 | 43 | 48 | 56 |
| | 10:12 | 12 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 15 |
| | | 24 | 8 | 9 | 9 | 10 | 11 | 12 | 13 | 15 | 18 | 20 | 23 | 26 | 29 | 34 |
| | | 36 | 13 | 14 | 16 | 17 | 19 | 21 | 23 | 26 | 31 | 35 | 40 | 45 | 50 | 59 |
| | 11:12 | 12 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 16 |
| | | 24 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 21 | 24 | 27 | 30 | 35 |
| | | 36 | 13 | 15 | 16 | 18 | 20 | 22 | 24 | 28 | 32 | 36 | 41 | 47 | 52 | 61 |
| | 12:12 | 12 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | 8 | 10 | 11 | 12 | 14 | 16 |
| | | 24 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 22 | 25 | 28 | 31 | 36 |
| | | 36 | 14 | 16 | 17 | 19 | 21 | 23 | 24 | 29 | 33 | 38 | 43 | 49 | 54 | 64 |

See footnotes 1-4.

## Table 3.15 Minimum Attic Floor/Ceiling Length When Bracing Gable Endwall for Wind Loads

# Exposure C

| Assemblies | Roof Pitch | Roof Span (ft) | Wind Speed 3-second gust (mph): 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Length of Ceiling Diaphragm (ft)[1,2,3] (measured perpendicular to gable endwall) | | | | | | | | | | | | | |
| ***Sheathing Grade: Sheathing and Single-Floor*** **Attic Floor or Ceiling Diaphragm Bracing Gable Endwall** (Wind Parallel to Ridge)   | 1.5:12 -3:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 11 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 15 | 18 |
| | 4:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 12 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 16 | 19 |
| | 5:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 11 | 12 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 15 | 17 | 20 |
| | 6:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 11 | 13 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 | 16 | 18 | 21 |
| | 7:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 11 | 13 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 15 | 17 | 19 | 22 |
| | 8:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 11 | 12 | 14 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 | 16 | 17 | 20 | 23 |
| | 9:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 11 | 12 | 14 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 16 | 18 | 20 | 24 |
| | 10:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 11 | 13 | 15 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 15 | 17 | 19 | 21 | 25 |
| | 11:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 10 | 12 | 13 | 15 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 | 16 | 18 | 20 | 22 | 26 |
| | 12:12 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 7 |
| | | 24 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 11 | 12 | 13 | 16 |
| | | 36 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 14 | 16 | 18 | 21 | 23 | 27 |
| ***Gypsum*** **Ceiling Diaphragm Bracing Gable Endwall** (Wind Parallel to Ridge)[4]   | 1.5:12 -3:12 | 12 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 10 | 11 | 12 | 14 | 16 | 18 |
| | | 24 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 22 | 25 | 28 | 31 | 36 |
| | | 36 | 13 | 14 | 15 | 17 | 19 | 20 | 22 | 26 | 30 | 34 | 39 | 44 | 49 | 57 |
| | 4:12 | 12 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | 9 | 10 | 11 | 13 | 14 | 16 | 19 |
| | | 24 | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 17 | 20 | 23 | 26 | 29 | 32 | 38 |
| | | 36 | 13 | 15 | 16 | 18 | 20 | 21 | 23 | 27 | 32 | 36 | 41 | 46 | 52 | 61 |
| | 5:12 | 12 | 4 | 5 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 19 |
| | | 24 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 18 | 21 | 24 | 27 | 30 | 34 | 40 |
| | | 36 | 14 | 16 | 17 | 19 | 21 | 23 | 25 | 29 | 33 | 38 | 43 | 49 | 55 | 64 |
| | 6:12 | 12 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 20 |
| | | 24 | 9 | 10 | 11 | 12 | 13 | 15 | 16 | 19 | 21 | 25 | 28 | 31 | 35 | 41 |
| | | 36 | 15 | 16 | 18 | 20 | 22 | 24 | 26 | 30 | 35 | 40 | 46 | 51 | 58 | 68 |
| | 7:12 | 12 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 15 | 17 | 20 |
| | | 24 | 9 | 11 | 12 | 13 | 14 | 15 | 16 | 19 | 22 | 25 | 29 | 33 | 36 | 43 |
| | | 36 | 16 | 17 | 19 | 21 | 23 | 25 | 27 | 32 | 37 | 42 | 48 | 54 | 61 | 71 |
| | 8:12 | 12 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 20 |
| | | 24 | 10 | 11 | 12 | 13 | 14 | 16 | 17 | 20 | 23 | 26 | 30 | 34 | 38 | 44 |
| | | 36 | 16 | 18 | 20 | 22 | 24 | 26 | 29 | 33 | 39 | 44 | 50 | 57 | 64 | 75 |
| | 9:12 | 12 | 5 | 5 | 6 | 6 | 7 | 8 | 8 | 10 | 11 | 12 | 14 | 16 | 18 | 21 |
| | | 24 | 10 | 11 | 12 | 14 | 15 | 16 | 18 | 21 | 24 | 27 | 31 | 35 | 39 | 46 |
| | | 36 | 17 | 19 | 21 | 23 | 25 | 27 | 30 | 35 | 40 | 46 | 53 | 59 | 67 | 78 |
| | 10:12 | 12 | 5 | 5 | 6 | 6 | 7 | 8 | 8 | 10 | 11 | 13 | 14 | 16 | 18 | 21 |
| | | 24 | 10 | 12 | 13 | 14 | 15 | 17 | 18 | 21 | 25 | 28 | 32 | 36 | 40 | 47 |
| | | 36 | 18 | 20 | 22 | 24 | 26 | 29 | 31 | 36 | 42 | 48 | 55 | 62 | 70 | 81 |
| | 11:12 | 12 | 5 | 6 | 6 | 7 | 7 | 8 | 8 | 10 | 11 | 13 | 15 | 17 | 18 | 22 |
| | | 24 | 11 | 12 | 13 | 15 | 16 | 17 | 19 | 22 | 25 | 29 | 33 | 37 | 42 | 49 |
| | | 36 | 18 | 21 | 23 | 25 | 27 | 30 | 32 | 38 | 44 | 50 | 57 | 65 | 72 | 85 |
| | 12:12 | 12 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 17 | 19 | 22 |
| | | 24 | 11 | 12 | 14 | 15 | 16 | 18 | 19 | 23 | 26 | 30 | 34 | 38 | 43 | 50 |
| | | 36 | 19 | 21 | 24 | 26 | 28 | 31 | 34 | 40 | 46 | 53 | 60 | 67 | 75 | 88 |

See footnotes 1-4.

## Footnotes to Table 3.15

1 Tabulated attic floor or ceiling length requirements assume sheathing continuous from gable-end to gable-end. For an attic floor or ceiling bracing only one gable-end, the tabulated length requirement shall be permitted to be multiplied by 0.84. In no case shall the length requirement be less than one-third of the distance between bracing walls for gypsum ceilings or one-third of the distance for attic floors or ceilings sheathed with structural sheathing.

2 Tabulated length requirements are based on 10 foot wall heights. For other wall heights, H, the tabulated length requirements shall be multiplied by (H+1)/10.

3 Attic floor or ceiling diaphragms are not required for hip roof systems.

4 Tabulated gypsum ceiling requirements shall be permitted to be multiplied by 0.78 when ceiling framing is spaced at 16 inches o.c. or less.

## Table 3.16A1 Roof Diaphragm Limits for Wind [1]

(Applicable to All Roof Slopes with and without Roof Irregularities)

# Exposure B All Slopes

| Wind Speed 3-second gust (mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Top Plate to Ridge Height (ft) | Roof Diaphragm Width (ft) [2] | Roof Diaphragm Length (ft) [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 5 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 35 | 4 | 31 | 5 | 28 | 6 | 24 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 47 | 6 | 42 | 6 | 37 | 7 | 32 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 59 | 7 | 52 | 8 | 47 | 9 | 40 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 71 | 8 | 63 | 9 | 56 | 11 | 48 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 74 | 11 | 66 | 13 | 56 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 75 | 14 | 64 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 14 | 80 | 16 | 72 |
| 10 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 33 | 5 | 28 | 5 | 25 | 6 | 22 | 6 | 20 | 7 | 17 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 44 | 6 | 38 | 7 | 33 | 8 | 30 | 8 | 26 | 10 | 22 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 55 | 7 | 48 | 8 | 42 | 9 | 37 | 10 | 33 | 12 | 28 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 66 | 9 | 57 | 10 | 50 | 11 | 45 | 12 | 40 | 14 | 34 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 77 | 10 | 67 | 11 | 59 | 13 | 52 | 14 | 46 | 17 | 39 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 77 | 13 | 67 | 15 | 60 | 16 | 53 | 19 | 45 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 15 | 76 | 16 | 67 | 18 | 60 | 21 | 51 |
| 15 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 35 | 4 | 29 | 5 | 25 | 6 | 22 | 6 | 19 | 7 | 17 | 8 | 15 | 9 | 13 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 46 | 6 | 39 | 7 | 34 | 7 | 29 | 8 | 26 | 9 | 23 | 10 | 20 | 12 | 17 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 58 | 7 | 49 | 8 | 42 | 9 | 37 | 10 | 32 | 12 | 29 | 13 | 26 | 15 | 22 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 70 | 8 | 59 | 10 | 51 | 11 | 44 | 12 | 39 | 14 | 34 | 15 | 31 | 18 | 26 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 69 | 11 | 60 | 13 | 52 | 14 | 46 | 16 | 40 | 18 | 36 | 21 | 31 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 79 | 13 | 68 | 14 | 59 | 16 | 52 | 18 | 46 | 20 | 41 | 24 | 35 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 14 | 77 | 16 | 67 | 18 | 59 | 20 | 52 | 23 | 46 | 27 | 39 |
| 20 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 34 | 4 | 31 | 4 | 28 | 5 | 24 | 6 | 21 | 7 | 18 | 8 | 16 | 8 | 14 | 9 | 12 | | |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 45 | 6 | 41 | 6 | 38 | 7 | 32 | 8 | 28 | 9 | 24 | 10 | 21 | 11 | 19 | 12 | 16 | | |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 56 | 7 | 52 | 7 | 47 | 8 | 40 | 10 | 35 | 11 | 30 | 12 | 26 | 14 | 23 | 15 | 21 | | |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 68 | 8 | 62 | 8 | 57 | 10 | 48 | 11 | 42 | 13 | 36 | 15 | 32 | 16 | 28 | 18 | 25 | | |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 79 | 10 | 72 | 10 | 66 | 11 | 57 | 13 | 49 | 15 | 42 | 17 | 37 | 19 | 33 | 21 | 29 | | |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 76 | 13 | 65 | 15 | 56 | 17 | 48 | 19 | 43 | 22 | 38 | 24 | 33 | | |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 14 | 73 | 17 | 63 | 19 | 55 | 22 | 48 | 24 | 42 | 27 | 38 | | |

[1] Roof sheathing applied with long dimension perpendicular to roof framing and staggered.

[2] Roof diaphragm width dimension measured parallel to direction of framing span.

[3] Roof diaphragm length dimension measured perpendicular to direction of framing span.

## Table 3.16A2 Roof Diaphragm Limits for Wind [1]

(Applicable to Simple Gable and Hip Roofs with Roof Slopes ≤ 6:12 without Roof Irregularities—dormers, accent panels, etc)

# Exposure B Low Slopes

| Wind Speed 3-second gust mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Top Plate to Ridge Height (ft) | Roof Diaphragm Width (ft) [2] | Roof Diaphragm Length (ft) [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 0[4] (flat roof) | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 |
| 5 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 5 | 34 | 6 | 29 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 45 | 7 | 38 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 8 | 57 | 9 | 48 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 9 | 68 | 11 | 58 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 11 | 79 | 13 | 68 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 80 | 14 | 77 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 14 | 80 | 16 | 80 |
| 10 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 5 | 36 | 5 | 34 | 6 | 30 | 6 | 27 | 7 | 23 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 7 | 45 | 8 | 40 | 8 | 36 | 10 | 30 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 8 | 57 | 9 | 50 | 10 | 45 | 12 | 38 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 9 | 72 | 10 | 68 | 11 | 60 | 12 | 54 | 14 | 46 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 11 | 80 | 13 | 71 | 14 | 63 | 17 | 54 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 80 | 13 | 80 | 15 | 80 | 16 | 72 | 19 | 61 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 15 | 80 | 16 | 80 | 18 | 80 | 21 | 69 |

[1] Roof sheathing applied with long dimension perpendicular to roof framing and staggered.

[2] Roof diaphragm width dimension measured parallel to direction of framing span.

[3] Roof diaphragm length dimension measured perpendicular to direction of framing span.

[4] Tabulated values for flat roof case are included for interpolation.

## Table 3.16A3 Roof Diaphragm Limits for Wind [1]

(Applicable to All Roof Slopes with and without Roof Irregularities)

# Exposure C All Slopes

| Wind Speed 3-second gust (mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Top Plate to Ridge Height (ft) | Roof Diaphragm Width (ft) [2] | Roof Diaphragm Length (ft) [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 5 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 33 | 5 | 29 | 5 | 25 | 6 | 22 | 7 | 20 | 8 | 17 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 44 | 6 | 39 | 7 | 34 | 8 | 30 | 9 | 27 | 10 | 23 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 56 | 8 | 48 | 9 | 42 | 10 | 38 | 11 | 33 | 13 | 28 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 67 | 9 | 58 | 10 | 51 | 12 | 45 | 13 | 40 | 15 | 34 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 78 | 11 | 68 | 12 | 60 | 13 | 53 | 15 | 47 | 17 | 40 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 78 | 14 | 68 | 15 | 60 | 17 | 54 | 20 | 46 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 15 | 77 | 17 | 68 | 19 | 61 | 22 | 52 |
| 10 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 35 | 4 | 32 | 5 | 27 | 6 | 23 | 6 | 20 | 7 | 18 | 8 | 16 | 9 | 14 | 10 | 12 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 47 | 6 | 43 | 6 | 37 | 7 | 31 | 8 | 27 | 9 | 24 | 10 | 21 | 12 | 19 | 13 | 16 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 59 | 7 | 54 | 8 | 46 | 9 | 39 | 10 | 34 | 11 | 30 | 13 | 27 | 14 | 24 | 17 | 20 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 70 | 8 | 65 | 9 | 55 | 11 | 47 | 12 | 41 | 14 | 36 | 15 | 32 | 17 | 28 | 20 | 24 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 76 | 11 | 64 | 12 | 55 | 14 | 48 | 16 | 42 | 18 | 37 | 20 | 33 | 23 | 28 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 74 | 14 | 63 | 16 | 55 | 18 | 48 | 20 | 43 | 23 | 38 | 26 | 32 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 16 | 71 | 18 | 62 | 20 | 55 | 23 | 48 | 25 | 43 | 30 | 37 |
| 15 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 33 | 4 | 30 | 5 | 27 | 5 | 25 | 6 | 21 | 7 | 18 | 8 | 16 | 9 | 14 | 10 | 12 | | | | |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 44 | 6 | 40 | 6 | 36 | 7 | 33 | 8 | 28 | 9 | 24 | 10 | 21 | 11 | 18 | 13 | 16 | | | | |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 55 | 7 | 50 | 8 | 45 | 8 | 42 | 9 | 35 | 11 | 30 | 12 | 26 | 14 | 23 | 16 | 20 | | | | |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 66 | 8 | 60 | 9 | 55 | 10 | 50 | 11 | 43 | 13 | 37 | 15 | 32 | 17 | 28 | 19 | 25 | | | | |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 77 | 10 | 70 | 10 | 64 | 11 | 58 | 13 | 50 | 15 | 43 | 17 | 37 | 20 | 33 | 22 | 29 | | | | |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 73 | 13 | 67 | 15 | 57 | 17 | 49 | 20 | 43 | 22 | 37 | 25 | 33 | | | | |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 14 | 75 | 17 | 64 | 19 | 55 | 22 | 48 | 25 | 42 | 28 | 37 | | | | |
| 20 | 12 | 4 | 36 | 4 | 32 | 4 | 29 | 5 | 26 | 5 | 24 | 6 | 22 | 6 | 20 | 7 | 17 | 8 | 15 | 9 | 13 | | | | | | | | |
| | 16 | 6 | 48 | 6 | 43 | 6 | 39 | 6 | 35 | 7 | 32 | 7 | 29 | 8 | 27 | 9 | 23 | 11 | 20 | 12 | 17 | | | | | | | | |
| | 20 | 7 | 60 | 7 | 54 | 7 | 49 | 8 | 44 | 8 | 40 | 9 | 37 | 10 | 34 | 11 | 29 | 13 | 25 | 15 | 22 | | | | | | | | |
| | 24 | 8 | 72 | 8 | 65 | 8 | 59 | 9 | 53 | 10 | 49 | 11 | 44 | 12 | 41 | 13 | 35 | 16 | 30 | 18 | 26 | | | | | | | | |
| | 28 | 10 | 80 | 10 | 76 | 10 | 69 | 10 | 62 | 11 | 57 | 12 | 52 | 13 | 48 | 16 | 41 | 18 | 35 | 21 | 30 | | | | | | | | |
| | 32 | 11 | 80 | 11 | 80 | 11 | 79 | 12 | 71 | 13 | 65 | 14 | 59 | 15 | 55 | 18 | 46 | 21 | 40 | 23 | 35 | | | | | | | | |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 14 | 73 | 16 | 67 | 17 | 61 | 20 | 52 | 23 | 45 | 26 | 39 | | | | | | | | |

[1] Roof sheathing applied with long dimension perpendicular to roof framing and staggered.

[2] Roof diaphragm width dimension measured parallel to direction of framing span.

[3] Roof diaphragm length dimension measured perpendicular to direction of framing span.

## Table 3.16A4 Roof Diaphragm Limits for Wind [1]

(Applicable to Simple Gable and Hip Roofs with Roof Slopes ≤ 6:12 without Roof Irregularities—dormers, accent panels, etc)

# Exposure C Low Slopes

| Wind Speed 3-second gust (mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Top Plate to Ridge Height (ft) | Roof Diaphragm Width (ft) [2] | Roof Diaphragm Length (ft) [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 0 [4] (flat roof) | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 5 | 33 | 5 | 28 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 44 | 7 | 37 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 55 | 9 | 47 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 9 | 66 | 10 | 56 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 77 | 12 | 66 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 80 | 13 | 75 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 15 | 80 |
| 5 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 5 | 35 | 5 | 31 | 6 | 27 | 7 | 24 | 8 | 21 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 47 | 7 | 41 | 8 | 36 | 9 | 32 | 10 | 28 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 8 | 59 | 9 | 52 | 10 | 46 | 11 | 41 | 13 | 35 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 9 | 71 | 10 | 62 | 12 | 55 | 13 | 49 | 15 | 42 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 11 | 80 | 12 | 72 | 13 | 64 | 15 | 57 | 17 | 49 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 80 | 14 | 80 | 15 | 73 | 17 | 65 | 20 | 56 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 15 | 80 | 17 | 80 | 19 | 73 | 22 | 63 |
| 10 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 5 | 36 | 6 | 32 | 6 | 28 | 7 | 24 | 8 | 21 | 9 | 19 | 10 | 16 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 7 | 43 | 8 | 37 | 9 | 33 | 10 | 29 | 12 | 26 | 13 | 22 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 8 | 60 | 9 | 53 | 10 | 46 | 11 | 41 | 13 | 36 | 14 | 32 | 17 | 27 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 9 | 72 | 11 | 64 | 12 | 56 | 14 | 49 | 15 | 43 | 17 | 39 | 20 | 33 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 11 | 80 | 12 | 75 | 14 | 65 | 16 | 57 | 18 | 51 | 20 | 45 | 23 | 38 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 80 | 14 | 80 | 16 | 75 | 18 | 66 | 20 | 58 | 23 | 52 | 26 | 44 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 16 | 80 | 18 | 80 | 20 | 74 | 23 | 65 | 25 | 58 | 30 | 50 |

[1] Roof sheathing applied with long dimension perpendicular to roof framing and staggered.

[2] Roof diaphragm width dimension measured parallel to direction of framing span.

[3] Roof diaphragm length dimension measured perpendicular to direction of framing span.

[4] Tabulated values for flat roof case are included for interpolation.

## Table 3.16B Floor Diaphragm Limits for Wind [1]

# Exposure B

| Wind Speed 3-second gust (mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wall Height (ft) | Floor Diaphragm Width (ft) [2] | Floor Diaphragm Length (ft) [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 8 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 35 | 5 | 31 | 5 | 27 | 6 | 24 | 7 | 21 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 47 | 6 | 42 | 7 | 37 | 7 | 33 | 9 | 28 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 59 | 7 | 52 | 8 | 46 | 9 | 41 | 11 | 35 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 71 | 9 | 63 | 10 | 55 | 11 | 49 | 13 | 42 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 73 | 11 | 65 | 13 | 58 | 15 | 49 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 13 | 74 | 14 | 66 | 17 | 56 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 13 | 80 | 14 | 80 | 16 | 74 | 19 | 63 |
| 10 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 33 | 5 | 29 | 6 | 25 | 6 | 22 | 7 | 20 | 8 | 17 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 45 | 6 | 39 | 7 | 34 | 8 | 30 | 9 | 27 | 11 | 23 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 56 | 8 | 49 | 9 | 43 | 10 | 38 | 11 | 34 | 13 | 29 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 67 | 9 | 58 | 11 | 51 | 12 | 45 | 13 | 40 | 15 | 34 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 78 | 11 | 68 | 12 | 60 | 14 | 53 | 15 | 47 | 18 | 40 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 78 | 14 | 68 | 16 | 61 | 17 | 54 | 20 | 46 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 14 | 80 | 16 | 77 | 18 | 68 | 20 | 61 | 23 | 52 |

[1] Floor sheathing applied with long dimension perpendicular to floor framing and staggered.

[2] Floor diaphragm width dimension measured parallel to direction of framing span.

[3] Floor diaphragm length dimension measured perpendicular to direction of framing span.

## Table 3.16B Floor Diaphragm Limits for Wind [1]

# Exposure C

| Wind Speed 3-second gust (mph) | | 90 | | 95 | | 100 | | 105 | | 110 | | 115 | | 120 | | 130 | | 140 | | 150 | | 160 | | 170 | | 180 | | 195 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wall Height (ft) | Floor Diaphragm Width (ft) [2] | Floor Diaphragm Length (ft) [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| 8 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 34 | 5 | 29 | 6 | 25 | 6 | 22 | 7 | 20 | 8 | 17 | 9 | 15 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 45 | 6 | 39 | 7 | 34 | 8 | 30 | 9 | 26 | 10 | 23 | 12 | 20 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 57 | 8 | 49 | 9 | 43 | 10 | 37 | 11 | 33 | 13 | 29 | 15 | 25 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 68 | 9 | 59 | 11 | 51 | 12 | 45 | 13 | 40 | 15 | 35 | 17 | 30 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 11 | 69 | 12 | 60 | 14 | 53 | 16 | 47 | 17 | 41 | 20 | 35 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 12 | 79 | 14 | 69 | 16 | 60 | 18 | 53 | 20 | 47 | 23 | 40 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 14 | 80 | 16 | 77 | 18 | 68 | 20 | 60 | 22 | 53 | 26 | 45 |
| 10 | 12 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 36 | 4 | 33 | 5 | 28 | 6 | 24 | 7 | 21 | 7 | 18 | 8 | 16 | 9 | 14 | 11 | 12 |
| | 16 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 48 | 6 | 44 | 7 | 37 | 8 | 32 | 9 | 28 | 10 | 24 | 11 | 21 | 12 | 19 | 15 | 16 |
| | 20 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 60 | 7 | 55 | 8 | 46 | 9 | 40 | 11 | 35 | 12 | 31 | 14 | 27 | 15 | 24 | 18 | 20 |
| | 24 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 72 | 8 | 66 | 10 | 56 | 11 | 48 | 13 | 42 | 14 | 37 | 16 | 32 | 18 | 29 | 21 | 25 |
| | 28 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 80 | 10 | 77 | 11 | 65 | 13 | 56 | 15 | 49 | 17 | 43 | 19 | 38 | 21 | 34 | 25 | 29 |
| | 32 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 11 | 80 | 13 | 75 | 15 | 64 | 17 | 56 | 19 | 49 | 22 | 43 | 24 | 39 | 28 | 33 |
| | 36 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 12 | 80 | 14 | 80 | 17 | 72 | 19 | 63 | 21 | 55 | 24 | 49 | 27 | 44 | 32 | 37 |

[1] Floor sheathing applied with long dimension perpendicular to floor framing and staggered.

[2] Floor diaphragm width dimension measured parallel to direction of framing span.

[3] Floor diaphragm length dimension measured perpendicular to direction of framing span.

## Table 3.16C1 Diaphragm Limits for Seismic — GSL = 30 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=30 psf; Lateral force resisting system: Wood structural panel shear walls)

| Diaphragm | Minimum Diaphragm Dimension, W (ft) | SDC A | | SDC B | | SDC C | |
|---|---|---|---|---|---|---|---|
| | | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft |
| Roof/Ceiling | 12 | 0.07 | 36 | 0.14 | 36 | 0.22 | 36 |
| | 16 | 0.08 | 48 | 0.16 | 48 | 0.25 | 48 |
| | 20 | 0.10 | 60 | 0.19 | 60 | 0.28 | 60 |
| | 24 | 0.11 | 72 | 0.21 | 72 | 0.32 | 72 |
| | 28 | 0.11 | 80 | 0.22 | 80 | 0.34 | 80 |
| | 32 | 0.11 | 80 | 0.21 | 80 | 0.32 | 80 |
| | 36 | 0.11 | 80 | 0.21 | 80 | 0.31 | 80 |
| Floor | 12 | 0.07 | 36 | 0.14 | 36 | 0.22 | 36 |
| | 16 | 0.09 | 48 | 0.17 | 48 | 0.25 | 48 |
| | 20 | 0.10 | 60 | 0.19 | 60 | 0.29 | 60 |
| | 24 | 0.11 | 72 | 0.21 | 72 | 0.32 | 72 |
| | 28 | 0.12 | 80 | 0.23 | 80 | 0.34 | 80 |
| | 32 | 0.11 | 80 | 0.22 | 80 | 0.33 | 80 |
| | 36 | 0.11 | 80 | 0.21 | 80 | 0.32 | 80 |

| Diaphragm | Minimum Diaphragm Dimension, W (ft) | SDC $D_0$ | | SDC $D_1$ | | SDC $D_2$ | |
|---|---|---|---|---|---|---|---|
| | | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft |
| Roof/Ceiling | 12 | 0.29 | 36 | 0.36 | 36 | 0.51 | 36 |
| | 16 | 0.33 | 48 | 0.41 | 48 | 0.58 | 48 |
| | 20 | 0.38 | 60 | 0.47 | 60 | 0.66 | 60 |
| | 24 | 0.43 | 72 | 0.53 | 72 | 0.74 | 72 |
| | 28 | 0.45 | 80 | 0.56 | 80 | 0.78 | 80 |
| | 32 | 0.43 | 80 | 0.54 | 80 | 0.76 | 80 |
| | 36 | 0.42 | 80 | 0.52 | 80 | 0.73 | 80 |
| Floor | 12 | 0.29 | 36 | 0.36 | 36 | 0.51 | 36 |
| | 16 | 0.34 | 48 | 0.42 | 48 | 0.59 | 48 |
| | 20 | 0.39 | 60 | 0.48 | 60 | 0.67 | 60 |
| | 24 | 0.43 | 72 | 0.54 | 72 | 0.76 | 72 |
| | 28 | 0.46 | 80 | 0.57 | 80 | 0.80 | 80 |
| | 32 | 0.44 | 80 | 0.55 | 80 | 0.77 | 80 |
| | 36 | 0.43 | 80 | 0.53 | 80 | 0.75 | 80 |

See footnotes 1-5.

## Table 3.16C2 Diaphragm Limits for Seismic — GSL = 50psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=50 psf; Lateral force resisting system: Wood structural panel shear walls)

| Diaphragm | Minimum Diaphragm Dimension, W (ft) | SDC A | | SDC B | | SDC C | |
|---|---|---|---|---|---|---|---|
| | | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft |
| Roof/Ceiling | 12 | 0.10 | 36 | 0.20 | 36 | 0.30 | 36 |
| | 16 | 0.12 | 48 | 0.23 | 48 | 0.35 | 48 |
| | 20 | 0.14 | 60 | 0.26 | 60 | 0.40 | 60 |
| | 24 | 0.15 | 72 | 0.30 | 72 | 0.45 | 72 |
| | 28 | 0.16 | 80 | 0.32 | 80 | 0.48 | 80 |
| | 32 | 0.16 | 80 | 0.31 | 80 | 0.47 | 80 |
| | 36 | 0.15 | 80 | 0.30 | 80 | 0.45 | 80 |
| Floor | 12 | 0.07 | 36 | 0.14 | 36 | 0.22 | 36 |
| | 16 | 0.09 | 48 | 0.17 | 48 | 0.25 | 48 |
| | 20 | 0.10 | 60 | 0.19 | 60 | 0.29 | 60 |
| | 24 | 0.11 | 72 | 0.21 | 72 | 0.32 | 72 |
| | 28 | 0.12 | 80 | 0.23 | 80 | 0.34 | 80 |
| | 32 | 0.11 | 80 | 0.22 | 80 | 0.33 | 80 |
| | 36 | 0.11 | 80 | 0.21 | 80 | 0.32 | 80 |

| Diaphragm | Minimum Diaphragm Dimension, W (ft) | SDC $D_0$ | | SDC $D_1$ | | SDC $D_2$ | |
|---|---|---|---|---|---|---|---|
| | | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ ft |
| Roof/Ceiling | 12 | 0.40 | 36 | 0.49 | 36 | 0.69 | 36 |
| | 16 | 0.47 | 48 | 0.58 | 48 | 0.81 | 48 |
| | 20 | 0.53 | 60 | 0.66 | 60 | 0.93 | 60 |
| | 24 | 0.60 | 72 | 0.75 | 72 | 1.00 | 68 |
| | 28 | 0.64 | 80 | 0.80 | 80 | 1.00 | 71 |
| | 32 | 0.62 | 80 | 0.77 | 80 | 1.00 | 74 |
| | 36 | 0.61 | 80 | 0.75 | 80 | 1.00 | 75 |
| Floor | 12 | 0.29 | 36 | 0.36 | 36 | 0.51 | 36 |
| | 16 | 0.34 | 48 | 0.42 | 48 | 0.59 | 48 |
| | 20 | 0.39 | 60 | 0.48 | 60 | 0.67 | 60 |
| | 24 | 0.43 | 72 | 0.54 | 72 | 0.76 | 72 |
| | 28 | 0.46 | 80 | 0.57 | 80 | 0.80 | 80 |
| | 32 | 0.44 | 80 | 0.55 | 80 | 0.77 | 80 |
| | 36 | 0.43 | 80 | 0.53 | 80 | 0.75 | 80 |

See footnotes 1-5.

## Table 3.16C3 Diaphragm Limits for Seismic — GSL = 70 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=70 psf; Lateral force resisting system: Wood structural panel shear walls)

| Diaphragm | Minimum Diaphragm Dimension, W (ft) | SDC A | | SDC B | | SDC C | |
|---|---|---|---|---|---|---|---|
| | | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ |
| | | plf | ft | plf | ft | plf | ft |
| Roof/Ceiling | 12 | 0.11 | 36 | 0.22 | 36 | 0.33 | 36 |
| | 16 | 0.13 | 48 | 0.26 | 48 | 0.39 | 48 |
| | 20 | 0.15 | 60 | 0.29 | 60 | 0.45 | 60 |
| | 24 | 0.17 | 72 | 0.33 | 72 | 0.50 | 72 |
| | 28 | 0.18 | 80 | 0.35 | 80 | 0.54 | 80 |
| | 32 | 0.18 | 80 | 0.34 | 80 | 0.52 | 80 |
| | 36 | 0.17 | 80 | 0.34 | 80 | 0.51 | 80 |
| Floor | 12 | 0.07 | 36 | 0.14 | 36 | 0.22 | 36 |
| | 16 | 0.09 | 48 | 0.17 | 48 | 0.25 | 48 |
| | 20 | 0.10 | 60 | 0.19 | 60 | 0.29 | 60 |
| | 24 | 0.11 | 72 | 0.21 | 72 | 0.32 | 72 |
| | 28 | 0.12 | 80 | 0.23 | 80 | 0.34 | 80 |
| | 32 | 0.11 | 80 | 0.22 | 80 | 0.33 | 80 |
| | 36 | 0.11 | 80 | 0.21 | 80 | 0.32 | 80 |

| Diaphragm | Minimum Diaphragm Dimension, W (ft) | SDC $D_0$ | | SDC $D_1$ | | SDC $D_2$ | |
|---|---|---|---|---|---|---|---|
| | | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ | Diaphragm Load Ratio[3] | Maximum Diaphragm Dimension, $L^{2,3,5}$ |
| | | plf | ft | plf | ft | plf | ft |
| Roof/Ceiling | 12 | 0.44 | 36 | 0.55 | 36 | 0.77 | 36 |
| | 16 | 0.52 | 48 | 0.64 | 48 | 0.90 | 48 |
| | 20 | 0.60 | 60 | 0.74 | 60 | 1.00 | 58 |
| | 24 | 0.68 | 72 | 0.84 | 72 | 1.00 | 61 |
| | 28 | 0.72 | 80 | 0.89 | 80 | 1.00 | 64 |
| | 32 | 0.70 | 80 | 0.87 | 80 | 1.00 | 66 |
| | 36 | 0.68 | 80 | 0.85 | 80 | 1.00 | 67 |
| Floor | 12 | 0.29 | 36 | 0.36 | 36 | 0.51 | 36 |
| | 16 | 0.34 | 48 | 0.42 | 48 | 0.59 | 48 |
| | 20 | 0.39 | 60 | 0.48 | 60 | 0.67 | 60 |
| | 24 | 0.43 | 72 | 0.54 | 72 | 0.76 | 72 |
| | 28 | 0.46 | 80 | 0.57 | 80 | 0.80 | 80 |
| | 32 | 0.44 | 80 | 0.55 | 80 | 0.77 | 80 |
| | 36 | 0.43 | 80 | 0.53 | 80 | 0.75 | 80 |

See footnotes 1-5.

## Footnotes to Table 3.16C

1 Tabulated values are calculated using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$, in ASCE 7-22. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

2 Roof and floor diaphragm sheathing applied with long dimension perpendicular to framing members and staggered. Diaphragm length dimension measured perpendicular to direction of framing span.

3 Maximum diaphragm dimension, L, can be determined for buildings where the lateral force resisting system is other than wood structural panel shear walls, and for other load cases by use of the following equation. In no case shall L exceed the smaller of three times the minimum dimension, W, or 80 feet.

Maximum diaphragm dimension, L = (Tabulated maximum diaphragm dimension)/(The greater of 1.0 or the Diaphragm load ratio in accordance with footnote 3)

4 The diaphragm load ratio can be determined for buildings where the lateral force resisting system is other than wood structural panel shear walls, and for other load cases by use of the following equation for calculation of diaphragm load ratio.

Diaphragm load ratio = (Tabulated diaphragm load ratio) x (Number of stories factor) x (Lateral bracing system factor) x (Diaphragm shear adjustment factor)

where,

Number of stories factor = 1.00 for three-story above grade plane buildings
= 0.92 for two-story above grade plane buildings
= 0.83 for one-story above grade plane buildings

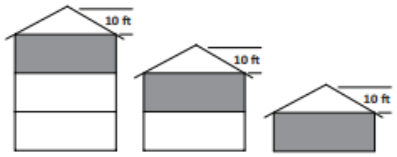
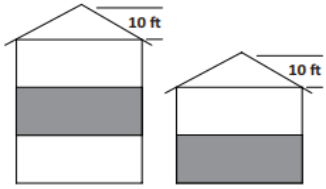
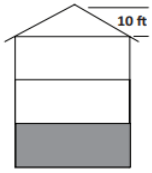
Lateral bracing system factor = 1.0 for wood structural panel shear walls
= 3.25 for other than wood structural panel shear walls

Diaphragm shear adjustment factor:

| Diaphragm | Minimum Building Dimension, W (ft.) | Roof/Ceiling Assembly = 15 psf | | | | Roof/Ceiling Assembly = 25 psf | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf |
| | | Diaphragm shear adjustment factor | | | | | | | |
| Roof/Ceiling | 12 | 1.22 | 1.22 | 1.00 | 1.00 | 1.60 | 1.60 | 1.40 | 1.40 |
| | 16 | 1.19 | 1.19 | 1.00 | 1.00 | 1.59 | 1.59 | 1.41 | 1.41 |
| | 20 | 1.17 | 1.17 | 1.00 | 1.00 | 1.58 | 1.58 | 1.43 | 1.43 |
| | 24 | 1.15 | 1.15 | 1.00 | 1.00 | 1.57 | 1.57 | 1.43 | 1.43 |
| | 28 | 1.13 | 1.13 | 1.00 | 1.00 | 1.57 | 1.57 | 1.44 | 1.44 |
| | 32 | 1.12 | 1.12 | 1.00 | 1.00 | 1.57 | 1.57 | 1.45 | 1.45 |
| | 36 | 1.11 | 1.11 | 1.00 | 1.00 | 1.56 | 1.56 | 1.46 | 1.46 |
| Floor | 12 | 1.37 | 1.54 | 1.00 | 1.19 | 1.37 | 1.54 | 1.00 | 1.19 |
| | 16 | 1.32 | 1.52 | 1.00 | 1.22 | 1.32 | 1.52 | 1.00 | 1.22 |
| | 20 | 1.29 | 1.51 | 1.00 | 1.24 | 1.29 | 1.51 | 1.00 | 1.24 |
| | 24 | 1.26 | 1.50 | 1.00 | 1.26 | 1.26 | 1.50 | 1.00 | 1.26 |
| | 28 | 1.24 | 1.49 | 1.00 | 1.27 | 1.24 | 1.49 | 1.00 | 1.27 |
| | 32 | 1.22 | 1.48 | 1.00 | 1.28 | 1.22 | 1.48 | 1.00 | 1.28 |
| | 36 | 1.20 | 1.47 | 1.00 | 1.29 | 1.20 | 1.47 | 1.00 | 1.29 |

5 Effective seismic weight used to determine diaphragm load includes 20% of ASD ground snow load, $p_{g(ASD)}$, where the ASD ground snow load, $p_{g(ASD)}$, exceeds 30 psf. $S_{DS}$ used for SDC A, B, C, $D_0$, $D_1$ and $D_2$ are as follows: $S_{DS}=0.17$ for SDC A; $S_{DS}=0.33$ for SDC B; $S_{DS}=0.50$ for SDC C; $S_{DS}=0.67$ for SDC $D_0$; $S_{DS}=0.83$ for SDC $D_1$; $S_{DS}=1.17$ for SDC $D_2$.

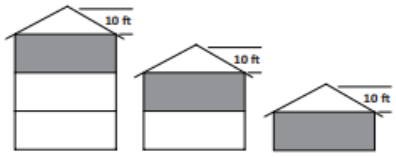
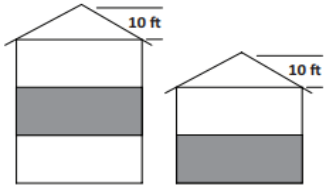
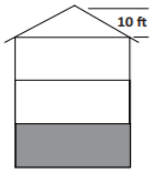
## Table 3.17A Segmented Shear Wall Sheathing Requirements for Wind — Exposure B

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shear Wall Line Beneath | Building Dimension, L or W (ft) | Minimum Length of Full Height Sheathing on Exterior Shear Walls Perpendicular to Building Dimension, L or W (ft)[1,2,3,4,5] | | | | | | | | | | | | | |
| Roof & Ceiling   | 12 | 1.3 | 1.4 | 1.5 | 1.7 | 1.8 | 2.0 | 2.2 | 2.5 | 2.9 | 3.4 | 3.8 | 4.3 | 4.9 | 5.7 |
| | 16 | 1.8 | 1.8 | 2.0 | 2.2 | 2.4 | 2.6 | 2.9 | 3.4 | 3.9 | 4.5 | 5.1 | 5.8 | 6.5 | 7.6 |
| | 20 | 2.2 | 2.3 | 2.5 | 2.8 | 3.0 | 3.3 | 3.6 | 4.2 | 4.9 | 5.6 | 6.4 | 7.2 | 8.1 | 9.5 |
| | 24 | 2.6 | 2.7 | 3.0 | 3.3 | 3.6 | 4.0 | 4.3 | 5.1 | 5.9 | 6.8 | 7.7 | 8.7 | 9.7 | 11.4 |
| | 28 | 3.1 | 3.2 | 3.5 | 3.9 | 4.2 | 4.6 | 5.0 | 5.9 | 6.9 | 7.9 | 9.0 | 10.1 | 11.4 | 13.3 |
| | 32 | 3.5 | 3.6 | 4.0 | 4.4 | 4.8 | 5.3 | 5.8 | 6.8 | 7.8 | 9.0 | 10.3 | 11.6 | 13.0 | 15.2 |
| | 36 | 4.0 | 4.1 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.6 | 8.8 | 10.1 | 11.5 | 13.0 | 14.6 | 17.1 |
| | 40 | 4.4 | 4.5 | 5.0 | 5.5 | 6.1 | 6.6 | 7.2 | 8.5 | 9.8 | 11.3 | 12.8 | 14.5 | 16.2 | 19.0 |
| | 50 | 5.5 | 5.6 | 6.3 | 6.9 | 7.6 | 8.3 | 9.0 | 10.6 | 12.3 | 14.1 | 16.0 | 18.1 | 20.3 | 23.8 |
| | 60 | 6.6 | 6.8 | 7.5 | 8.3 | 9.1 | 9.9 | 10.8 | 12.7 | 14.7 | 16.9 | 19.2 | 21.7 | 24.3 | 28.6 |
| | 70 | 7.7 | 7.9 | 8.8 | 9.7 | 10.6 | 11.6 | 12.6 | 14.8 | 17.2 | 19.7 | 22.4 | 25.3 | 28.4 | 33.3 |
| | 80 | 8.8 | 9.0 | 10.0 | 11.0 | 12.1 | 13.2 | 14.4 | 16.9 | 19.6 | 22.5 | 25.6 | 28.9 | 32.4 | 38.1 |
| Roof, Ceiling, & 1 Floor   | 20 | 4.6 | 4.7 | 5.1 | 5.6 | 6.1 | 6.7 | 7.3 | 8.6 | 9.9 | 11.4 | 13.0 | 14.6 | 16.4 | 19.3 |
| | 24 | 5.6 | 5.6 | 6.1 | 6.7 | 7.4 | 8.0 | 8.8 | 10.3 | 11.9 | 13.7 | 15.6 | 17.6 | 19.7 | 23.1 |
| | 28 | 6.5 | 6.6 | 7.1 | 7.8 | 8.6 | 9.4 | 10.2 | 12.0 | 13.9 | 16.0 | 18.2 | 20.5 | 23.0 | 27.0 |
| | 32 | 7.4 | 7.5 | 8.1 | 8.9 | 9.8 | 10.7 | 11.7 | 13.7 | 15.9 | 18.2 | 20.7 | 23.4 | 26.3 | 30.8 |
| | 36 | 8.3 | 8.4 | 9.1 | 10.1 | 11.0 | 12.1 | 13.1 | 15.4 | 17.9 | 20.5 | 23.3 | 26.3 | 29.5 | 34.7 |
| | 40 | 9.3 | 9.4 | 10.1 | 11.2 | 12.3 | 13.4 | 14.6 | 17.1 | 19.9 | 22.8 | 25.9 | 29.3 | 32.8 | 38.5 |
| | 50 | 11.6 | 11.7 | 12.7 | 14.0 | 15.3 | 16.7 | 18.2 | 21.4 | 24.8 | 28.5 | 32.4 | 36.6 | 41.0 | 48.1 |
| | 60 | 13.9 | 14.1 | 15.2 | 16.8 | 18.4 | 20.1 | 21.9 | 25.7 | 29.8 | 34.2 | 38.9 | 43.9 | 49.2 | 57.8 |
| | 70 | 16.2 | 16.4 | 17.7 | 19.5 | 21.4 | 23.4 | 25.5 | 30.0 | 34.7 | 39.9 | 45.4 | 51.2 | 57.4 | 67.4 |
| | 80 | 18.5 | 18.8 | 20.3 | 22.3 | 24.5 | 26.8 | 29.2 | 34.2 | 39.7 | 45.6 | 51.9 | 58.5 | 65.6 | 77.0 |
| Roof, Ceiling, & 2 Floors   | 28 | 9.9 | 10.0 | 10.7 | 11.8 | 12.9 | 14.1 | 15.4 | 18.0 | 20.9 | 24.0 | 27.3 | 30.9 | 34.6 | 40.6 |
| | 32 | 11.3 | 11.4 | 12.2 | 13.5 | 14.8 | 16.1 | 17.6 | 20.6 | 23.9 | 27.5 | 31.2 | 35.3 | 39.5 | 46.4 |
| | 36 | 12.7 | 12.8 | 13.7 | 15.1 | 16.6 | 18.2 | 19.8 | 23.2 | 26.9 | 30.9 | 35.1 | 39.7 | 44.5 | 52.2 |
| | 40 | 14.1 | 14.2 | 15.3 | 16.8 | 18.5 | 20.2 | 22.0 | 25.8 | 29.9 | 34.3 | 39.0 | 44.1 | 49.4 | 58.0 |
| | 50 | 17.7 | 17.8 | 19.1 | 21.0 | 23.1 | 25.2 | 27.5 | 32.2 | 37.4 | 42.9 | 48.8 | 55.1 | 61.8 | 72.5 |
| | 60 | 21.2 | 21.4 | 22.9 | 25.2 | 27.7 | 30.3 | 32.9 | 38.7 | 44.8 | 51.5 | 58.6 | 66.1 | 74.1 | 87.0 |
| | 70 | 24.7 | 24.9 | 26.7 | 29.4 | 32.3 | 35.3 | 38.4 | 45.1 | 52.3 | 60.1 | 68.3 | 77.1 | 86.5 | 101.5 |
| | 80 | 28.3 | 28.5 | 30.5 | 33.6 | 36.9 | 40.3 | 43.9 | 51.6 | 59.8 | 68.6 | 78.1 | 88.2 | 98.8 | 116.0 |

See footnotes 1-5.

## Table 3.17A Segmented Shear Wall Sheathing Requirements for Wind

# Exposure C

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shear Wall Line Beneath | Building Dimension, L or W (ft) | Minimum Length of Full Height Sheathing on Exterior Shear Walls Perpendicular to Building Dimension, L or W (ft)[1,2,3,4,5] | | | | | | | | | | | | | |
| Roof & Ceiling   | 12 | 1.7 | 1.9 | 2.1 | 2.3 | 2.5 | 2.8 | 3.0 | 3.5 | 4.1 | 4.7 | 5.3 | 6.0 | 6.8 | 7.9 |
| | 16 | 2.3 | 2.5 | 2.8 | 3.1 | 3.4 | 3.7 | 4.0 | 4.7 | 5.5 | 6.3 | 7.1 | 8.0 | 9.0 | 10.6 |
| | 20 | 2.8 | 3.1 | 3.5 | 3.8 | 4.2 | 4.6 | 5.0 | 5.9 | 6.8 | 7.8 | 8.9 | 10.0 | 11.3 | 13.2 |
| | 24 | 3.4 | 3.8 | 4.2 | 4.6 | 5.0 | 5.5 | 6.0 | 7.1 | 8.2 | 9.4 | 10.7 | 12.1 | 13.5 | 15.9 |
| | 28 | 3.9 | 4.4 | 4.9 | 5.4 | 5.9 | 6.4 | 7.0 | 8.2 | 9.5 | 11.0 | 12.5 | 14.1 | 15.8 | 18.5 |
| | 32 | 4.5 | 5.0 | 5.6 | 6.1 | 6.7 | 7.4 | 8.0 | 9.4 | 10.9 | 12.5 | 14.2 | 16.1 | 18.0 | 21.2 |
| | 36 | 5.1 | 5.6 | 6.3 | 6.9 | 7.6 | 8.3 | 9.0 | 10.6 | 12.3 | 14.1 | 16.0 | 18.1 | 20.3 | 23.8 |
| | 40 | 5.6 | 6.3 | 7.0 | 7.7 | 8.4 | 9.2 | 10.0 | 11.8 | 13.6 | 15.6 | 17.8 | 20.1 | 22.5 | 26.4 |
| | 50 | 7.0 | 7.8 | 8.7 | 9.6 | 10.5 | 11.5 | 12.5 | 14.7 | 17.0 | 19.6 | 22.3 | 25.1 | 28.2 | 33.0 |
| | 60 | 8.4 | 9.4 | 10.4 | 11.5 | 12.6 | 13.8 | 15.0 | 17.6 | 20.4 | 23.5 | 26.7 | 30.1 | 33.8 | 39.7 |
| | 70 | 9.9 | 11.0 | 12.2 | 13.4 | 14.7 | 16.1 | 17.5 | 20.6 | 23.8 | 27.4 | 31.2 | 35.2 | 39.4 | 46.3 |
| | 80 | 11.3 | 12.6 | 13.9 | 15.3 | 16.8 | 18.4 | 20.0 | 23.5 | 27.3 | 31.3 | 35.6 | 40.2 | 45.1 | 52.9 |
| Roof, Ceiling, & 1 Floor   | 20 | 5.7 | 6.3 | 7.0 | 7.8 | 8.5 | 9.3 | 10.1 | 11.9 | 13.8 | 15.8 | 18.0 | 20.3 | 22.8 | 26.7 |
| | 24 | 6.8 | 7.6 | 8.4 | 9.3 | 10.2 | 11.2 | 12.2 | 14.3 | 16.5 | 19.0 | 21.6 | 24.4 | 27.3 | 32.1 |
| | 28 | 8.0 | 8.9 | 9.8 | 10.9 | 11.9 | 13.0 | 14.2 | 16.6 | 19.3 | 22.2 | 25.2 | 28.5 | 31.9 | 37.4 |
| | 32 | 9.1 | 10.2 | 11.3 | 12.4 | 13.6 | 14.9 | 16.2 | 19.0 | 22.1 | 25.3 | 28.8 | 32.5 | 36.5 | 42.8 |
| | 36 | 10.3 | 11.4 | 12.7 | 14.0 | 15.3 | 16.7 | 18.2 | 21.4 | 24.8 | 28.5 | 32.4 | 36.6 | 41.0 | 48.1 |
| | 40 | 11.4 | 12.7 | 14.1 | 15.5 | 17.0 | 18.6 | 20.3 | 23.8 | 27.6 | 31.7 | 36.0 | 40.7 | 45.6 | 53.5 |
| | 50 | 14.2 | 15.9 | 17.6 | 19.4 | 21.3 | 23.3 | 25.3 | 29.7 | 34.5 | 39.6 | 45.0 | 50.8 | 57.0 | 66.9 |
| | 60 | 17.1 | 19.0 | 21.1 | 23.3 | 25.5 | 27.9 | 30.4 | 35.7 | 41.4 | 47.5 | 54.0 | 61.0 | 68.4 | 80.2 |
| | 70 | 19.9 | 22.2 | 24.6 | 27.1 | 29.8 | 32.6 | 35.5 | 41.6 | 48.3 | 55.4 | 63.0 | 71.1 | 79.8 | 93.6 |
| | 80 | 22.8 | 25.4 | 28.1 | 31.0 | 34.0 | 37.2 | 40.5 | 47.6 | 55.1 | 63.3 | 72.0 | 81.3 | 91.2 | 107.0 |
| Roof, Ceiling, & 2 Floors   | 28 | 12.0 | 13.4 | 14.8 | 16.3 | 17.9 | 19.6 | 21.4 | 25.1 | 29.1 | 33.4 | 38.0 | 42.9 | 48.0 | 56.4 |
| | 32 | 13.7 | 15.3 | 16.9 | 18.7 | 20.5 | 22.4 | 24.4 | 28.6 | 33.2 | 38.1 | 43.4 | 49.0 | 54.9 | 64.4 |
| | 36 | 15.4 | 17.2 | 19.1 | 21.0 | 23.1 | 25.2 | 27.5 | 32.2 | 37.4 | 42.9 | 48.8 | 55.1 | 61.8 | 72.5 |
| | 40 | 17.2 | 19.1 | 21.2 | 23.4 | 25.6 | 28.0 | 30.5 | 35.8 | 41.5 | 47.7 | 54.2 | 61.2 | 68.6 | 80.5 |
| | 50 | 21.4 | 23.9 | 26.5 | 29.2 | 32.0 | 35.0 | 38.1 | 44.7 | 51.9 | 59.6 | 67.8 | 76.5 | 85.8 | 100.7 |
| | 60 | 25.7 | 28.7 | 31.8 | 35.0 | 38.4 | 42.0 | 45.8 | 53.7 | 62.3 | 71.5 | 81.3 | 91.8 | 102.9 | 120.8 |
| | 70 | 30.0 | 33.5 | 37.1 | 40.9 | 44.9 | 49.0 | 53.4 | 62.6 | 72.7 | 83.4 | 94.9 | 107.1 | 120.1 | 141.0 |
| | 80 | 34.3 | 38.2 | 42.4 | 46.7 | 51.3 | 56.0 | 61.0 | 71.6 | 83.0 | 95.3 | 108.5 | 122.4 | 137.3 | 161.1 |

See footnotes 1-5.

## Footnotes to Table 3.17A

1 Tabulated sheathing lengths assume studs are spaced a maximum of 16 inches o.c. or exterior wood structural panels are applied with the long dimension across the studs, walls are sheathed with 3/8 inch wood structural panels on the exterior attached with 8d common nails at 6 inches o.c. at panel edges and 12 inches o.c. in the field, and 1/2 inch gypsum wallboard on the interior attached with 5d cooler nails at 7 inches o.c. at panel edges and 10 inches o.c. as specified in section 3.4.4.2. For other sheathing materials or sheathing configurations the tabulated lengths shall be multiplied by the appropriate sheathing type adjustment factor in Table 3.17D.

2 Minimum length of full height sheathing shall not be less than the minimum required to satisfy the maximum shear wall segment aspect ratio limitation in Table 3.17D.

3 Total roof span shall not exceed 36 feet based on 3.1.3.4a. Building dimensions up to 80 feet are shown in the second column for use with the inscribed building provisions of 3.1.3.3c.

4 Tabulated sheathing lengths are based on 10 foot walls and 10 foot top plate-to-ridge height. For other configurations, the value may be multiplied by the adjustment factor below:

| | | Roof Only | | Roof + 1 Floor | | Roof + 2 Floors | |
|---|---|---|---|---|---|---|---|
| | **Wall Height** | **8'** | **10'** | **8'** | **10'** | **8'** | **10'** |
| **Roof Pitch** | **Top Plate to Ridge Height (ft)** | **Adjustment Factor** | | | | | |
| **≤6:12** | **0' (flat)** | 0.35 | 0.43 | 0.58 | 0.72 | 0.66 | 0.81 |
| | **5'** | 0.50 | 0.59 | 0.66 | 0.79 | 0.71 | 0.86 |
| | **10'** | 0.65 | 0.74 | 0.74 | 0.87 | 0.76 | 0.91 |
| **>6:12** | **5'** | 0.63 | 0.71 | 0.72 | 0.86 | 0.75 | 0.90 |
| | **10'** | 0.92 | 1.00 | 0.87 | 1.00 | 0.85 | 1.00 |
| | **15'** | 1.21 | 1.29 | 1.01 | 1.14 | 0.95 | 1.10 |
| | **20'** | 1.49 | 1.58 | 1.15 | 1.29 | 1.04 | NP |

NP = not permitted

5 10d box nails or equivalent pneumatic nails with a nail diameter of at least 0.131 inch can be substituted for 8d common nails.

## Table 3.17C1 Segmented Shear Wall Sheathing Requirements for Seismic

# GSL = 30 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=30 psf; Lateral force resisting system: Wood structural panel shear walls)

| Shear Wall Line Beneath | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Full-height sheathing length, ft[2,3,4,5,6] | | | | | | | | | | | | | | |
| Roof & Ceiling | 12 | 0.4 | 0.5 | 0.6 | 0.7 | 0.9 | 0.7 | 0.9 | 1.2 | 1.4 | 1.7 | 1.0 | 1.4 | 1.8 | 2.1 | 2.5 |
| | 16 | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.0 | 1.4 | 1.8 | 2.2 | 2.5 | 1.5 | 2.1 | 2.7 | 3.3 | 3.8 |
| | 20 | 0.7 | 1.0 | 1.3 | 1.6 | 1.8 | 1.4 | 1.9 | 2.5 | 3.0 | 3.6 | 2.1 | 2.9 | 3.8 | 4.6 | 5.4 |
| | 24 | 0.9 | 1.3 | 1.7 | 2.1 | 2.5 | 1.8 | 2.6 | 3.3 | 4.0 | 4.8 | 2.8 | 3.9 | 5.0 | 6.1 | 7.2 |
| | 28 | 1.2 | 1.7 | 2.2 | 2.7 | 3.0 | 2.3 | 3.3 | 4.2 | 5.2 | 5.8 | 3.5 | 5.0 | 6.4 | 7.8 | 8.9 |
| | 32 | 1.5 | 2.1 | 2.7 | 3.3[7] | - | 2.9 | 4.1 | 5.3 | 6.5[7] | - | 4.4 | 6.2 | 8.0 | 9.8[7] | - |
| | 36 | 1.8 | 2.5 | 3.3 | 3.6[7] | - | 3.5 | 4.9 | 6.4 | 7.1[7] | - | 5.3 | 7.5 | 9.7 | 10.7[7] | - |
| Roof, Ceiling, & 1 Floor | 12 | 0.7 | 1.0 | 1.2 | 1.5 | 1.7 | 1.4 | 1.9 | 2.4 | 2.9 | 3.4 | 2.1 | 2.9 | 3.6 | 4.4 | 5.1 |
| | 16 | 1.1 | 1.5 | 1.9 | 2.3 | 2.7 | 2.1 | 2.9 | 3.6 | 4.4 | 5.2 | 3.2 | 4.3 | 5.5 | 6.7 | 7.8 |
| | 20 | 1.5 | 2.1 | 2.6 | 3.2 | 3.7 | 2.9 | 4.0 | 5.1 | 6.2 | 7.3 | 4.4 | 6.1 | 7.7 | 9.4 | 11.0 |
| | 24 | 2.0 | 2.7 | 3.5 | 4.2 | 5.0 | 3.8 | 5.3 | 6.8 | 8.2 | 9.7 | 5.8 | 8.0 | 10.3 | 12.5 | 14.7 |
| | 28 | 2.5 | 3.5 | 4.5 | 5.5 | 6.2 | 4.8 | 6.8 | 8.7 | 10.6 | 12.0 | 7.3 | 10.2 | 13.1 | 16.1 | 18.1 |
| | 32 | 3.1 | 4.3 | 5.6 | 6.8[7] | - | 6.0 | 8.4 | 10.8 | 13.2[7] | - | 9.0 | 12.7 | 16.4 | 20.0[7] | - |
| | 36 | 3.7 | 5.2 | 6.8 | 7.5[7] | - | 7.2 | 10.2 | 13.2 | 14.5[7] | - | 10.9 | 15.4 | 19.9 | 21.9[7] | - |
| Roof, Ceiling & 2 Floors | 12 | 1.1 | 1.5 | 1.9 | 2.2 | 2.6 | 2.1 | 2.9 | 3.6 | 4.3 | 5.1 | 3.2 | 4.4 | 5.5 | 6.6 | 7.7 |
| | 16 | 1.6 | 2.2 | 2.8 | 3.4 | 4.0 | 3.2 | 4.3 | 5.5 | 6.6 | 7.8 | 4.8 | 6.6 | 8.3 | 10.1 | 11.8 |
| | 20 | 2.3 | 3.1 | 4.0 | 4.8 | 5.7 | 4.4 | 6.0 | 7.7 | 9.3 | 11.0 | 6.7 | 9.2 | 11.7 | 14.2 | 16.6 |
| | 24 | 3.0 | 4.1 | 5.3 | 6.4 | 7.6 | 5.8 | 8.0 | 10.2 | 12.5 | 14.7 | 8.8 | 12.1 | 15.5 | 18.9 | 22.3 |
| | 28 | 3.8 | 5.3 | 6.8 | 8.3 | 9.3 | 7.3 | 10.2 | 13.1 | 16.0 | 18.1 | 11.1 | 15.5 | 19.9 | 24.3 | 27.4 |
| | 32 | 4.7 | 6.5 | 8.4 | 10.3[7] | - | 9.1 | 12.7 | 16.3 | 20.0[7] | - | 13.7 | 19.2 | 24.8 | 30.3[7] | - |
| | 36 | 5.6 | 7.9 | 10.2 | 11.3[7] | - | 10.9 | 15.4 | 19.9 | 21.9[7] | - | 16.6 | 23.4 | 30.1 | 33.2[7] | - |

| Shear Wall Line Beneath | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Full-height sheathing length, ft[2,3,4,5,6] | | | | | | | | | | | | | | |
| Roof & Ceiling | 12 | 1.4 | 1.9 | 2.4 | 2.9 | 3.4 | 1.7 | 2.3 | 3.0 | 3.6 | 4.2 | 2.4 | 3.3 | 4.2 | 5.0 | 5.9 |
| | 16 | 2.1 | 2.8 | 3.6 | 4.4 | 5.1 | 2.6 | 3.5 | 4.5 | 5.4 | 6.4 | 3.6 | 5.0 | 6.3 | 7.6 | 9.0 |
| | 20 | 2.9 | 3.9 | 5.0 | 6.1 | 7.2 | 3.5 | 4.9 | 6.2 | 7.6 | 9.0 | 5.0 | 6.9 | 8.8 | 10.7 | 12.6 |
| | 24 | 3.7 | 5.2 | 6.7 | 8.2 | 9.7 | 4.6 | 6.5 | 8.3 | 10.1 | 12.0 | 6.5 | 9.1 | 11.7 | 14.3 | 16.9 |
| | 28 | 4.7 | 6.7 | 8.6 | 10.5 | 11.9 | 5.9 | 8.3 | 10.6 | 13.0 | 14.7 | 8.3 | 11.6 | 15.0 | 18.3 | 20.7 |
| | 32 | 5.9 | 8.3 | 10.7 | 13.1[7] | - | 7.3 | 10.2 | 13.2 | 16.2[7] | - | 10.2 | 14.4 | 18.7 | 22.9[7] | - |
| | 36 | 7.1 | 10.0 | 13.0 | 14.3[7] | - | 8.8 | 12.4 | 16.1 | 17.7[7] | - | 12.4 | 17.5 | 22.7 | 25.0[7] | - |
| Roof, Ceiling, & 1 Floor | 12 | 2.9 | 3.9 | 4.9 | 5.9 | 6.8 | 3.6 | 4.8 | 6.0 | 7.3 | 8.5 | 5.0 | 6.8 | 8.5 | 10.2 | 12.0 |
| | 16 | 4.3 | 5.8 | 7.4 | 8.9 | 10.5 | 5.3 | 7.2 | 9.1 | 11.0 | 13.0 | 7.5 | 10.2 | 12.9 | 15.6 | 18.3 |
| | 20 | 5.9 | 8.1 | 10.3 | 12.6 | 14.8 | 7.3 | 10.1 | 12.8 | 15.5 | 18.3 | 10.3 | 14.2 | 18.0 | 21.9 | 25.8 |
| | 24 | 7.7 | 10.7 | 13.7 | 16.7 | 19.7 | 9.6 | 13.3 | 17.0 | 20.7 | 24.5 | 13.5 | 18.8 | 24.0 | 29.2 | 34.5 |
| | 28 | 9.8 | 13.7 | 17.6 | 21.5 | 24.3 | 12.2 | 17.0 | 21.8 | 26.6 | 30.1 | 17.1 | 23.9 | 30.8 | 37.6 | 42.4 |
| | 32 | 12.1 | 17.0 | 21.9 | 26.8[7] | - | 15.0 | 21.1 | 27.2 | 33.2[7] | - | 21.2 | 29.7 | 38.3 | 46.9[7] | - |
| | 36 | 14.6 | 20.7 | 26.7 | 29.4[7] | - | 18.1 | 25.6 | 33.1 | 36.4[7] | - | 25.6 | 36.1 | 46.6 | 51.3[7] | - |
| Roof, Ceiling & 2 Floors | 12 | 4.4 | 5.8 | 7.3 | 8.8 | 10.3 | 5.4 | 7.2 | 9.1 | 10.9 | 12.8 | 7.6 | 10.2 | 12.8 | 15.4 | 18.0 |
| | 16 | 6.5 | 8.8 | 11.1 | 13.5 | 15.8 | 8.0 | 10.9 | 13.8 | 16.7 | 19.6 | 11.3 | 15.4 | 19.4 | 23.5 | 27.6 |
| | 20 | 8.9 | 12.3 | 15.6 | 19.0 | 22.3 | 11.1 | 15.2 | 19.4 | 23.5 | 27.6 | 15.6 | 21.4 | 27.3 | 33.1 | 39.0 |
| | 24 | 11.7 | 16.3 | 20.8 | 25.3 | 29.8 | 14.5 | 20.1 | 25.8 | 31.4 | 37.0 | 20.5 | 28.4 | 36.3 | 44.2 | 52.1 |
| | 28 | 14.9 | 20.8 | 26.6 | 32.5 | 36.7 | 18.4 | 25.7 | 33.0 | 40.3 | 45.5 | 26.0 | 36.3 | 46.5 | 56.8 | 64.1 |
| | 32 | 18.4 | 25.8 | 33.2 | 40.6[7] | - | 22.8 | 31.9 | 41.1 | 50.3[7] | - | 32.1 | 45.0 | 57.9 | 70.9[7] | - |
| | 36 | 22.2 | 31.3 | 40.4 | 44.4[7] | - | 27.5 | 38.8 | 50.0 | 55.0[7] | - | 38.8 | 54.7 | 70.5 | 77.6[7] | - |

See footnotes 1-7.

## Table 3.17C2 Segmented Shear Wall Sheathing Requirements for Seismic — GSL = 50 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=50 psf; Lateral force resisting system: Wood structural panel shear walls)

| Shear Wall Line Beneath | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Full-height sheathing length, ft[2,3,4,5,6] | | | | | | | | | | | | | | |
| Roof & Ceiling | 12 | 0.5 | 0.6 | 0.8 | 1.0 | 1.1 | 0.9 | 1.2 | 1.6 | 1.9 | 2.2 | 1.4 | 1.9 | 2.4 | 2.9 | 3.4 |
| | 16 | 0.7 | 1.0 | 1.2 | 1.5 | 1.8 | 1.4 | 1.9 | 2.4 | 2.9 | 3.5 | 2.1 | 2.9 | 3.7 | 4.5 | 5.2 |
| | 20 | 1.0 | 1.4 | 1.8 | 2.2 | 2.5 | 1.9 | 2.7 | 3.4 | 4.2 | 4.9 | 2.9 | 4.0 | 5.2 | 6.3 | 7.5 |
| | 24 | 1.3 | 1.8 | 2.4 | 2.9 | 3.4 | 2.5 | 3.6 | 4.6 | 5.6 | 6.7 | 3.9 | 5.4 | 7.0 | 8.5 | 10.1 |
| | 28 | 1.7 | 2.4 | 3.1 | 3.8 | 4.2 | 3.3 | 4.6 | 5.9 | 7.3 | 8.2 | 4.9 | 7.0 | 9.0 | 11.0 | 12.5 |
| | 32 | 2.1 | 3.0 | 3.8 | 4.7[7] | - | 4.0 | 5.7 | 7.4 | 9.2[7] | - | 6.1 | 8.7 | 11.3 | 13.9[7] | - |
| | 36 | 2.5 | 3.6 | 4.7 | 5.2[7] | - | 4.9 | 7.0 | 9.1 | 10.1[7] | - | 7.4 | 10.6 | 13.8 | 15.2[7] | - |
| Roof, Ceiling, & 1 Floor | 12 | 0.8 | 1.1 | 1.4 | 1.7 | 2.0 | 1.6 | 2.2 | 2.8 | 3.4 | 3.9 | 2.5 | 3.4 | 4.2 | 5.1 | 6.0 |
| | 16 | 1.3 | 1.7 | 2.2 | 2.7 | 3.1 | 2.5 | 3.4 | 4.3 | 5.2 | 6.1 | 3.7 | 5.1 | 6.5 | 7.8 | 9.2 |
| | 20 | 1.8 | 2.4 | 3.1 | 3.8 | 4.5 | 3.4 | 4.7 | 6.0 | 7.3 | 8.6 | 5.2 | 7.2 | 9.1 | 11.1 | 13.1 |
| | 24 | 2.3 | 3.2 | 4.2 | 5.1 | 6.0 | 4.5 | 6.3 | 8.1 | 9.8 | 11.6 | 6.8 | 9.5 | 12.2 | 14.9 | 17.6 |
| | 28 | 3.0 | 4.2 | 5.4 | 6.5 | 7.4 | 5.7 | 8.1 | 10.4 | 12.7 | 14.4 | 8.7 | 12.2 | 15.7 | 19.3 | 21.8 |
| | 32 | 3.7 | 5.2 | 6.7 | 8.2[7] | - | 7.1 | 10.1 | 13.0 | 15.9[7] | - | 10.8 | 15.2 | 19.7 | 24.1[7] | - |
| | 36 | 4.5 | 6.3 | 8.2 | 9.0[7] | - | 8.6 | 12.3 | 15.9 | 17.5[7] | - | 13.1 | 18.6 | 24.0 | 26.5[7] | - |
| Roof, Ceiling & 2 Floors | 12 | 1.2 | 1.6 | 2.1 | 2.5 | 2.9 | 2.4 | 3.2 | 4.0 | 4.8 | 5.7 | 3.6 | 4.8 | 6.1 | 7.3 | 8.6 |
| | 16 | 1.8 | 2.5 | 3.2 | 3.8 | 4.5 | 3.5 | 4.8 | 6.1 | 7.4 | 8.7 | 5.4 | 7.3 | 9.3 | 11.2 | 13.2 |
| | 20 | 2.5 | 3.5 | 4.4 | 5.4 | 6.4 | 4.9 | 6.8 | 8.6 | 10.5 | 12.4 | 7.4 | 10.3 | 13.1 | 15.9 | 18.7 |
| | 24 | 3.3 | 4.6 | 5.9 | 7.2 | 8.5 | 6.5 | 9.0 | 11.5 | 14.1 | 16.6 | 9.8 | 13.7 | 17.5 | 21.3 | 25.1 |
| | 28 | 4.2 | 5.9 | 7.6 | 9.3 | 10.6 | 8.2 | 11.5 | 14.8 | 18.1 | 20.5 | 12.5 | 17.5 | 22.5 | 27.5 | 31.0 |
| | 32 | 5.3 | 7.4 | 9.5 | 11.7[7] | - | 10.2 | 14.4 | 18.5 | 22.7[7] | - | 15.5 | 21.8 | 28.1 | 24.4[7] | - |
| | 36 | 6.4 | 9.0 | 11.6 | 12.8[7] | - | 12.4 | 17.5 | 22.6 | 24.9[7] | - | 18.7 | 26.5 | 34.3 | 37.7[7] | - |

| Shear Wall Line Beneath | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Full-height sheathing length, ft[2,3,4,5,6] | | | | | | | | | | | | | | |
| Roof & Ceiling | 12 | 1.9 | 2.5 | 3.2 | 3.9 | 4.5 | 2.3 | 3.1 | 4.0 | 4.8 | 5.6 | 3.3 | 4.4 | 5.6 | 6.7 | 7.9 |
| | 16 | 2.8 | 3.9 | 4.9 | 6.0 | 7.0 | 3.5 | 4.8 | 6.1 | 7.4 | 8.7 | 4.9 | 6.7 | 8.6 | 10.4 | 12.3 |
| | 20 | 3.9 | 5.4 | 7.0 | 8.5 | 10.0 | 4.8 | 6.7 | 8.6 | 10.5 | 12.4 | 6.8 | 9.5 | 12.1 | 14.8 | 17.5 |
| | 24 | 5.2 | 7.3 | 9.3 | 11.4 | 13.5 | 6.4 | 9.0 | 11.6 | 14.2 | 16.7 | 9.0 | 12.7 | 16.3 | 20.0 | 23.6 |
| | 28 | 6.6 | 9.3 | 12.1 | 14.8 | 16.7 | 8.2 | 11.6 | 14.9 | 18.3 | 20.7 | 11.5 | 16.3 | 21.1 | 25.8 | 29.2 |
| | 32 | 8.2 | 11.7 | 15.1 | 18.6[7] | - | 10.2 | 14.4 | 18.7 | 23.0[7] | - | 14.3 | 20.4 | 26.4 | 32.4[7] | - |
| | 36 | 10.0 | 14.2 | 18.5 | 20.4[7] | - | 12.4 | 17.6 | 22.9 | 25.3[7] | - | 17.4 | 24.9 | 32.3 | 35.6[7] | - |
| Roof, Ceiling, & 1 Floor | 12 | 3.3 | 4.5 | 5.7 | 6.8 | 8.0 | 4.1 | 5.6 | 7.0 | 8.5 | 9.9 | 5.8 | 7.9 | 9.9 | 11.9 | 14.0 |
| | 16 | 5.0 | 6.8 | 8.7 | 10.5 | 12.4 | 6.2 | 8.5 | 10.7 | 13.0 | 15.3 | 8.7 | 11.9 | 15.1 | 18.4 | 21.6 |
| | 20 | 6.9 | 9.6 | 12.2 | 14.9 | 17.6 | 8.6 | 11.9 | 15.2 | 18.5 | 21.7 | 12.1 | 16.7 | 21.4 | 26.0 | 30.7 |
| | 24 | 9.2 | 12.8 | 16.4 | 20.0 | 23.6 | 11.4 | 15.8 | 20.3 | 24.8 | 29.2 | 16.0 | 22.3 | 28.6 | 34.9 | 41.2 |
| | 28 | 11.7 | 16.4 | 21.1 | 25.8 | 29.2 | 14.5 | 20.3 | 26.1 | 32.0 | 36.1 | 20.4 | 28.6 | 36.8 | 45.1 | 50.9 |
| | 32 | 14.5 | 20.4 | 26.4 | 32.3[7] | - | 17.9 | 25.3 | 32.7 | 40.0[7] | - | 25.3 | 35.7 | 46.0 | 56.4[7] | - |
| | 36 | 17.5 | 24.9 | 32.2 | 35.5[7] | - | 21.7 | 30.8 | 39.9 | 43.9[7] | - | 30.6 | 43.4 | 56.2 | 61.9[7] | - |
| Roof, Ceiling & 2 Floors | 12 | 4.8 | 6.5 | 8.1 | 9.8 | 11.5 | 6.0 | 8.0 | 10.1 | 12.2 | 14.2 | 8.4 | 11.3 | 14.2 | 17.1 | 20.1 |
| | 16 | 7.2 | 9.8 | 12.4 | 15.1 | 17.7 | 8.9 | 12.2 | 15.4 | 18.7 | 21.9 | 12.6 | 17.1 | 21.7 | 26.3 | 30.9 |
| | 20 | 10.0 | 13.8 | 17.5 | 21.3 | 25.1 | 12.4 | 17.0 | 21.7 | 26.4 | 31.1 | 17.4 | 24.0 | 30.6 | 37.2 | 43.8 |
| | 24 | 13.2 | 18.3 | 23.4 | 28.6 | 33.7 | 16.3 | 22.7 | 29.0 | 35.4 | 41.7 | 23.0 | 31.9 | 40.9 | 49.9 | 58.8 |
| | 28 | 16.7 | 23.4 | 30.1 | 36.8 | 41.6 | 20.7 | 29.0 | 37.3 | 45.6 | 51.5 | 29.2 | 40.9 | 52.6 | 64.3 | 72.6 |
| | 32 | 20.7 | 29.2 | 37.6 | 46.1[7] | - | 25.7 | 36.1 | 46.6 | 57.1[7] | - | 36.2 | 50.9 | 65.7 | 80.4[7] | - |
| | 36 | 25.1 | 35.5 | 45.9 | 50.5[7] | - | 31.1 | 44.0 | 56.9 | 62.6[7] | - | 43.8 | 62.0 | 80.2 | 88.2[7] | - |

See footnotes 1-7.

## Table 3.17C3 Segmented Shear Wall Sheathing Requirements for Seismic

# GSL = 70 psf

(Dead Load Assumptions: Roof/ceiling = 15 psf, Floor = 12 psf, Partition = 8 psf, Wall = 110 plf; ASD Ground Snow Load[1], $p_{g(ASD)}$=70 psf; Lateral force resisting system: Wood structural panel shear walls)

| Shear Wall Line Beneath | Minimum Building Dimension, W (ft) | SDC A | | | | | SDC B | | | | | SDC C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Full-height sheathing length, ft[2,3,4,5,6] | | | | | | | | | | | | | | |
| Roof & Ceiling | 12 | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.0 | 1.4 | 1.7 | 2.1 | 2.5 | 1.5 | 2.1 | 2.6 | 3.2 | 3.7 |
| | 16 | 0.8 | 1.1 | 1.4 | 1.7 | 2.0 | 1.5 | 2.1 | 2.7 | 3.3 | 3.8 | 2.3 | 3.2 | 4.1 | 4.9 | 5.8 |
| | 20 | 1.1 | 1.5 | 2.0 | 2.4 | 2.8 | 2.1 | 3.0 | 3.8 | 4.6 | 5.5 | 3.2 | 4.5 | 5.8 | 7.0 | 8.3 |
| | 24 | 1.5 | 2.0 | 2.6 | 3.2 | 3.8 | 2.8 | 4.0 | 5.1 | 6.3 | 7.4 | 4.3 | 6.0 | 7.8 | 9.5 | 11.2 |
| | 28 | 1.9 | 2.6 | 3.4 | 4.2 | 4.7 | 3.6 | 5.1 | 6.6 | 8.1 | 9.2 | 5.5 | 7.8 | 10.0 | 12.3 | 13.9 |
| | 32 | 2.3 | 3.3 | 4.3 | 5.3[7] | - | 4.5 | 6.4 | 8.3 | 10.2[7] | - | 6.8 | 9.7 | 12.6 | 15.5[7] | - |
| | 36 | 2.8 | 4.0 | 5.3 | 5.8[7] | - | 5.5 | 7.8 | 10.2 | 11.3[7] | - | 8.3 | 11.9 | 15.5 | 17.0[7] | - |
| Roof, Ceiling, & 1 Floor | 12 | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 1.7 | 2.3 | 3.0 | 3.6 | 4.2 | 2.6 | 3.6 | 4.5 | 5.4 | 6.3 |
| | 16 | 1.3 | 1.8 | 2.3 | 2.8 | 3.3 | 2.6 | 3.6 | 4.5 | 5.5 | 6.5 | 3.9 | 5.4 | 6.9 | 8.3 | 9.8 |
| | 20 | 1.9 | 2.6 | 3.3 | 4.0 | 4.7 | 3.6 | 5.0 | 6.4 | 7.8 | 9.2 | 5.5 | 7.6 | 9.7 | 11.8 | 13.9 |
| | 24 | 2.5 | 3.4 | 4.4 | 5.4 | 6.4 | 4.8 | 6.7 | 8.6 | 10.5 | 12.4 | 7.3 | 10.1 | 13.0 | 15.9 | 18.8 |
| | 28 | 3.1 | 4.4 | 5.7 | 7.0 | 7.9 | 6.1 | 8.6 | 11.1 | 13.6 | 15.3 | 9.3 | 13.0 | 16.8 | 20.5 | 23.2 |
| | 32 | 3.9 | 5.5 | 7.1 | 8.8[7] | - | 7.6 | 10.7 | 13.9 | 17.0[7] | - | 11.5 | 16.2 | 21.0 | 25.8[7] | - |
| | 36 | 4.7 | 6.7 | 8.7 | 9.6[7] | - | 9.2 | 13.1 | 16.9 | 18.7[7] | - | 14.0 | 19.8 | 25.7 | 28.3[7] | - |
| Roof, Ceiling & 2 Floors | 12 | 1.3 | 1.7 | 2.2 | 2.6 | 3.0 | 2.5 | 3.3 | 4.2 | 5.0 | 5.9 | 3.7 | 5.0 | 6.3 | 7.6 | 8.9 |
| | 16 | 1.9 | 2.6 | 3.3 | 4.0 | 4.7 | 3.7 | 5.0 | 6.4 | 7.7 | 9.1 | 5.6 | 7.6 | 9.7 | 11.7 | 13.8 |
| | 20 | 2.6 | 3.6 | 4.6 | 5.6 | 6.6 | 5.1 | 7.1 | 9.0 | 11.0 | 12.9 | 7.8 | 10.7 | 13.7 | 16.6 | 19.6 |
| | 24 | 3.5 | 4.8 | 6.2 | 7.6 | 8.9 | 6.8 | 9.4 | 12.1 | 14.7 | 17.4 | 10.2 | 14.3 | 18.3 | 22.3 | 26.3 |
| | 28 | 4.4 | 6.2 | 8.0 | 9.8 | 11.0 | 8.6 | 12.1 | 15.5 | 19.0 | 21.4 | 13.0 | 18.3 | 23.5 | 28.7 | 32.5 |
| | 32 | 5.5 | 7.7 | 10.0 | 12.2[7] | - | 10.7 | 15.0 | 19.4 | 23.8[7] | - | 16.2 | 22.8 | 29.4 | 36.0[7] | - |
| | 36 | 6.7 | 9.4 | 12.2 | 13.4[7] | - | 12.9 | 18.3 | 23.7 | 26.1[7] | - | 19.6 | 27.8 | 35.9 | 39.5[7] | - |

| Shear Wall Line Beneath | Minimum Building Dimension, W (ft) | SDC $D_0$ | | | | | SDC $D_1$ | | | | | SDC $D_2$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L/W | | | | | L/W | | | | | L/W | | | | |
| | | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| | | Full-height sheathing length, ft[2,3,4,5,6] | | | | | | | | | | | | | | |
| Roof & Ceiling | 12 | 2.0 | 2.8 | 3.5 | 4.3 | 5.0 | 2.5 | 3.4 | 4.4 | 5.3 | 6.2 | 3.6 | 4.9 | 6.1 | 7.4 | 8.7 |
| | 16 | 3.1 | 4.3 | 5.4 | 6.6 | 7.8 | 3.8 | 5.3 | 6.7 | 8.2 | 9.6 | 5.4 | 7.4 | 9.5 | 11.5 | 13.6 |
| | 20 | 4.3 | 6.0 | 7.7 | 9.4 | 11.1 | 5.3 | 7.5 | 9.6 | 11.7 | 13.8 | 7.5 | 10.5 | 13.5 | 16.5 | 19.4 |
| | 24 | 5.7 | 8.1 | 10.4 | 12.7 | 15.1 | 7.1 | 10.0 | 12.9 | 15.8 | 18.7 | 10.0 | 14.1 | 18.2 | 22.2 | 26.3 |
| | 28 | 7.3 | 10.4 | 13.5 | 16.5 | 18.7 | 9.1 | 12.9 | 16.7 | 20.5 | 23.2 | 12.8 | 18.2 | 23.5 | 28.8 | 32.6 |
| | 32 | 9.1 | 13.0 | 16.9 | 20.8[7] | - | 11.3 | 16.1 | 20.9 | 25.7[7] | - | 16.0 | 22.7 | 29.5 | 36.3[7] | - |
| | 36 | 11.1 | 15.9 | 20.7 | 22.8[7] | - | 13.8 | 19.7 | 25.7 | 28.3[7] | - | 19.4 | 27.8 | 36.2 | 39.9[7] | - |
| Roof, Ceiling, & 1 Floor | 12 | 3.5 | 4.8 | 6.0 | 7.2 | 8.5 | 4.4 | 5.9 | 7.4 | 9.0 | 10.5 | 6.2 | 8.3 | 10.5 | 12.6 | 14.8 |
| | 16 | 5.3 | 7.2 | 9.2 | 11.2 | 13.1 | 6.5 | 9.0 | 11.4 | 13.8 | 16.2 | 9.2 | 12.6 | 16.1 | 19.5 | 22.9 |
| | 20 | 7.4 | 10.2 | 13.0 | 15.8 | 18.7 | 9.1 | 12.6 | 16.1 | 19.6 | 23.1 | 12.8 | 17.8 | 22.7 | 27.7 | 32.6 |
| | 24 | 9.7 | 13.6 | 17.4 | 21.3 | 25.1 | 12.1 | 16.8 | 21.6 | 26.4 | 31.2 | 17.0 | 23.7 | 30.5 | 37.2 | 43.9 |
| | 28 | 12.4 | 17.4 | 22.5 | 27.5 | 31.1 | 15.4 | 21.6 | 27.9 | 34.1 | 38.5 | 21.7 | 30.5 | 39.3 | 48.0 | 54.3 |
| | 32 | 15.4 | 21.8 | 28.1 | 34.5[7] | - | 19.1 | 27.0 | 34.9 | 42.7[7] | - | 26.9 | 38.0 | 49.1 | 60.3[7] | - |
| | 36 | 18.7 | 26.6 | 34.4 | 37.9[7] | - | 23.2 | 32.9 | 42.6 | 47.0[7] | - | 32.7 | 46.4 | 60.1 | 66.2[7] | - |
| Roof, Ceiling & 2 Floors | 12 | 5.0 | 6.7 | 8.5 | 10.2 | 11.9 | 6.2 | 8.3 | 10.5 | 12.6 | 14.8 | 8.7 | 11.8 | 14.8 | 17.8 | 20.9 |
| | 16 | 7.5 | 10.2 | 13.0 | 15.7 | 18.4 | 9.3 | 12.7 | 16.1 | 19.5 | 22.8 | 13.1 | 17.9 | 22.6 | 27.4 | 32.2 |
| | 20 | 10.4 | 14.3 | 18.3 | 22.3 | 26.2 | 12.9 | 17.8 | 22.7 | 27.6 | 32.5 | 18.2 | 25.1 | 32.0 | 38.9 | 45.8 |
| | 24 | 13.7 | 19.1 | 24.5 | 29.9 | 35.2 | 17.0 | 23.7 | 30.3 | 37.0 | 43.6 | 24.0 | 33.4 | 42.8 | 52.1 | 61.5 |
| | 28 | 17.5 | 24.5 | 31.5 | 38.5 | 43.5 | 21.7 | 30.3 | 39.0 | 47.7 | 53.9 | 30.5 | 42.8 | 55.0 | 67.3 | 76.0 |
| | 32 | 21.7 | 30.5 | 39.4 | 48.2[7] | - | 26.8 | 37.8 | 48.8 | 59.8[7] | - | 37.8 | 53.3 | 68.8 | 84.2[7] | - |
| | 36 | 26.3 | 37.2 | 48.1 | 53.0[7] | - | 32.5 | 46.1 | 59.6 | 65.6[7] | - | 45.9 | 64.9 | 84.0 | 92.5[7] | - |

See footnotes 1-7.

## Footnotes to Table 3.17C

[1] Tabulated full-height sheathing lengths are calculated using ASD ground snow loads, $p_{g(ASD)}$ in ASCE 7-22. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 grounds snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

[2] The tabulated full-height sheathing length is applicable for each wall of a rectangular building.

[3] Tabulated full-height sheathing lengths can be multiplied by 0.83 for one-story above grade plane buildings and 0.92 for two story above grade plane buildings.

[4] Tabulated full-height sheathing lengths assume walls are sheathed as specified in Section 3.4.4.2. For other sheathing materials the tabulated full-height sheathing length shall be multiplied by the appropriate sheathing type adjustment factor in Table 3.17D. The minimum length of full-height sheathing shall not be less than the minimum required to satisfy the maximum shear wall segment aspect ratio limitation in Table 3.17D.

[5] Full-height sheathing lengths can be determined for other dead load cases by multiplying by the full-height sheathing length adjustment factor given in the following table:

| Shear Wall Line Beneath | Minimum Building Dimension, W (ft.) | Roof/Ceiling Assembly = 15 psf | | | | Roof/Ceiling Assembly = 25 psf | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf | Floor = 12 psf Partition = 8 psf Wall = 180 plf | Floor = 20 psf Partition = 8 psf Wall = 180 plf | Floor = 12 psf Partition = 8 psf Wall = 110 plf | Floor = 20 psf Partition = 8 psf Wall = 110 plf |
| | | Full-height sheathing length adjustment factors | | | | | | | |
| Roof & Ceiling | 12 | 1.27 | 1.27 | 1.00 | 1.00 | 1.60 | 1.60 | 1.34 | 1.34 |
| | 16 | 1.25 | 1.25 | 1.00 | 1.00 | 1.60 | 1.60 | 1.37 | 1.37 |
| | 20 | 1.22 | 1.22 | 1.00 | 1.00 | 1.59 | 1.59 | 1.38 | 1.38 |
| | 24 | 1.20 | 1.20 | 1.00 | 1.00 | 1.58 | 1.58 | 1.40 | 1.40 |
| | 28 | 1.19 | 1.19 | 1.00 | 1.00 | 1.58 | 1.58 | 1.41 | 1.41 |
| | 32 | 1.17 | 1.17 | 1.00 | 1.00 | 1.57 | 1.57 | 1.42 | 1.42 |
| | 36 | 1.16 | 1.16 | 1.00 | 1.00 | 1.57 | 1.57 | 1.42 | 1.42 |
| Roof, Ceiling, & 1 Floor | 12 | 1.34 | 1.42 | 1.00 | 1.09 | 1.51 | 1.58 | 1.17 | 1.26 |
| | 16 | 1.31 | 1.40 | 1.00 | 1.11 | 1.48 | 1.57 | 1.18 | 1.29 |
| | 20 | 1.28 | 1.38 | 1.00 | 1.12 | 1.46 | 1.56 | 1.19 | 1.31 |
| | 24 | 1.26 | 1.36 | 1.00 | 1.13 | 1.44 | 1.55 | 1.20 | 1.32 |
| | 28 | 1.24 | 1.35 | 1.00 | 1.13 | 1.42 | 1.54 | 1.20 | 1.33 |
| | 32 | 1.22 | 1.34 | 1.00 | 1.14 | 1.41 | 1.53 | 1.20 | 1.34 |
| | 36 | 1.20 | 1.33 | 1.00 | 1.14 | 1.40 | 1.53 | 1.21 | 1.35 |
| Roof, Ceiling, & 2 Floors | 12 | 1.37 | 1.46 | 1.00 | 1.12 | 1.47 | 1.57 | 1.11 | 1.23 |
| | 16 | 1.33 | 1.44 | 1.00 | 1.14 | 1.44 | 1.56 | 1.12 | 1.26 |
| | 20 | 1.30 | 1.43 | 1.00 | 1.16 | 1.41 | 1.54 | 1.12 | 1.28 |
| | 24 | 1.27 | 1.41 | 1.00 | 1.17 | 1.39 | 1.54 | 1.13 | 1.30 |
| | 28 | 1.25 | 1.40 | 1.00 | 1.18 | 1.37 | 1.53 | 1.13 | 1.31 |
| | 32 | 1.23 | 1.39 | 1.00 | 1.18 | 1.36 | 1.52 | 1.14 | 1.32 |
| | 36 | 1.22 | 1.38 | 1.00 | 1.19 | 1.35 | 1.52 | 1.14 | 1.32 |

[6] Effective seismic weight used to determine tabulated full-height sheathing lengths include 20% of ASD ground snow load, $p_{g(ASD)}$, where the ASD ground snow load, $p_{g(ASD)}$, exceeds 30 psf. $S_{DS}$ used for SDC A, B, C, $D_0$, $D_1$ and $D_2$ are as follows: $S_{DS}$=0.17 for SDC A; $S_{DS}$=0.33 for SDC B; $S_{DS}$=0.50 for SDC C; $S_{DS}$=0.67 for SDC D0; $S_{DS}$=0.83 for SDC D1; $S_{DS}$=1.17 for SDC D2.

[7] Tabulated full-height sheathing lengths are based on building length, L, equal to 80 ft.

## Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments

| Exterior Wall Sheathing / Interior Wall Sheathing | Nails and Spacing Requirements[5] | ASD Unit Shear Capacity of Wall Assembly (plf) | | Maximum Shear Wall Segment Aspect Ratio | | Sheathing Type Adjustment Factor | |
|---|---|---|---|---|---|---|---|
| | | Wind | Seismic | Wind | Seismic | Wind | Seismic |
| **No Sheathing or Non-Rated Sheathing** | | | | | | | |
| 1/2" Gypsum Wallboard (Unblocked)[2], maximum stud spacing 16" on center | 5d cooler nails - 7" edge spacing | 100 | 71[1] | 1.5:1 | 1.5:1 | 4.36 | 10.94 |
| 1/2" Gypsum Wallboard (Unblocked)[2], maximum stud spacing 24" on center | 5d cooler nails - 7" edge spacing | 75 | 53[1] | 1.5:1 | 1.5:1 | 5.81 | 14.66 |
| **1/2" Structural Fiberboard Sheathing (Blocked), maximum stud spacing 16" on center** | 11 ga. galv. roofing nails - 3" edge spacing | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 297 | 212[3] | 1:1[4] | 1:1[4] | 1.47 | 3.66 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 397 | 212[3] | 1:1[4] | 1:1[4] | 1.10 | 3.66 |
| **25/32" Structural Fiberboard Sheathing (Blocked), maximum stud spacing 16" on center** | 11 ga. galv. roofing nails - 3" edge spacing | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 297 | 212[3] | 1:1[4] | 1:1[4] | 1.47 | 3.66 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 397 | 212[3] | 1:1[4] | 1:1[4] | 1.10 | 3.66 |
| **7/16" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | 8d common nails - 6" edge spacing | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 308 | 221 | 2:1[4] | 2:1[4] | 1.42 | 1.08 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 383 | 221 | 2:1[4] | 2:1[4] | 1.14 | 1.08 |
| 7/16" Wood Structural Panels (Blocked) | 8d common nails - 6" edge spacing | 616 | 442 | 2:1[4] | 2:1[4] | 0.71 | 0.54 |
| **7/16" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | 8d common nails - 6" edge spacing | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 329 | 235 | 2:1[4] | 2:1[4] | 1.33 | 1.02 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 404 | 235 | 2:1[4] | 2:1[4] | 1.08 | 1.02 |
| 7/16" STRUCTURAL I Wood Structural Panels (Blocked) | 8d common nails - 6" edge spacing | 658 | 470 | 2:1[4] | 2:1[4] | 0.66 | 0.51 |
| **15/32" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | 8d common nails - 6" edge spacing | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 336 | 239 | 2:1[4] | 2:1[4] | 1.30 | 1.00 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 411 | 239 | 2:1[4] | 2:1[4] | 1.06 | 1.00 |
| 15/32" Wood Structural Panels (Blocked) | 8d common nails - 6" edge spacing | 672 | 478 | 2:1[4] | 2:1[4] | 0.65 | 0.50 |

See footnotes 1-5.

## Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments (Cont.)

| Exterior Wall Sheathing / Interior Wall Sheathing | Nails and Spacing Requirements[5] | ASD Unit Shear Capacity of Wall Assembly (plf) | | Maximum Shear Wall Segment Aspect Ratio | | Sheathing Type Adjustment Factor | |
|---|---|---|---|---|---|---|---|
| | | Wind | Seismic | Wind | Seismic | Wind | Seismic |
| **15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 361 | 258 | 2:1[4] | 2:1[4] | 1.21 | 0.93 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 436 | 258 | 2:1[4] | 2:1[4] | 1.00 | 0.93 |
| 15/32" STRUCTURAL I Wood Structural Panels (Blocked) | 8d common nails - 6" edge spacing | 722 | 516 | 2:1[4] | 2:1[4] | 0.60 | 0.46 |
| **3/8", 7/16", and 15/32" Wood Structural Panels (Blocked), maximum stud spacing 16" on center** | **8d common nails - 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 336 | 239 | 2:1[4] | 2:1[4] | 1.30 | 1.00 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 436 | 239 | 2:1[4] | 2:1[4] | 1.00 | 1.00 |
| 3/8", 7/16", and 15/32" Wood Structural Panels (Blocked) | 8d common nails - 6" edge spacing | 672 | 478 | 2:1[4] | 2:1[4] | 0.65 | 0.50 |
| **3/8", 7/16", and 15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 16" on center** | **8d common nails - 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 361 | 258 | 2:1[4] | 2:1[4] | 1.21 | 0.93 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 461 | 258 | 2:1[4] | 2:1[4] | 0.95 | 0.93 |
| 3/8", 7/16", and 15/32" STRUCTURAL I Wood Structural Panels (Blocked) | 8d common nails - 6" edge spacing | 722 | 516 | 2:1[4] | 2:1[4] | 0.60 | 0.46 |
| **15/32" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **10d common nails - 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 400 | 285 | 2:1[4] | 2:1[4] | 1.09 | 0.84 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 475 | 285 | 2:1[4] | 2:1[4] | 0.92 | 0.84 |
| 15/32" or Thicker Wood Structural Panels (Blocked) | 10d common nails- 6" edge spacing | 800 | 570 | 2:1[4] | 2:1[4] | 0.55 | 0.42 |
| **15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **10d common nails - 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 437 | 312 | 2:1[4] | 2:1[4] | 1.00 | 0.77 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 512 | 312 | 2:1[4] | 2:1[4] | 0.85 | 0.77 |
| 15/32" or Thicker STRUCTURAL I Wood Structural Panels (Blocked) | 10d common nails- 6" edge spacing | 874 | 624 | 2:1[4] | 2:1[4] | 0.50 | 0.38 |

See footnotes 1-5.

## Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments (Cont.)

| Exterior Wall Sheathing / Interior Wall Sheathing | Nails and Spacing Requirements[5] | ASD Unit Shear Capacity of Wall Assembly (plf) | | Maximum Shear Wall Segment Aspect Ratio | | Sheathing Type Adjustment Factor | |
|---|---|---|---|---|---|---|---|
| | | Wind | Seismic | Wind | Seismic | Wind | Seismic |
| **7/16" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 4" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 451 | 322 | 2:1[4] | 2:1[4] | 0.97 | 0.74 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 526 | 322 | 2:1[4] | 2:1[4] | 0.83 | 0.74 |
| 7/16" Wood Structural Panels (Blocked) | 8d common nails - 4" edge spacing | 902 | 644 | 2:1[4] | 2:1[4] | 0.48 | 0.37 |
| **7/16" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 4" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 508 | 363 | 2:1[4] | 2:1[4] | 0.86 | 0.66 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 583 | 363 | 2:1[4] | 2:1[4] | 0.75 | 0.66 |
| 7/16" STRUCTURAL I Wood Structural Panels (Blocked) | 8d common nails - 4" edge spacing | 1017 | 726 | 2:1[4] | 2:1[4] | 0.43 | 0.33 |
| **15/32" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 4" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 490 | 350 | 2:1[4] | 2:1[4] | 0.89 | 0.68 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 565 | 350 | 2:1[4] | 2:1[4] | 0.77 | 0.68 |
| 7/16" Wood Structural Panels (Blocked) | 8d common nails - 4" edge spacing | 980 | 700 | 2:1[4] | 2:1[4] | 0.44 | 0.34 |
| **15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 4" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 554 | 396 | 2:1[4] | 2:1[4] | 0.79 | 0.60 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 629 | 396 | 2:1[4] | 2:1[4] | 0.69 | 0.60 |
| 7/16" STRUCTURAL I Wood Structural Panels (Blocked) | 8d common nails - 4" edge spacing | 1109 | 792 | 2:1[4] | 2:1[4] | 0.39 | 0.30 |
| **3/8", 7/16", and 15/32" Wood Structural Panels (Blocked), maximum stud spacing 16" on center** | **8d common nails - 4" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 490 | 350 | 2:1[4] | 2:1[4] | 0.89 | 0.68 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 590 | 350 | 2:1[4] | 2:1[4] | 0.74 | 0.68 |
| 3/8", 7/16", and 15/32" Wood Structural Panels (Blocked) | 8d common nails - 4" edge spacing | 980 | 700 | 2:1[4] | 2:1[4] | 0.44 | 0.34 |

See footnotes 1-5.

## Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments (Cont.)

| Exterior Wall Sheathing / Interior Wall Sheathing | Nails and Spacing Requirements[5] | ASD Unit Shear Capacity of Wall Assembly (plf) | | Maximum Shear Wall Segment Aspect Ratio | | Sheathing Type Adjustment Factor | |
|---|---|---|---|---|---|---|---|
| | | Wind | Seismic | Wind | Seismic | Wind | Seismic |
| **3/8", 7/16", and 15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 16" on center** | **8d common nails - 4" edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 554 | 396 | 2:1[4] | 2:1[4] | 0.79 | 0.60 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 654 | 396 | 2:1[4] | 2:1[4] | 0.67 | 0.60 |
| **3/8", 7/16", and 15/32" STRUCTURAL I Wood Structural Panels (Blocked)** | **8d common nails - 4" edge spacing** | 1109 | 792 | 2:1[4] | 2:1[4] | 0.39 | 0.30 |
| **15/32" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **10d common nails - 4" Edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 593 | 423 | 2:1[4] | 2:1[4] | 0.74 | 0.57 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 668 | 423 | 2:1[4] | 2:1[4] | 0.65 | 0.57 |
| **15/32" Wood Structural Panels (Blocked)** | **10d common nails- 4" edge spacing** | 1186 | 846 | 2:1[4] | 2:1[4] | 0.37 | 0.28 |
| **15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **10d common nails - 4" Edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 658 | 470 | 2:1[4] | 2:1[4] | 0.66 | 0.51 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 733 | 470 | 2:1[4] | 2:1[4] | 0.59 | 0.51 |
| **15/32" STRUCTURAL I Wood Structural Panels (Blocked)** | **10d common nails- 4" edge spacing** | 1316 | 940 | 2:1[4] | 2:1[4] | 0.33 | 0.25 |
| **7/16" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 3" Edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 580 | 414 | 2:1[4] | 2:1[4] | 0.75 | 0.58 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 655 | 414 | 2:1[4] | 2:1[4] | 0.67 | 0.58 |
| **7/16" or Thicker Wood Structural Panels (Blocked)** | **8d common nails - 3" Edge spacing** | 1160 | 828 | 2:1[4] | 2:1[4] | 0.38 | 0.29 |

See footnotes 1-5.

## Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments (Cont.)

| Exterior Wall Sheathing / Interior Wall Sheathing | Nails and Spacing Requirements[5] | ASD Unit Shear Capacity of Wall Assembly (plf) | | Maximum Shear Wall Segment Aspect Ratio | | Sheathing Type Adjustment Factor | |
|---|---|---|---|---|---|---|---|
| | | Wind | Seismic | Wind | Seismic | Wind | Seismic |
| **7/16" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 3" Edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 651 | 465 | 2:1[4] | 2:1[4] | 0.67 | 0.51 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 726 | 465 | 2:1[4] | 2:1[4] | 0.60 | 0.51 |
| **7/16" or Thicker STRUCTURAL I Wood Structural Panels (Blocked)** | **8d common nails - 3" Edge spacing** | 1302 | 930 | 2:1[4] | 2:1[4] | 0.33 | 0.26 |
| **15/32" Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 3" Edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 630 | 451 | 2:1[4] | 2:1[4] | 0.69 | 0.53 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 705 | 451 | 2:1[4] | 2:1[4] | 0.62 | 0.53 |
| **7/16" or Thicker Wood Structural Panels (Blocked)** | **8d common nails - 3" Edge spacing** | 1260 | 902 | 2:1[4] | 2:1[4] | 0.35 | 0.26 |
| **15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 24" on center** | **8d common nails - 3" Edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 708 | 506 | 2:1[4] | 2:1[4] | 0.62 | 0.47 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 783 | 506 | 2:1[4] | 2:1[4] | 0.56 | 0.47 |
| **7/16" or Thicker STRUCTURAL I Wood Structural Panels (Blocked)** | **8d common nails - 3" Edge spacing** | 1417 | 1012 | 2:1[4] | 2:1[4] | 0.31 | 0.24 |
| **3/8", 7/16", and 15/32" Wood Structural Panels (Blocked), maximum stud spacing 16" on center** | **8d common nails - 3" edge spacing** | | | | | | |
| **No Sheathing or Non-Rated Sheathing** | | 630 | 451 | 2:1[4] | 2:1[4] | 0.69 | 0.53 |
| **1/2" Gypsum Wallboard (Unblocked)[2]** | **5d cooler nails - 7" edge spacing** | 730 | 451 | 2:1[4] | 2:1[4] | 0.60 | 0.53 |
| **3/8", 7/16", and 15/32" Wood Structural Panels (Blocked)** | **8d common nails - 3" edge spacing** | 1260 | 902 | 2:1[4] | 2:1[4] | 0.35 | 0.26 |

See footnotes 1-5.

## Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments (Cont.)

| Exterior Wall Sheathing / Interior Wall Sheathing | Nails and Spacing Requirements[5] | ASD Unit Shear Capacity of Wall Assembly (plf) | | Maximum Shear Wall Segment Aspect Ratio | | Sheathing Type Adjustment Factor | |
|---|---|---|---|---|---|---|---|
| | | Wind | Seismic | Wind | Seismic | Wind | Seismic |
| **3/8", 7/16", and 15/32" STRUCTURAL I Wood Structural Panels (Blocked), maximum stud spacing 16" on center** | **8d common nails - 3" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 708 | 506 | 2:1[4] | 2:1[4] | 0.62 | 0.47 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 808 | 506 | 2:1[4] | 2:1[4] | 0.54 | 0.47 |
| 3/8", 7/16", and 15/32" STRUCTURAL I Wood Structural Panels (Blocked) | 8d common nails - 3" edge spacing | 1417 | 1012 | 2:1[4] | 2:1[4] | 0.31 | 0.24 |
| **3/8" Wood Structural Panels (Unblocked), maximum stud spacing 16" on center** | **8d common nails - 6" Edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 170 | 121 | 2:1 | 2:1 | 2.56 | 1.98 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 270 | 121 | 2:1 | 2:1 | 1.61 | 1.98 |
| 3/8" Wood Structural Panels (Unblocked) | 8d common nails - 6" Edge spacing | 340 | 242 | 2:1 | 2:1 | 1.28 | 0.99 |
| **3/8" STRUCTURAL I Wood Structural Panels (Unblocked), maximum stud spacing 16" on center** | **8d common nails - 6" Edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 178 | 127 | 2:1 | 2:1 | 2.45 | 1.88 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 278 | 127 | 2:1 | 2:1 | 1.57 | 1.88 |
| 3/8" STRUCTURAL I Wood Structural Panels (Unblocked) | 8d common nails - 6" Edge spacing | 356 | 254 | 2:1 | 2:1 | 1.22 | 0.94 |
| **7/16" Wood Structural Panels (Unblocked), maximum stud spacing 16" on center** | **8d common nails - 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 185 | 132 | 2:1 | 2:1 | 2.36 | 1.81 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 285 | 132 | 2:1 | 2:1 | 1.53 | 1.81 |
| 7/16" Wood Structural Panels (Unblocked) | 8d common nails - 6" edge spacing | 370 | 264 | 2:1 | 2:1 | 1.18 | 0.91 |

See footnotes 1-5.

## Table 3.17D Shear Wall Assembly Allowable Unit Shear Capacities, Maximum Shear Wall Segment Aspect Ratios, and Sheathing Type Adjustments (Cont.)

| Exterior Wall Sheathing / Interior Wall Sheathing | Nails and Spacing Requirements[5] | ASD Unit Shear Capacity of Wall Assembly (plf) | | Maximum Shear Wall Segment Aspect Ratio | | Sheathing Type Adjustment Factor | |
|---|---|---|---|---|---|---|---|
| | | Wind | Seismic | Wind | Seismic | Wind | Seismic |
| **7/16" STRUCTURAL I Wood Structural Panels (Unblocked), maximum stud spacing 16" on center** | **8d common nails - 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 197 | 141 | 2:1 | 2:1 | 2.21 | 1.70 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 297 | 141 | 2:1 | 2:1 | 1.47 | 1.70 |
| 7/16" STRUCTURAL I Wood Structural Panels (Unblocked) | 8d common nails - 6" edge spacing | 395 | 282 | 2:1 | 2:1 | 1.10 | 0.85 |
| **15/32" Wood Structural Panels (Unblocked), maximum stud spacing 16" on center** | **10d common nails- 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 240 | 171 | 2:1 | 2:1 | 1.82 | 1.40 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 340 | 171 | 2:1 | 2:1 | 1.28 | 1.40 |
| 15/32" Wood Structural Panels (Unblocked) | 10d common nails- 6" edge spacing | 480 | 342 | 2:1 | 2:1 | 0.91 | 0.70 |
| **15/32" STRUCTURAL I Wood Structural Panels (Unblocked), maximum stud spacing 16" on center** | **10d common nails- 6" edge spacing** | | | | | | |
| No Sheathing or Non-Rated Sheathing | | 262 | 187 | 2:1 | 2:1 | 1.66 | 1.28 |
| 1/2" Gypsum Wallboard (Unblocked)[2] | 5d cooler nails - 7" edge spacing | 362 | 187 | 2:1 | 2:1 | 1.20 | 1.28 |
| 15/32" STRUCTURAL I Wood Structural Panels (Unblocked) | 10d common nails- 6" edge spacing | 524 | 375 | 2:1 | 2:1 | 0.83 | 0.64 |

[1] Shear capacities shown are for short term loading due to wind or seismic loading in Seismic Design Categories A, B, C, $D_0$, $D_1$, and $D_2$ .

[2] Gypsum wallboard walls having aspect ratios exceeding 1.5:1 shall be blocked. Where shear walls are gypsum wallboard only, the maximum aspect ratio shall not exceed 2:1 in accordance with *AWC/ANSI Special Design Provisions for Wind and Seismic (SDPWS)* Table 4.3.3.

[3] Shear capacities shown are for short term loading due to wind or seismic loading in Seismic Design Categories A, B, or C. Values shall not be permitted in Seismic Design Category $D_0$, $D_1$ or $D_2$.

[4] The aspect ratio is permitted to be increased to a maximum value of 3.5:1 provided the unit shear capacity and sheathing type adjustment factor are adjusted in accordance with SDPWS Section 4.3.5.5.1 Exception 1 for wood structural panel shear walls or Exception 2 for structural fiberboard shear walls.

[5] For unblocked shear walls, nail spacing at intermediate supports in the panel field shall be 12” o.c. or less, using the specified nail.

## Table 3.17E Perforated Shear Wall Full Height Sheathing Adjustments

| | Total Area of All Openings as a Percentage of Total Perforated Shear Wall Area | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0% | 2% | 4% | 6% | 8% | 10% | 13% | 15% | 18% | 21% | 25% | 29% | 33% | 38% | 44% | 50% | 57% | 65% | 75% |
| **Total Length of Required Individual Full-Height Wall Segments (from Tables 3.17A, or 3.17C) as a Percentage of Total Perforated Shear Wall Length** | **Perforated Shear Wall Length Adjustment Factor[1,2,3]** | | | | | | | | | | | | | | | | | | |
| 10% | 1.00 | | | | | | | | | | | | 1.10 | 1.27 | 1.47 | 1.67 | 1.90 | 2.17 | 2.50 |
| 15% | 1.00 | | | | | | | | | | | 1.02 | 1.16 | 1.34 | 1.55 | 1.76 | 2.01 | 2.29 | - |
| 20% | 1.00 | | | | | | | | | | | 1.09 | 1.24 | 1.43 | 1.65 | 1.88 | 2.14 | - | - |
| 25% | 1.00 | | | | | | | | | | | 1.16 | 1.32 | 1.52 | 1.76 | 2.00 | - | - | - |
| 30% | 1.00 | | | | | | | | | | 1.07 | 1.24 | 1.41 | 1.63 | 1.89 | - | - | - | - |
| 35% | 1.00 | | | | | | | | | | 1.15 | 1.34 | 1.52 | 1.75 | - | - | - | - | - |
| 40% | 1.00 | | | | | | | | | 1.05 | 1.25 | 1.45 | 1.65 | - | - | - | - | - | - |
| 45% | 1.00 | | | | | | | | | 1.15 | 1.36 | 1.58 | - | - | - | - | - | - | - |
| 50% | 1.00 | | | | | | | | 1.08 | 1.26 | 1.50 | - | - | - | - | - | - | - | - |
| 55% | 1.00 | | | | | | | | 1.20 | 1.40 | - | - | - | - | - | - | - | - | - |
| 60% | 1.00 | | | | | | | 1.13 | 1.36 | - | - | - | - | - | - | - | - | - | - |
| 65% | 1.00 | | | | | | 1.11 | 1.29 | - | - | - | - | - | - | - | - | - | - | - |
| 70% | 1.00 | | | | | | 1.30 | - | - | - | - | - | - | - | - | - | - | - | - |
| 75% | 1.00 | | | | | 1.20 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 80% | 1.00 | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 85% | 1.00 | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 90% | 1.00 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 95% | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 100% | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

1 Full-height sheathing requirements in Tables 3.17A, or 3.17C shall be multiplied by the tabulated Perforated Shear Wall length increase factors to determine the required sheathing lengths for Perforated Shear Walls.

2 Shear Walls shall be blocked.

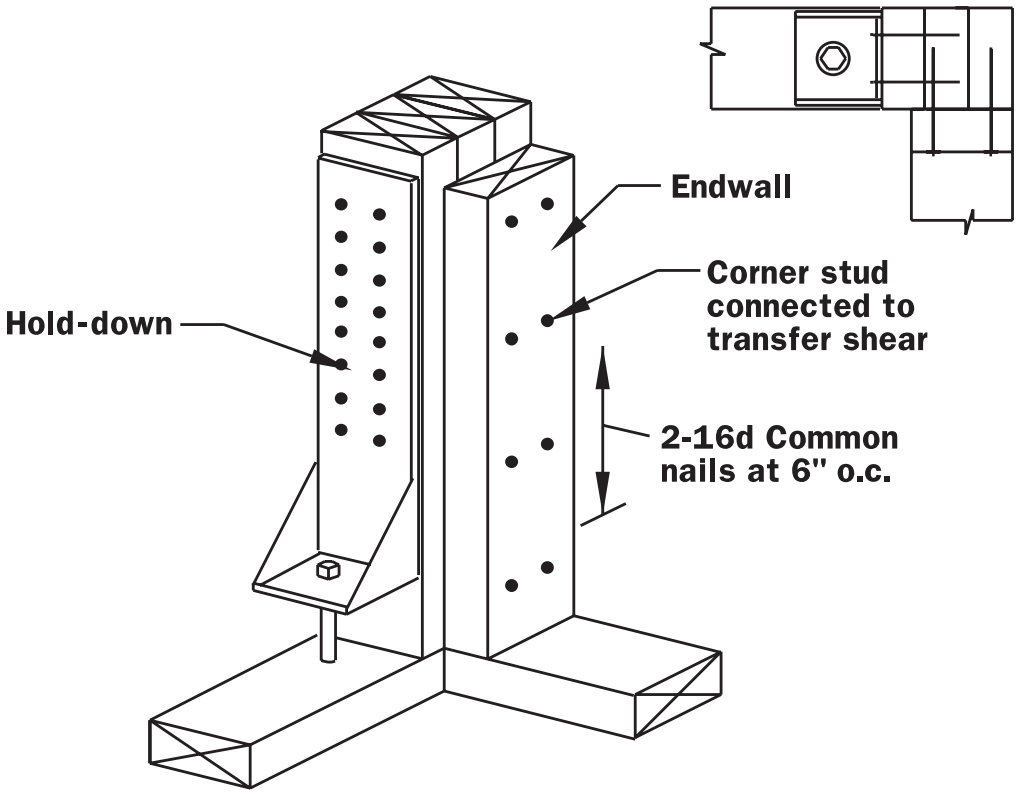
3 Interpolation of tabulated values is permitted.

## Table 3.17F Segmented and Perforated Shear Wall Hold-down Capacity Requirements

| | Required Hold-down Connection Capacity (lbs)[1,2] | |
|---|---|---|
| Wall Height (ft) | Wind | Seismic |
| **8** | 3488 | 1912 |
| **9** | 3924 | 2151 |
| **10** | 4360 | 2390 |
| **12** | 5232 | 2868 |
| **14** | 6104 | 3346 |
| **16** | 6976 | 3824 |
| **18** | 7848 | 4302 |
| **20** | 8720 | 4780 |

1 Required hold-down capacities assume walls are sheathed in accordance with Section 3.4.4.2. For other wall sheathing types the tabulated hold-down capacity shall be divided by the appropriate sheathing type adjustment factor in Table 3.17D.

2 Hold-down capacities are tabulated per story. Required hold-down capacities shall be summed from the story above to the story below.



## Table 3.18A Floor Joist Spans for Common Lumber Species

(Residential Sleeping Areas) Live Load = 30 psf, $L/\Delta_{LL} = 360$

**LL = 30 psf**
**$L/\Delta_{LL} = 360$**

| | | | Dead Load = 10 psf | | | | Dead Load = 20 psf | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x6 | 2x8 | 2x10 | 2x12 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans[1] | | | | | | | |
| Joist Spacing | Species and Grade | | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 in. | Douglas Fir-Larch | SS | 12 - 6 | 16 - 6 | 21 - 0 | 25 - 7 | 12 - 6 | 16 - 6 | 21 - 0 | 25 - 7 |
| | Douglas Fir-Larch | No.1 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 8 | 12 - 0 | 15 - 7 | 19 - 0 | 22 - 0 |
| | Douglas Fir-Larch | No.2 | 11 - 10 | 15 - 7 | 19 - 10 | 23 - 4 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | Douglas Fir-Larch | No.3 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | Hem-Fir | SS | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 |
| | Hem-Fir | No.1 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 11 - 7 | 15 - 3 | 18 - 9 | 21 - 9 |
| | Hem-Fir | No.2 | 11 - 0 | 14 - 6 | 18 - 6 | 22 - 6 | 11 - 0 | 14 - 4 | 17 - 6 | 20 - 4 |
| | Hem-Fir | No.3 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Southern Pine | SS | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 |
| | Southern Pine | No.1 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 | 11 - 10 | 15 - 7 | 18 - 7 | 22 - 0 |
| | Southern Pine | No.2 | 11 - 3 | 14 - 11 | 18 - 1 | 21 - 4 | 10 - 9 | 13 - 8 | 16 - 2 | 19 - 1 |
| | Southern Pine | No.3 | 9 - 2 | 11 - 6 | 13 - 11 | 16 - 6 | 8 - 2 | 10 - 3 | 12 - 6 | 14 - 9 |
| | Spruce-Pine Fir | SS | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 |
| | Spruce-Pine Fir | No.1 | 11 - 3 | 14 - 11 | 19 - 0 | 23 - 0 | 11 - 3 | 14 - 7 | 17 - 9 | 20 - 7 |
| | Spruce-Pine Fir | No.2 | 11 - 3 | 14 - 11 | 19 - 0 | 23 - 0 | 11 - 3 | 14 - 7 | 17 - 9 | 20 - 7 |
| | Spruce-Pine Fir | No.3 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| 16 in. | Douglas Fir-Larch | SS | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 |
| | Douglas Fir-Larch | No.1 | 10 - 11 | 14 - 5 | 18 - 5 | 21 - 4 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | Douglas Fir-Larch | No.2 | 10 - 9 | 14 - 2 | 17 - 5 | 20 - 3 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 |
| | Douglas Fir-Larch | No.3 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 5 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 |
| | Hem-Fir | SS | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 |
| | Hem-Fir | No.1 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 1 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | Hem-Fir | No.2 | 10 - 0 | 13 - 2 | 16 - 10 | 19 - 8 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | Hem-Fir | No.3 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | Southern Pine | SS | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 |
| | Southern Pine | No.1 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 4 | 10 - 9 | 13 - 9 | 16 - 1 | 19 - 1 |
| | Southern Pine | No.2 | 10 - 3 | 13 - 3 | 15 - 8 | 18 - 6 | 9 - 4 | 11 - 10 | 14 - 0 | 16 - 6 |
| | Southern Pine | No.3 | 7 - 11 | 10 - 0 | 12 - 1 | 14 - 4 | 7 - 1 | 8 - 11 | 10 - 10 | 12 - 10 |
| | Spruce-Pine Fir | SS | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 4 |
| | Spruce-Pine Fir | No.1 | 10 - 3 | 13 - 6 | 17 - 2 | 19 - 11 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | Spruce-Pine Fir | No.2 | 10 - 3 | 13 - 6 | 17 - 2 | 19 - 11 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | Spruce-Pine Fir | No.3 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| 19.2 in. | Douglas Fir-Larch | SS | 10 - 8 | 14 - 1 | 18 - 0 | 21 - 10 | 10 - 8 | 14 - 1 | 18 - 0 | 21 - 4 |
| | Douglas Fir-Larch | No.1 | 10 - 4 | 13 - 7 | 16 - 9 | 19 - 6 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Douglas Fir-Larch | No.2 | 10 - 1 | 13 - 0 | 15 - 11 | 18 - 6 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | Douglas Fir-Larch | No.3 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 |
| | Hem-Fir | SS | 10 - 1 | 13 - 4 | 17 - 0 | 20 - 8 | 10 - 1 | 13 - 4 | 17 - 0 | 20 - 7 |
| | Hem-Fir | No.1 | 9 - 10 | 13 - 0 | 16 - 7 | 19 - 3 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 2 |
| | Hem-Fir | No.2 | 9 - 5 | 12 - 5 | 15 - 6 | 17 - 11 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | Hem-Fir | No.3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Southern Pine | SS | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | Southern Pine | No.1 | 10 - 1 | 13 - 4 | 16 - 5 | 19 - 6 | 9 - 11 | 12 - 7 | 14 - 8 | 17 - 5 |
| | Southern Pine | No.2 | 9 - 6 | 12 - 1 | 14 - 4 | 16 - 10 | 8 - 6 | 10 - 10 | 12 - 10 | 15 - 1 |
| | Southern Pine | No.3 | 7 - 3 | 9 - 1 | 11 - 0 | 13 - 1 | 6 - 5 | 8 - 2 | 9 - 10 | 11 - 8 |
| | Spruce-Pine Fir | SS | 9 - 10 | 13 - 0 | 16 - 7 | 20 - 2 | 9 - 10 | 13 - 0 | 16 - 7 | 19 - 6 |
| | Spruce-Pine Fir | No.1 | 9 - 8 | 12 - 9 | 15 - 8 | 18 - 3 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | Spruce-Pine Fir | No.2 | 9 - 8 | 12 - 9 | 15 - 8 | 18 - 3 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | Spruce-Pine Fir | No.3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| 24 in. | Douglas Fir-Larch | SS | 9 - 11 | 13 - 1 | 16 - 8 | 20 - 3 | 9 - 11 | 13 - 1 | 16 - 5 | 19 - 1 |
| | Douglas Fir-Larch | No.1 | 9 - 7 | 12 - 4 | 15 - 0 | 17 - 5 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Douglas Fir-Larch | No.2 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Douglas Fir-Larch | No.3 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 | 6 - 3 | 8 - 0 | 9 - 9 | 11 - 3 |
| | Hem-Fir | SS | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 | 9 - 4 | 12 - 4 | 15 - 9 | 18 - 5 |
| | Hem-Fir | No.1 | 9 - 2 | 12 - 1 | 14 - 10 | 17 - 2 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Hem-Fir | No.2 | 8 - 9 | 11 - 4 | 13 - 10 | 16 - 1 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |
| | Hem-Fir | No.3 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |
| | Southern Pine | SS | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 8 |
| | Southern Pine | No.1 | 9 - 4 | 12 - 4 | 14 - 8 | 17 - 5 | 8 - 10 | 11 - 3 | 13 - 1 | 15 - 7 |
| | Southern Pine | No.2 | 8 - 6 | 10 - 10 | 12 - 10 | 15 - 1 | 7 - 7 | 9 - 8 | 11 - 5 | 13 - 6 |
| | Southern Pine | No.3 | 6 - 5 | 8 - 2 | 9 - 10 | 11 - 8 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 5 |
| | Spruce-Pine Fir | SS | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 9 - 2 | 12 - 1 | 15 - 0 | 17 - 5 |
| | Spruce-Pine Fir | No.1 | 8 - 11 | 11 - 6 | 14 - 1 | 16 - 3 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Spruce-Pine Fir | No.2 | 8 - 11 | 11 - 6 | 14 - 1 | 16 - 3 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Spruce-Pine Fir | No.3 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |

Check sources for availability of lumber in lengths greater than 20 feet.

1. Spans checked for live load deflection only.

## Table 3.18B Floor Joist Spans for Common Lumber Species

(Residential Living Areas) Live Load = 40 psf, $L/\Delta_{LL} = 360$

**LL = 40 psf**
**$L/\Delta_{LL} = 360$**

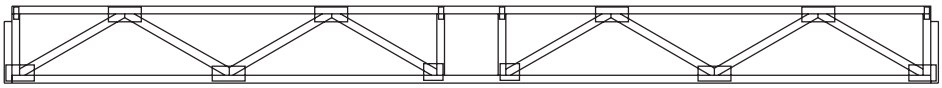
| | | | Dead Load = 10 psf | | | | Dead Load = 20 psf | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x6 | 2x8 | 2x10 | 2x12 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans[1] | | | | | | | |
| Joist Spacing | Species and Grade | | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 in. | Douglas Fir-Larch | SS | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 |
| | Douglas Fir-Larch | No.1 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 0 | 10 - 11 | 14 - 2 | 17 - 4 | 20 - 1 |
| | Douglas Fir-Larch | No.2 | 10 - 9 | 14 - 2 | 18 - 0 | 20 - 11 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | Douglas Fir-Larch | No.3 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Hem-Fir | SS | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 |
| | Hem-Fir | No.1 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 10 - 6 | 13 - 10 | 17 - 1 | 19 - 10 |
| | Hem-Fir | No.2 | 10 - 0 | 13 - 2 | 16 - 10 | 20 - 4 | 10 - 0 | 13 - 1 | 16 - 0 | 18 - 6 |
| | Hem-Fir | No.3 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | Southern Pine | SS | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 |
| | Southern Pine | No.1 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 10 - 9 | 14 - 2 | 16 - 11 | 20 - 1 |
| | Southern Pine | No.2 | 10 - 3 | 13 - 6 | 16 - 2 | 19 - 1 | 9 - 10 | 12 - 6 | 14 - 9 | 17 - 5 |
| | Southern Pine | No.3 | 8 - 2 | 10 - 3 | 12 - 6 | 14 - 9 | 7 - 5 | 9 - 5 | 11 - 5 | 13 - 6 |
| | Spruce-Pine Fir | SS | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | Spruce-Pine Fir | No.1 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 7 | 10 - 3 | 13 - 3 | 16 - 3 | 18 - 10 |
| | Spruce-Pine Fir | No.2 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 7 | 10 - 3 | 13 - 3 | 16 - 3 | 18 - 10 |
| | Spruce-Pine Fir | No.3 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| 16 in. | Douglas Fir-Larch | SS | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 |
| | Douglas Fir-Larch | No.1 | 9 - 11 | 13 - 1 | 16 - 5 | 19 - 1 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Douglas Fir-Larch | No.2 | 9 - 9 | 12 - 9 | 15 - 7 | 18 - 1 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | Douglas Fir-Larch | No.3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 |
| | Hem-Fir | SS | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 |
| | Hem-Fir | No.1 | 9 - 6 | 12 - 7 | 16 - 0 | 18 - 10 | 9 - 6 | 12 - 2 | 14 - 10 | 17 - 2 |
| | Hem-Fir | No.2 | 9 - 1 | 12 - 0 | 15 - 2 | 17 - 7 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | Hem-Fir | No.3 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Southern Pine | SS | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 |
| | Southern Pine | No.1 | 9 - 9 | 12 - 10 | 16 - 1 | 19 - 1 | 9 - 9 | 12 - 7 | 14 - 8 | 17 - 5 |
| | Southern Pine | No.2 | 9 - 4 | 11 - 10 | 14 - 0 | 16 - 6 | 8 - 6 | 10 - 10 | 12 - 10 | 15 - 1 |
| | Southern Pine | No.3 | 7 - 1 | 8 - 11 | 10 - 10 | 12 - 10 | 6 - 5 | 8 - 2 | 9 - 10 | 11 - 8 |
| | Spruce-Pine Fir | SS | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 |
| | Spruce-Pine Fir | No.1 | 9 - 4 | 12 - 3 | 15 - 5 | 17 - 10 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | Spruce-Pine Fir | No.2 | 9 - 4 | 12 - 3 | 15 - 5 | 17 - 10 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | Spruce-Pine Fir | No.3 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| 19.2 in. | Douglas Fir-Larch | SS | 9 - 8 | 12 - 10 | 16 - 4 | 19 - 10 | 9 - 8 | 12 - 10 | 16 - 4 | 19 - 6 |
| | Douglas Fir-Larch | No.1 | 9 - 4 | 12 - 4 | 15 - 0 | 17 - 5 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 |
| | Douglas Fir-Larch | No.2 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Douglas Fir-Larch | No.3 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 | 6 - 5 | 8 - 2 | 9 - 11 | 11 - 6 |
| | Hem-Fir | SS | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 |
| | Hem-Fir | No.1 | 9 - 0 | 11 - 10 | 14 - 10 | 17 - 2 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | Hem-Fir | No.2 | 8 - 7 | 11 - 3 | 13 - 10 | 16 - 1 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | Hem-Fir | No.3 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 |
| | Southern Pine | SS | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 |
| | Southern Pine | No.1 | 9 - 2 | 12 - 1 | 14 - 8 | 17 - 5 | 9 - 0 | 11 - 5 | 13 - 5 | 15 - 11 |
| | Southern Pine | No.2 | 8 - 6 | 10 - 10 | 12 - 10 | 15 - 1 | 7 - 9 | 9 - 10 | 11 - 8 | 13 - 9 |
| | Southern Pine | No.3 | 6 - 5 | 8 - 2 | 9 - 10 | 11 - 8 | 5 - 11 | 7 - 5 | 9 - 0 | 10 - 8 |
| | Spruce-Pine Fir | SS | 9 - 0 | 11 - 10 | 15 - 1 | 18 - 4 | 9 - 0 | 11 - 10 | 15 - 1 | 17 - 9 |
| | Spruce-Pine Fir | No.1 | 8 - 9 | 11 - 6 | 14 - 1 | 16 - 3 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 |
| | Spruce-Pine Fir | No.2 | 8 - 9 | 11 - 6 | 14 - 1 | 16 - 3 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 |
| | Spruce-Pine Fir | No.3 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 |
| 24 in. | Douglas Fir-Larch | SS | 9 - 0 | 11 - 11 | 15 - 2 | 18 - 5 | 9 - 0 | 11 - 11 | 15 - 0 | 17 - 5 |
| | Douglas Fir-Larch | No.1 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | Douglas Fir-Larch | No.2 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | Douglas Fir-Larch | No.3 | 6 - 3 | 8 - 0 | 9 - 9 | 11 - 3 | 5 - 9 | 7 - 3 | 8 - 11 | 10 - 4 |
| | Hem-Fir | SS | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 16 - 10 |
| | Hem-Fir | No.1 | 8 - 4 | 10 - 10 | 13 - 3 | 15 - 5 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 |
| | Hem-Fir | No.2 | 7 - 11 | 10 - 2 | 12 - 5 | 14 - 4 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | Hem-Fir | No.3 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Southern Pine | SS | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 1 | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 0 |
| | Southern Pine | No.1 | 8 - 6 | 11 - 3 | 13 - 1 | 15 - 7 | 8 - 1 | 10 - 3 | 12 - 0 | 14 - 3 |
| | Southern Pine | No.2 | 7 - 7 | 9 - 8 | 11 - 5 | 13 - 6 | 6 - 11 | 8 - 10 | 10 - 5 | 12 - 4 |
| | Southern Pine | No.3 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 5 | 5 - 3 | 6 - 8 | 8 - 1 | 9 - 6 |
| | Spruce-Pine Fir | SS | 8 - 4 | 11 - 0 | 14 - 0 | 17 - 0 | 8 - 4 | 11 - 0 | 13 - 8 | 15 - 11 |
| | Spruce-Pine Fir | No.1 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Spruce-Pine Fir | No.2 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Spruce-Pine Fir | No.3 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |

Check sources for availability of lumber in lengths greater than 20 feet.

1. Spans checked for live load deflection only.

## Table 3.19 Representative Metal Plate Connected Wood Floor Truss Spans

Actual Design Spans Shall Be Obtained from the Truss Manufacturer
(Top Chord Live Load = 40 psf)



| | | | Top Chord Dead Load = 5 psf Bottom Chord Dead Load = 5 psf | | Top Chord Dead Load = 10 psf Bottom Chord Dead Load = 5 psf | | Top Chord Dead Load = 10 psf Bottom Chord Dead Load = 10 psf | |
|---|---|---|---|---|---|---|---|---|
| | | | 16" o.c. | 24" o.c. | 16" o.c. | 24" o.c. | 16" o.c. | 24" o.c. |
| | | | Representative Floor Truss Spans | | | | | |
| Total Truss Depth | Species and Grade | | (ft- in.) | (ft- in.) | (ft- in.) | (ft- in.) | (ft- in.) | (ft- in.) |
| 12 in. | Douglas Fir-Larch | SS | 21-0 | 20-0 | 21-0 | 20-0 | 21-0 | 20-0 |
| | Douglas Fir-Larch | #1 | 21-0 | 19-0 | 21-0 | 17-0 | 19-4 | 16-7 |
| | Douglas Fir-Larch | #2 | 20-4 | 17-0 | 20-0 | 16-4 | 19-0 | 15-9 |
| | Hem-Fir | SS | 18-6 | 18-6 | 18-6 | 18-4 | 18-4 | 18-0 |
| | Hem-Fir | #1 | 18-6 | 17-0 | 18-3 | 16-0 | 18-0 | 15-2 |
| | Hem-Fir | #2 | 18-6 | 16-0 | 18-0 | 14-4 | 17-9 | 14-2 |
| | Southern Pine | SS | 21-0 | 20-0 | 21-0 | 20-0 | 21-0 | 20-0 |
| | Southern Pine | #1 | 21-0 | 19-0 | 21-0 | 17-7 | 20-0 | 17-0 |
| | Southern Pine | #2 | 20-0 | 17-0 | 19-8 | 16-4 | 19-0 | 15-9 |
| | Spruce-Pine-Fir | SS | 17-6 | 14-9 | 17-6 | 14-8 | 17-0 | 14-4 |
| | Spruce-Pine-Fir | #1 | 17-0 | 13-9 | 16-8 | 13-6 | 16-0 | 13-0 |
| | Spruce-Pine-Fir | #2 | 16-6 | 13-9 | 16-0 | 12-0 | 15-6 | 11-6 |
| 16 in. | Douglas Fir-Larch | SS | 26-0 | 26-0 | 26-0 | 25-2 | 26-0 | 23-0 |
| | Douglas Fir-Larch | #1 | 26-0 | 21-4 | 25-6 | 20-3 | 23-4 | 18-4 |
| | Douglas Fir-Larch | #2 | 24-6 | 19-6 | 23-4 | 18-8 | 21-1 | 16-8 |
| | Hem-Fir | SS | 25-0 | 25-0 | 25-0 | 24-0 | 25-0 | 22-0 |
| | Hem-Fir | #1 | 24-6 | 20-0 | 24-0 | 19-0 | 22-0 | 17-0 |
| | Hem-Fir | #2 | 22-6 | 18-0 | 21-8 | 17-2 | 20-0 | 15-3 |
| | Southern Pine | SS | 26-0 | 26-0 | 26-0 | 25-2 | 26-0 | 23-0 |
| | Southern Pine | #1 | 25-0 | 22-0 | 25-9 | 20-9 | 24-0 | 18-9 |
| | Southern Pine | #2 | 24-0 | 19-1 | 23-0 | 18-2 | 21-0 | 16-4 |
| | Spruce-Pine-Fir | SS | 24-0 | 21-3 | 24-2 | 20-2 | 23-2 | 18-8 |
| | Spruce-Pine-Fir | #1 | 21-0 | 16-9 | 20-0 | 16-0 | 18-2 | 14-3 |
| | Spruce-Pine-Fir | #2 | 21-0 | 16-9 | 20-0 | 16-0 | 18-2 | 14-3 |
| 20 in. | Douglas Fir-Larch | SS | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 |
| | Douglas Fir-Larch | #1 | 26-0 | 24-3 | 26-0 | 23-0 | 26-0 | 20-6 |
| | Douglas Fir-Larch | #2 | 26-0 | 22-2 | 26-0 | 21-0 | 24-1 | 18-9 |
| | Hem-Fir | SS | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 | 24-9 |
| | Hem-Fir | #1 | 26-0 | 22-7 | 26-0 | 21-7 | 25-0 | 19-4 |
| | Hem-Fir | #2 | 25-6 | 20-5 | 24-7 | 19-7 | 22-2 | 17-3 |
| | Southern Pine | SS | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 |
| | Southern Pine | #1 | 26-0 | 24-6 | 26-0 | 23-3 | 26-0 | 20-9 |
| | Southern Pine | #2 | 26-0 | 21-3 | 26-0 | 20-6 | 24-0 | 18-4 |
| | Spruce-Pine-Fir | SS | 26-0 | 24-1 | 26-0 | 23-0 | 26-0 | 21-0 |
| | Spruce-Pine-Fir | #1 | 23-6 | 18-9 | 22-2 | 18-0 | 20-6 | 16-1 |
| | Spruce-Pine-Fir | #2 | 23-6 | 18-9 | 22-2 | 18-0 | 20-6 | 16-1 |
| 24 in. | Douglas Fir-Larch | SS | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 |
| | Douglas Fir-Larch | #1 | 26-0 | 26-0 | 26-0 | 25-4 | 26-0 | 23-0 |
| | Douglas Fir-Larch | #2 | 26-0 | 24-3 | 26-0 | 23-2 | 26-0 | 20-9 |
| | Hem-Fir | SS | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 |
| | Hem-Fir | #1 | 26-0 | 25-0 | 26-0 | 24-0 | 26-0 | 21-4 |
| | Hem-Fir | #2 | 26-0 | 22-8 | 26-0 | 21-4 | 24-9 | 19-2 |
| | Southern Pine | SS | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 | 26-0 |
| | Southern Pine | #1 | 26-0 | 26-0 | 26-0 | 25-9 | 26-0 | 23-6 |
| | Southern Pine | #2 | 26-0 | 24-0 | 26-0 | 23-0 | 26-0 | 20-4 |
| | Spruce-Pine-Fir | SS | 26-0 | 26-0 | 26-0 | 25-3 | 26-0 | 23-4 |
| | Spruce-Pine-Fir | #1 | 26-0 | 20-8 | 24-9 | 20-0 | 23-0 | 17-9 |
| | Spruce-Pine-Fir | #2 | 26-0 | 20-8 | 24-9 | 20-0 | 23-0 | 17-9 |

See Table 3.19 footnotes.

## Footnotes to Table 3.19

- This table provides example spans for the parameters shown and is not intended to be used for actual design purposes. Spans have been determined in accordance with the 2007 edition of the Truss Plate Institute's *National Design Standard for Metal Plate Connected Wood Truss Construction, ANSI/TPI 1-07*, and the 2009 *International Residential Code® (IRC®)*. Truss spans based on different loads, lumber species and grades, truss depths and web configurations are possible. Floor spans greater than 26 feet are possible but are limited by the context of this manual. Contact a truss manufacturer for actual floor truss designs and solutions to each specific application.
- This table applies only to wood floor trusses that are shop-built and designed and manufactured in accordance with ANSI/TPI 1.
- The spans shown in this table apply to floor trusses used in enclosed structures or where the moisture content in use does not exceed 19 percent for an extended period of time.
- All lumber for the floor trusses in this table is 2x4 oriented flatwise. The maximum panel length in these trusses is 30 inches.

## Table 3.20A1 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

**Exposure B**
**H/180**

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 13 - 6 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | HF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | HF | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 8 | - | - | 13 - 2 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | SP | Standard | 13 - 8 | - | - | 13 - 7 | - | - | 12 - 10 | - | - | 12 - 2 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† |
| | SPF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | SPF | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 8 | - | - | 13 - 2 | - | - |
| 16 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | DFL | Standard | 13 - 0 | - | - | 12 - 11 | - | - | 12 - 2 | - | - | 11 - 7 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | HF | No.1 | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | HF | No.2 | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† |
| | HF | No.3/Stud | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | HF | Standard | 12 - 8 | - | - | 12 - 7 | - | - | 11 - 11 | - | - | 11 - 4 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | SP | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | SP | No.3 | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 10 | 20-0† | 12 - 3 | 18 - 10 | 20-0† |
| | SP | Stud | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 10 | 20-0† | 12 - 3 | 18 - 10 | 20-0† |
| | SP | Standard | 11 - 10 | - | - | 11 - 8 | - | - | 11 - 0 | - | - | 10 - 5 | - | - |
| | SPF | SS | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SPF | No.1 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | SPF | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | SPF | No.3/Stud | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | SPF | Standard | 12 - 8 | - | - | 12 - 7 | - | - | 11 - 11 | - | - | 11 - 4 | - | - |
| 24 | DFL | SS | 13 - 1 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† |
| | DFL | No.1 | 12 - 7 | 19 - 10 | 20-0† | 12 - 6 | 19 - 10 | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 8 | 18 - 9 | 20-0† |
| | DFL | No.2 | 12 - 4 | 19 - 5 | 20-0† | 12 - 3 | 19 - 5 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | DFL | No.3/Stud | 11 - 10 | 18 - 2 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 7 | 20-0† |
| | DFL | Standard | 10 - 7 | - | - | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 4 | - | - |
| | HF | SS | 12 - 4 | 19 - 5 | 20-0† | 12 - 3 | 19 - 5 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | HF | No.1 | 12 - 1 | 19 - 0 | 20-0† | 12 - 0 | 19 - 0 | 20-0† | 11 - 7 | 18 - 7 | 20-0† | 11 - 2 | 18 - 0 | 20-0† |
| | HF | No.2 | 11 - 6 | 18 - 2 | 20-0† | 11 - 5 | 18 - 2 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | HF | No.3/Stud | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 0 | 20-0† | 10 - 4 | 16 - 2 | 20-0† |
| | HF | Standard | 10 - 4 | - | - | 10 - 2 | - | - | 9 - 7 | - | - | 9 - 1 | - | - |
| | SP | SS | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | SP | No.1 | 12 - 4 | 19 - 5 | 20-0† | 12 - 3 | 19 - 5 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | SP | No.2 | 11 - 10 | 18 - 7 | 20-0† | 11 - 9 | 18 - 7 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SP | No.3 | 11 - 3 | 16 - 8 | 20-0† | 11 - 1 | 16 - 8 | 20-0† | 10 - 6 | 15 - 11 | 20-0† | 9 - 11 | 15 - 2 | 19 - 5 |
| | SP | Stud | 11 - 3 | 16 - 8 | 20-0† | 11 - 1 | 16 - 8 | 20-0† | 10 - 6 | 15 - 11 | 20-0† | 9 - 11 | 15 - 2 | 19 - 5 |
| | SP | Standard | 9 - 8 | - | - | 9 - 4 | - | - | 8 - 10 | - | - | 8 - 5 | - | - |
| | SPF | SS | 12 - 1 | 19 - 0 | 20-0† | 12 - 0 | 19 - 0 | 20-0† | 11 - 7 | 18 - 7 | 20-0† | 11 - 2 | 18 - 0 | 20-0† |
| | SPF | No.1 | 11 - 10 | 18 - 7 | 20-0† | 11 - 9 | 18 - 7 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SPF | No.2 | 11 - 10 | 18 - 7 | 20-0† | 11 - 9 | 18 - 7 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SPF | No.3/Stud | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 0 | 20-0† | 10 - 4 | 16 - 2 | 20-0† |
| | SPF | Standard | 10 - 4 | - | - | 10 - 2 | - | - | 9 - 7 | - | - | 9 - 1 | - | - |

See Table 3.20A footnotes.

## Table 3.20A1 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

# Exposure B H/180

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14 - 0 | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 12 - 10 | 20-0† | 20-0† | 12 - 2 | 19 - 7 | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | DFL | No.3/Stud | 13 - 6 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 0 | 19 - 2 | 20-0† | 11 - 5 | 17 - 8 | 20-0† |
| | DFL | Standard | 12 - 10 | - | - | 12 - 3 | - | - | 11 - 9 | - | - | 10 - 9 | - | - | 9 - 11 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | HF | No.1 | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 3 | 19 - 9 | 20-0† | 11 - 8 | 18 - 9 | 20-0† |
| | HF | No.2 | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 8 | 18 - 9 | 20-0† | 11 - 1 | 17 - 10 | 20-0† |
| | HF | No.3/Stud | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 3 | 20-0† |
| | HF | Standard | 12 - 7 | - | - | 12 - 0 | - | - | 11 - 5 | - | - | 10 - 6 | - | - | 9 - 8 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 20 - 0 | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | SP | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 5 | 18 - 3 | 20-0† |
| | SP | No.3 | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 19 - 11 | 20-0† | 12 - 4 | 19 - 0 | 20-0† | 11 - 6 | 17 - 5 | 20-0† | 10 - 7 | 16 - 1 | 20-0† |
| | SP | Stud | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 19 - 11 | 20-0† | 12 - 4 | 19 - 0 | 20-0† | 11 - 6 | 17 - 5 | 20-0† | 10 - 7 | 16 - 1 | 20-0† |
| | SP | Standard | 11 - 7 | - | - | 11 - 1 | - | - | 10 - 7 | - | - | 9 - 8 | - | - | 9 - 0 | - | - |
| | SPF | SS | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 3 | 19 - 9 | 20-0† | 11 - 8 | 18 - 9 | 20-0† |
| | SPF | No.1 | 13 - 6 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 5 | 18 - 3 | 20-0† |
| | SPF | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 5 | 18 - 3 | 20-0† |
| | SPF | No.3/Stud | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 3 | 20-0† |
| | SPF | Standard | 12 - 7 | - | - | 12 - 0 | - | - | 11 - 5 | - | - | 10 - 6 | - | - | 9 - 8 | - | - |
| 16 | DFL | SS | 13 - 7 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 1 | 19 - 4 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | DFL | No.1 | 13 - 0 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 0 | 17 - 8 | 20-0† |
| | DFL | No.2 | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | DFL | No.3/Stud | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 18 - 8 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 10 - 10 | 16 - 5 | 20-0† | 10 - 1 | 15 - 2 | 19 - 6 |
| | DFL | Standard | 11 - 0 | - | - | 10 - 6 | - | - | 10 - 0 | - | - | 9 - 3 | - | - | 8 - 6 | - | - |
| | HF | SS | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | HF | No.1 | 12 - 6 | 20-0† | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 1 | 17 - 10 | 20-0† | 10 - 7 | 16 - 11 | 20-0† |
| | HF | No.2 | 11 - 10 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 0 | 16 - 1 | 20-0† |
| | HF | No.3/Stud | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 0 | 20-0† | 9 - 9 | 14 - 9 | 19 - 0 |
| | HF | Standard | 10 - 9 | - | - | 10 - 3 | - | - | 9 - 10 | - | - | 9 - 0 | - | - | 8 - 4 | - | - |
| | SP | SS | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 6 | 20-0† | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 3 | 18 - 1 | 20-0† |
| | SP | No.1 | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | SP | No.2 | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 6 | 20-0† |
| | SP | No.3 | 11 - 9 | 17 - 11 | 20-0† | 11 - 3 | 17 - 1 | 20-0† | 10 - 9 | 16 - 4 | 20-0† | 9 - 10 | 14 - 11 | 19 - 2 | 9 - 1 | 13 - 10 | 17 - 8 |
| | SP | Stud | 11 - 9 | 17 - 11 | 20-0† | 11 - 3 | 17 - 1 | 20-0† | 10 - 9 | 16 - 4 | 20-0† | 9 - 10 | 14 - 11 | 19 - 2 | 9 - 1 | 13 - 10 | 17 - 8 |
| | SP | Standard | 9 - 11 | - | - | 9 - 6 | - | - | 9 - 1 | - | - | 8 - 4 | - | - | - | - | - |
| | SPF | SS | 12 - 6 | 20-0† | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 1 | 17 - 10 | 20-0† | 10 - 7 | 16 - 11 | 20-0† |
| | SPF | No.1 | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 6 | 20-0† |
| | SPF | No.2 | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 6 | 20-0† |
| | SPF | No.3/Stud | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 0 | 20-0† | 9 - 9 | 14 - 9 | 19 - 0 |
| | SPF | Standard | 10 - 9 | - | - | 10 - 3 | - | - | 9 - 10 | - | - | 9 - 0 | - | - | 8 - 4 | - | - |
| 24 | DFL | SS | 11 - 9 | 18 - 11 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 1 | 17 - 9 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 9 - 11 | 16 - 0 | 20-0† |
| | DFL | No.1 | 11 - 4 | 18 - 2 | 20-0† | 11 - 0 | 17 - 7 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 4 | 20-0† |
| | DFL | No.2 | 11 - 1 | 17 - 10 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 10 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | DFL | No.3/Stud | 10 - 6 | 15 - 9 | 20-0† | 10 - 0 | 15 - 1 | 19 - 5 | 9 - 7 | 14 - 4 | 18 - 6 | 8 - 9 | 13 - 2 | 17 - 0 | 8 - 1 | 12 - 2 | 15 - 8 |
| | DFL | Standard | 8 - 10 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - | - | - | - |
| | HF | SS | 11 - 1 | 17 - 10 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 10 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | HF | No.1 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 |
| | HF | No.2 | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 0 | 18 - 8 |
| | HF | No.3/Stud | 10 - 0 | 15 - 4 | 19 - 10 | 9 - 9 | 14 - 8 | 18 - 11 | 9 - 4 | 14 - 0 | 18 - 1 | 8 - 7 | 12 - 10 | 16 - 7 | 7 - 11 | 11 - 10 | 15 - 3 |
| | HF | Standard | 8 - 8 | - | - | 8 - 3 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |
| | SP | SS | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SP | No.1 | 11 - 1 | 17 - 10 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 10 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | SP | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SP | No.3 | 9 - 6 | 14 - 5 | 18 - 5 | 9 - 0 | 13 - 9 | 17 - 7 | 8 - 8 | 13 - 1 | 16 - 10 | 7 - 11 | 12 - 0 | 15 - 5 | - | 11 - 1 | 14 - 3 |
| | SP | Stud | 9 - 6 | 14 - 5 | 18 - 5 | 9 - 0 | 13 - 9 | 17 - 7 | 8 - 8 | 13 - 1 | 16 - 10 | 7 - 11 | 12 - 0 | 15 - 5 | - | 11 - 1 | 14 - 3 |
| | SP | Standard | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 |
| | SPF | No.1 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SPF | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SPF | No.3/Stud | 10 - 0 | 15 - 4 | 19 - 10 | 9 - 9 | 14 - 8 | 18 - 11 | 9 - 4 | 14 - 0 | 18 - 1 | 8 - 7 | 12 - 10 | 16 - 7 | 7 - 11 | 11 - 10 | 15 - 3 |
| | SPF | Standard | 8 - 8 | - | - | 8 - 3 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A1 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

# Exposure B H/180

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 12 - 1 | 19 - 5 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 11 - 1 | 17 - 9 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 1 | 16 - 2 | 20-0† |
| | DFL | No.1 | 11 - 7 | 18 - 8 | 20-0† | 11 - 1 | 17 - 10 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† |
| | DFL | No.2 | 11 - 4 | 18 - 3 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 6 | 15 - 2 | 20-0† |
| | DFL | No.3/Stud | 10 - 10 | 16 - 5 | 20-0† | 10 - 2 | 15 - 4 | 19 - 9 | 9 - 7 | 14 - 4 | 18 - 6 | 9 - 0 | 13 - 6 | 17 - 5 | 8 - 3 | 12 - 5 | 15 -11 |
| | DFL | Standard | 9 - 3 | - | - | 8 - 7 | - | - | 8 - 1 | - | - | - | - | - | - | - | - |
| | HF | SS | 11 - 4 | 18 - 3 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 6 | 15 - 2 | 20-0† |
| | HF | No.1 | 11 - 1 | 17 - 10 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 9 | 15 - 9 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | HF | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 1 | 16 - 3 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 14 - 11 | 20 - 0 | 8 - 10 | 14 - 2 | 18 - 11 |
| | HF | No.3/Stud | 10 - 3 | 16 - 0 | 20-0† | 9 - 10 | 14 - 11 | 19 - 3 | 9 - 4 | 14 - 0 | 18 - 0 | 8 - 9 | 13 - 2 | 16 - 11 | 8 - 0 | 12 - 1 | 15 - 7 |
| | HF | Standard | 9 - 0 | - | - | 8 - 5 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |
| | SP | SS | 11 - 10 | 19 - 0 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 10 | 15 - 10 | 20-0† |
| | SP | No.1 | 11 - 4 | 18 - 3 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 6 | 15 - 2 | 20-0† |
| | SP | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 8 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 |
| | SP | No.3 | 9 - 10 | 15 - 0 | 19 - 2 | 9 - 2 | 14 - 0 | 17 - 11 | 8 - 7 | 13 - 1 | 16 - 9 | 8 - 1 | 12 - 4 | 15 - 9 | - | 11 - 4 | 14 - 6 |
| | SP | Stud | 9 - 10 | 15 - 0 | 19 - 2 | 9 - 2 | 14 - 0 | 17 - 11 | 8 - 7 | 13 - 1 | 16 - 9 | 8 - 1 | 12 - 4 | 15 - 9 | - | 11 - 4 | 14 - 6 |
| | SP | Standard | 8 - 4 | - | - | 7 - 9 | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 11 - 1 | 17 - 10 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 9 | 15 - 9 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | SPF | No.1 | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 8 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 |
| | SPF | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 8 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 |
| | SPF | No.3/Stud | 10 - 3 | 16 - 0 | 20-0† | 9 - 10 | 14 - 11 | 19 - 3 | 9 - 4 | 14 - 0 | 18 - 0 | 8 - 9 | 13 - 2 | 16 - 11 | 8 - 0 | 12 - 1 | 15 - 7 |
| | SPF | Standard | 9 - 0 | - | - | 8 - 5 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 10 - 11 | 17 - 6 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 |
| | DFL | No.1 | 10 - 6 | 16 - 10 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 8 | 15 - 5 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 9 | 14 - 0 | 18 - 9 |
| | DFL | No.2 | 10 - 3 | 16 - 6 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 7 | 13 - 9 | 18 - 3 |
| | DFL | No.3/Stud | 9 - 4 | 14 - 1 | 18 - 1 | 8 - 9 | 13 - 1 | 16 - 11 | 8 - 2 | 12 - 4 | 15 - 10 | - | 11 - 7 | 14 - 11 | - | 10 - 7 | 13 - 8 |
| | DFL | Standard | 7 - 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 3 | 16 - 6 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 7 | 13 - 9 | 18 - 4 |
| | HF | No.1 | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 10 | 14 - 2 | 19 - 0 | 8 - 5 | 13 - 5 | 17 - 11 |
| | HF | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 1 | 8 - 0 | 12 - 9 | 17 - 1 |
| | HF | No.3/Stud | 9 - 1 | 13 - 8 | 17 - 8 | 8 - 6 | 12 - 9 | 16 - 6 | 8 - 0 | 12 - 0 | 15 - 5 | - | 11 - 3 | 14 - 6 | - | 10 - 4 | 13 - 4 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 9 | 17 - 2 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SP | No.1 | 10 - 3 | 16 - 6 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 7 | 13 - 9 | 18 - 4 |
| | SP | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 8 | 13 - 10 | 18 - 4 | 8 - 2 | 13 - 0 | 16 - 10 |
| | SP | No.3 | 8 - 5 | 12 - 10 | 16 - 5 | 7 - 11 | 12 - 0 | 15 - 4 | - | 11 - 3 | 14 - 4 | - | 10 - 7 | 13 - 6 | - | 9 - 8 | 12 - 5 |
| | SP | Stud | 8 - 5 | 12 - 10 | 16 - 5 | 7 - 11 | 12 - 0 | 15 - 4 | - | 11 - 3 | 14 - 4 | - | 10 - 7 | 13 - 6 | - | 9 - 8 | 12 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 10 | 14 - 2 | 19 - 0 | 8 - 5 | 13 - 5 | 17 - 11 |
| | SPF | No.1 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 2 | 13 - 1 | 17 - 6 |
| | SPF | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 2 | 13 - 1 | 17 - 6 |
| | SPF | No.3/Stud | 9 - 1 | 13 - 8 | 17 - 8 | 8 - 6 | 12 - 9 | 16 - 6 | 8 - 0 | 12 - 0 | 15 - 5 | - | 11 - 3 | 14 - 6 | - | 10 - 4 | 13 - 4 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 9 - 6 | 15 - 3 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 4 | 13 - 5 | 17 - 11 | 7 - 11 | 12 - 8 | 16 - 11 |
| | DFL | No.1 | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 9 | 14 - 0 | 18 - 8 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 11 | 16 - 11 | - | 12 - 1 | 15 - 7 |
| | DFL | No.2 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 8 | 18 - 2 | 8 - 2 | 13 - 2 | 17 - 0 | 7 - 10 | 12 - 5 | 16 - 0 | - | 11 - 5 | 14 - 8 |
| | DFL | No.3/Stud | - | 11 - 4 | 14 - 7 | - | 10 - 7 | 13 - 7 | - | 9 - 11 | 12 - 9 | - | 9 - 4 | 12 - 0 | - | 8 - 7 | 11 - 0 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 10 | 12 - 7 | 16 - 10 | - | 11 - 11 | 15 - 11 |
| | HF | No.1 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 6 | - | 11 - 8 | 15 - 4 |
| | HF | No.2 | 8 - 4 | 13 - 4 | 17 - 10 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 3 | 16 - 4 | - | 11 - 9 | 15 - 6 | - | 11 - 1 | 14 - 3 |
| | HF | No.3/Stud | - | 11 - 0 | 14 - 2 | - | 10 - 3 | 13 - 3 | - | 9 - 8 | 12 - 5 | - | 9 - 1 | 11 - 8 | - | 8 - 4 | 10 - 9 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 |
| | SP | No.1 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 10 | 12 - 7 | 16 - 10 | - | 11 - 11 | 15 - 11 |
| | SP | No.2 | 8 - 6 | 13 - 8 | 17 - 11 | 8 - 2 | 12 -11 | 16 - 9 | 7 - 10 | 12 - 2 | 15 - 8 | - | 11 - 5 | 14 - 9 | - | 10 - 6 | 13 - 6 |
| | SP | No.3 | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 4 | - | 9 - 0 | 11 - 7 | - | 8 - 6 | 10 - 10 | - | 7 - 10 | 10 - 0 |
| | SP | Stud | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 4 | - | 9 - 0 | 11 - 7 | - | 8 - 6 | 10 - 10 | - | 7 - 10 | 10 - 0 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 6 | - | 11 - 8 | 15 - 7 |
| | SPF | No.1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 0 | 15 - 9 | - | 11 - 3 | 14 - 6 |
| | SPF | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 0 | 15 - 9 | - | 11 - 3 | 14 - 6 |
| | SPF | No.3/Stud | - | 11 - 0 | 14 - 2 | - | 10 - 3 | 13 - 3 | - | 9 - 8 | 12 - 5 | - | 9 - 1 | 11 - 8 | - | 8 - 4 | 10 - 9 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A2 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

**Exposure B**
**H/240**

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | DFL | Standard | 13 - 6 | - | - | 13 - 6 | - | - | 13 - 0 | - | - | 12 - 7 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | HF | No.1 | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | HF | No.2 | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† |
| | HF | No.3/Stud | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | HF | Standard | 12 - 10 | - | - | 12 - 9 | - | - | 12 - 4 | - | - | 11 - 11 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | SP | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | SP | No.3 | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† |
| | SP | Stud | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† |
| | SP | Standard | 12 - 10 | - | - | 12 - 9 | - | - | 12 - 4 | - | - | 11 - 11 | - | - |
| | SPF | SS | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SPF | No.1 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | SPF | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† |
| | SPF | No.3/Stud | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | SPF | Standard | 12 - 10 | - | - | 12 - 9 | - | - | 12 - 4 | - | - | 11 - 11 | - | - |
| 16 | DFL | SS | 13 - 7 | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† |
| | DFL | No.1 | 13 - 1 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 7 | 20-0† |
| | DFL | No.2 | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | DFL | No.3/Stud | 12 - 4 | 19 - 4 | 20-0† | 12 - 2 | 19 - 4 | 20-0† | 11 - 9 | 18 - 11 | 20-0† | 11 - 5 | 18 - 3 | 20-0† |
| | DFL | Standard | 12 - 4 | - | - | 12 - 2 | - | - | 11 - 9 | - | - | 11 - 5 | - | - |
| | HF | SS | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | HF | No.1 | 12 - 7 | 19 - 9 | 20-0† | 12 - 6 | 19 - 9 | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 8 | 18 - 9 | 20-0† |
| | HF | No.2 | 12 - 0 | 18 - 10 | 20-0† | 11 - 11 | 18 - 10 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 11 - 1 | 17 - 10 | 20-0† |
| | HF | No.3/Stud | 11 - 8 | 18 - 4 | 20-0† | 11 - 7 | 18 - 4 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | HF | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 9 | - | - |
| | SP | SS | 13 - 4 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 20-0† | 20-0† | 12 - 5 | 20 - 0 | 20-0† |
| | SP | No.1 | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | SP | No.2 | 12 - 4 | 19 - 4 | 20-0† | 12 - 2 | 19 - 4 | 20-0† | 11 - 9 | 18 - 11 | 20-0† | 11 - 5 | 18 - 3 | 20-0† |
| | SP | No.3 | 12 - 0 | 18 - 10 | 20-0† | 11 - 11 | 18 - 10 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 11 - 1 | 17 - 10 | 20-0† |
| | SP | Stud | 12 - 0 | 18 - 10 | 20-0† | 11 - 11 | 18 - 10 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 11 - 1 | 17 - 10 | 20-0† |
| | SP | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 0 | - | - | 10 - 5 | - | - |
| | SPF | SS | 12 - 7 | 19 - 9 | 20-0† | 12 - 6 | 19 - 9 | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 8 | 18 - 9 | 20-0† |
| | SPF | No.1 | 12 - 4 | 19 - 4 | 20-0† | 12 - 2 | 19 - 4 | 20-0† | 11 - 9 | 18 - 11 | 20-0† | 11 - 5 | 18 - 3 | 20-0† |
| | SPF | No.2 | 12 - 4 | 19 - 4 | 20-0† | 12 - 2 | 19 - 4 | 20-0† | 11 - 9 | 18 - 11 | 20-0† | 11 - 5 | 18 - 3 | 20-0† |
| | SPF | No.3/Stud | 11 - 8 | 18 - 4 | 20-0† | 11 - 7 | 18 - 4 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | SPF | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 9 | - | - |
| 24 | DFL | SS | 11 - 11 | 18 - 8 | 20-0† | 11 - 9 | 18 - 8 | 20-0† | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 8 | 20-0† |
| | DFL | No.1 | 11 - 6 | 18 - 0 | 20-0† | 11 - 4 | 18 - 0 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 17 - 0 | 20-0† |
| | DFL | No.2 | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | DFL | No.3/Stud | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | DFL | Standard | 10 - 7 | - | - | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 4 | - | - |
| | HF | SS | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | HF | No.1 | 11 - 0 | 17 - 3 | 20-0† | 10 - 10 | 17 - 3 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 3 | 20-0† |
| | HF | No.2 | 10 - 6 | 16 - 6 | 20-0† | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 6 | 20-0† |
| | HF | No.3/Stud | 10 - 2 | 16 - 0 | 20-0† | 10 - 1 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | HF | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 7 | - | - | 9 - 1 | - | - |
| | SP | SS | 11 - 8 | 18 - 4 | 20-0† | 11 - 7 | 18 - 4 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | SP | No.1 | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | SP | No.2 | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | SP | No.3 | 10 - 6 | 16 - 6 | 20-0† | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 15 - 11 | 20-0† | 9 - 8 | 15 - 2 | 19 - 5 |
| | SP | Stud | 10 - 6 | 16 - 6 | 20-0† | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 15 - 11 | 20-0† | 9 - 8 | 15 - 2 | 19 - 5 |
| | SP | Standard | 9 - 8 | - | - | 9 - 4 | - | - | 8 - 10 | - | - | 8 - 5 | - | - |
| | SPF | SS | 11 - 0 | 17 - 3 | 20-0† | 10 - 10 | 17 - 3 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 3 | 20-0† |
| | SPF | No.1 | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | SPF | No.2 | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | SPF | No.3/Stud | 10 - 2 | 16 - 0 | 20-0† | 10 - 1 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | SPF | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 7 | - | - | 9 - 1 | - | - |

See Table 3.20A footnotes.

## Table 3.20A2 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

# Exposure B H/240

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 7 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 1 | 19 - 4 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | DFL | No.1 | 13 - 0 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 0 | 17 - 8 | 20-0† |
| | DFL | No.2 | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | DFL | No.3/Stud | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 6 | 20-0† |
| | DFL | Standard | 12 - 2 | - | - | 11 - 10 | - | - | 11 - 6 | - | - | 10 - 9 | - | - | 9 - 11 | - | - |
| | HF | SS | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | HF | No.1 | 12 - 6 | 20-0† | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 1 | 17 - 10 | 20-0† | 10 - 7 | 16 - 11 | 20-0† |
| | HF | No.2 | 11 - 10 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 0 | 16 - 1 | 20-0† |
| | HF | No.3/Stud | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | HF | Standard | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 8 | - | - |
| | SP | SS | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 6 | 20-0† | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 3 | 18 - 1 | 20-0† |
| | SP | No.1 | 12 - 9 | 20-0† | 20-0† | 12 - 5 | 19 - 10 | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | SP | No.2 | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 6 | 20-0† |
| | SP | No.3 | 11 - 10 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 0 | 16 - 1 | 20-0† |
| | SP | Stud | 11 - 10 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 0 | 16 - 1 | 20-0† |
| | SP | Standard | 11 - 7 | - | - | 11 - 1 | - | - | 10 - 7 | - | - | 9 - 8 | - | - | 9 - 0 | - | - |
| | SPF | SS | 12 - 6 | 20-0† | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 1 | 17 - 10 | 20-0† | 10 - 7 | 16 - 11 | 20-0† |
| | SPF | No.1 | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 6 | 20-0† |
| | SPF | No.2 | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 4 | 16 - 6 | 20-0† |
| | SPF | No.3/Stud | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SPF | Standard | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 8 | - | - |
| 16 | DFL | SS | 12 - 3 | 19 - 8 | 20-0† | 11 - 11 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 10 - 11 | 17 - 6 | 20-0† | 10 - 4 | 16 - 8 | 20-0† |
| | DFL | No.1 | 11 - 10 | 18 - 11 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 1 | 17 - 10 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 0 | 16 - 0 | 20-0† |
| | DFL | No.2 | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | DFL | No.3/Stud | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 8 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 15 - 0 | 19 - 6 |
| | DFL | Standard | 11 - 0 | - | - | 10 - 6 | - | - | 10 - 0 | - | - | 9 - 3 | - | - | 8 - 6 | - | - |
| | HF | SS | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | HF | No.1 | 11 - 3 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 4 | 20-0† |
| | HF | No.2 | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 3 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 |
| | HF | No.3/Stud | 10 - 5 | 16 - 9 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 2 | 18 - 11 |
| | HF | Standard | 10 - 5 | - | - | 10 - 2 | - | - | 9 - 10 | - | - | 9 - 0 | - | - | 8 - 4 | - | - |
| | SP | SS | 12 - 0 | 19 - 4 | 20-0† | 11 - 8 | 18 - 9 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | SP | No.1 | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SP | No.2 | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 8 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 14 - 11 | 20 - 0 |
| | SP | No.3 | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 3 | 20-0† | 9 - 7 | 14 - 11 | 19 - 2 | 9 - 1 | 13 - 10 | 17 - 8 |
| | SP | Stud | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 3 | 20-0† | 9 - 7 | 14 - 11 | 19 - 2 | 9 - 1 | 13 - 10 | 17 - 8 |
| | SP | Standard | 9 - 11 | - | - | 9 - 6 | - | - | 9 - 1 | - | - | 8 - 4 | - | - | - | - | - |
| | SPF | SS | 11 - 3 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 4 | 20-0† |
| | SPF | No.1 | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 8 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 14 - 11 | 20 - 0 |
| | SPF | No.2 | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 8 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 14 - 11 | 20 - 0 |
| | SPF | No.3/Stud | 10 - 5 | 16 - 9 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SPF | Standard | 10 - 5 | - | - | 10 - 2 | - | - | 9 - 10 | - | - | 9 - 0 | - | - | 8 - 4 | - | - |
| 24 | DFL | SS | 10 - 8 | 17 - 1 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 6 | 15 - 2 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 |
| | DFL | No.1 | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 8 | 13 - 11 | 18 - 7 |
| | DFL | No.2 | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | DFL | No.3/Stud | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 5 | 9 - 0 | 14 - 4 | 18 - 6 | 8 - 6 | 13 - 2 | 17 - 0 | 8 - 1 | 12 - 2 | 15 - 8 |
| | DFL | Standard | 8 - 10 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | HF | No.1 | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 3 | 14 - 10 | 19 - 9 | 8 - 9 | 14 - 0 | 18 - 8 | 8 - 3 | 13 - 4 | 17 - 9 |
| | HF | No.2 | 9 - 4 | 15 - 0 | 20 - 0 | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 9 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 8 | 16 - 11 |
| | HF | No.3/Stud | 9 - 1 | 14 - 7 | 19 - 5 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 6 | 13 - 8 | 18 - 1 | 8 - 1 | 12 - 10 | 16 - 7 | - | 11 - 10 | 15 - 3 |
| | HF | Standard | 8 - 8 | - | - | 8 - 3 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 5 | 16 - 9 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SP | No.1 | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | SP | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | SP | No.3 | 9 - 4 | 14 - 5 | 18 - 5 | 9 - 0 | 13 - 9 | 17 - 7 | 8 - 8 | 13 - 1 | 16 - 10 | 7 - 11 | 12 - 0 | 15 - 5 | - | 11 - 1 | 14 - 3 |
| | SP | Stud | 9 - 4 | 14 - 5 | 18 - 5 | 9 - 0 | 13 - 9 | 17 - 7 | 8 - 8 | 13 - 1 | 16 - 10 | 7 - 11 | 12 - 0 | 15 - 5 | - | 11 - 1 | 14 - 3 |
| | SP | Standard | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 3 | 14 - 10 | 19 - 9 | 8 - 9 | 14 - 0 | 18 - 8 | 8 - 3 | 13 - 4 | 17 - 9 |
| | SPF | No.1 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | SPF | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | SPF | No.3/Stud | 9 - 1 | 14 - 7 | 19 - 5 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 6 | 13 - 8 | 18 - 1 | 8 - 1 | 12 - 10 | 16 - 7 | - | 11 - 10 | 15 - 3 |
| | SPF | Standard | 8 - 8 | - | - | 8 - 3 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A2 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

# Exposure B H/240

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 10 - 11 | 17 - 6 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 |
| | DFL | No.1 | 10 - 6 | 16 - 10 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 8 | 15 - 5 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 9 | 14 - 0 | 18 - 9 |
| | DFL | No.2 | 10 - 3 | 16 - 6 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 7 | 13 - 9 | 18 - 4 |
| | DFL | No.3/Stud | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 19 - 9 | 9 - 0 | 14 - 4 | 18 - 6 | 8 - 8 | 13 - 6 | 17 - 5 | 8 - 2 | 12 - 5 | 15 - 11 |
| | DFL | Standard | 9 - 3 | - | - | 8 - 7 | - | - | 8 - 1 | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 3 | 16 - 6 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 7 | 13 - 9 | 18 - 4 |
| | HF | No.1 | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 10 | 14 - 2 | 19 - 0 | 8 - 5 | 13 - 5 | 17 - 11 |
| | HF | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 1 | 8 - 0 | 12 - 9 | 17 - 1 |
| | HF | No.3/Stud | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 6 | 13 - 8 | 18 - 0 | 8 - 2 | 13 - 2 | 16 - 11 | 7 - 9 | 12 - 1 | 15 - 7 |
| | HF | Standard | 9 - 0 | - | - | 8 - 5 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 9 | 17 - 2 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SP | No.1 | 10 - 3 | 16 - 6 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 7 | 13 - 9 | 18 - 4 |
| | SP | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 2 | 13 - 1 | 17 - 6 |
| | SP | No.3 | 9 - 7 | 15 - 0 | 19 - 2 | 9 - 2 | 14 - 0 | 17 - 11 | 8 - 7 | 13 - 1 | 16 - 9 | 8 - 1 | 12 - 4 | 15 - 9 | - | 11 - 4 | 14 - 6 |
| | SP | Stud | 9 - 7 | 15 - 0 | 19 - 2 | 9 - 2 | 14 - 0 | 17 - 11 | 8 - 7 | 13 - 1 | 16 - 9 | 8 - 1 | 12 - 4 | 15 - 9 | - | 11 - 4 | 14 - 6 |
| | SP | Standard | 8 - 4 | - | - | 7 - 9 | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 10 | 14 - 2 | 19 - 0 | 8 - 5 | 13 - 5 | 17 - 11 |
| | SPF | No.1 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 2 | 13 - 1 | 17 - 6 |
| | SPF | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 2 | 13 - 1 | 17 - 6 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 6 | 13 - 8 | 18 - 0 | 8 - 2 | 13 - 2 | 16 - 11 | 7 - 9 | 12 - 1 | 15 - 7 |
| | SPF | Standard | 9 - 0 | - | - | 8 - 5 | - | - | 7 - 11 | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 9 - 11 | 15 - 10 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 8 | 13 - 11 | 18 - 8 | 8 - 3 | 13 - 2 | 17 - 8 |
| | DFL | No.1 | 9 - 6 | 15 - 3 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 9 | 14 - 0 | 18 - 8 | 8 - 4 | 13 - 5 | 17 - 11 | 7 - 11 | 12 - 8 | 16 - 11 |
| | DFL | No.2 | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 |
| | DFL | No.3/Stud | 8 - 11 | 14 - 1 | 18 - 1 | 8 - 6 | 13 - 1 | 16 - 11 | 8 - 2 | 12 - 4 | 15 - 10 | - | 11 - 7 | 14 - 11 | - | 10 - 7 | 13 - 8 |
| | DFL | Standard | 7 - 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 |
| | HF | No.1 | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 8 | 13 - 11 | 18 - 8 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 2 | 16 - 3 |
| | HF | No.2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 3 | 13 - 3 | 17 - 9 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 |
| | HF | No.3/Stud | 8 - 5 | 13 - 6 | 17 - 8 | 8 - 1 | 12 - 9 | 16 - 6 | - | 12 - 0 | 15 - 5 | - | 11 - 3 | 14 - 6 | - | 10 - 4 | 13 - 4 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 8 | 15 - 7 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 1 | 12 - 11 | 17 - 4 |
| | SP | No.1 | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 |
| | SP | No.2 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 |
| | SP | No.3 | 8 - 5 | 12 - 10 | 16 - 5 | 7 - 11 | 12 - 0 | 15 - 4 | - | 11 - 3 | 14 - 4 | - | 10 - 7 | 13 - 6 | - | 9 - 8 | 12 - 5 |
| | SP | Stud | 8 - 5 | 12 - 10 | 16 - 5 | 7 - 11 | 12 - 0 | 15 - 4 | - | 11 - 3 | 14 - 4 | - | 10 - 7 | 13 - 6 | - | 9 - 8 | 12 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 8 | 13 - 11 | 18 - 8 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 2 | 16 - 3 |
| | SPF | No.1 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 |
| | SPF | No.2 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 |
| | SPF | No.3/Stud | 8 - 5 | 13 - 6 | 17 - 8 | 8 - 1 | 12 - 9 | 16 - 6 | - | 12 - 0 | 15 - 5 | - | 11 - 3 | 14 - 6 | - | 10 - 4 | 13 - 4 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 1 | 16 - 2 | - | 11 - 5 | 15 - 4 |
| | DFL | No.1 | 8 - 3 | 13 - 3 | 17 - 8 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 2 | 16 - 2 | - | 11 - 8 | 15 - 7 | - | 11 - 0 | 14 - 9 |
| | DFL | No.2 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | DFL | No.3/Stud | - | 11 - 4 | 14 - 7 | - | 10 - 7 | 13 - 7 | - | 9 - 11 | 12 - 9 | - | 9 - 4 | 12 - 0 | - | 8 - 7 | 11 - 0 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | HF | No.1 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 1 | 16 - 2 | - | 11 - 7 | 15 - 6 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 1 |
| | HF | No.2 | - | 12 - 1 | 16 - 1 | - | 11 - 6 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 0 | 13 - 5 |
| | HF | No.3/Stud | - | 11 - 0 | 14 - 2 | - | 10 - 3 | 13 - 3 | - | 9 - 8 | 12 - 5 | - | 9 - 1 | 11 - 8 | - | 8 - 4 | 10 - 9 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 12 - 11 | 17 - 3 | - | 12 - 4 | 16 - 6 | - | 11 - 11 | 15 - 11 | - | 11 - 3 | 15 - 0 |
| | SP | No.1 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | SP | No.2 | - | 12 - 4 | 16 - 6 | - | 11 - 10 | 15 - 9 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 6 |
| | SP | No.3 | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 4 | - | 9 - 0 | 11 - 7 | - | 8 - 6 | 10 - 10 | - | 7 - 10 | 10 - 0 |
| | SP | Stud | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 4 | - | 9 - 0 | 11 - 7 | - | 8 - 6 | 10 - 10 | - | 7 - 10 | 10 - 0 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 1 | 16 - 2 | - | 11 - 7 | 15 - 6 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 1 |
| | SPF | No.1 | - | 12 - 4 | 16 - 6 | - | 11 - 10 | 15 - 9 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 9 |
| | SPF | No.2 | - | 12 - 4 | 16 - 6 | - | 11 - 10 | 15 - 9 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 9 |
| | SPF | No.3/Stud | - | 11 - 0 | 14 - 2 | - | 10 - 3 | 13 - 3 | - | 9 - 8 | 12 - 5 | - | 9 - 1 | 11 - 8 | - | 8 - 4 | 10 - 9 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A3 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

**Exposure B**
**H/360**

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 1 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† |
| | DFL | No.1 | 12 - 7 | 19 - 10 | 20-0† | 12 - 6 | 19 - 10 | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 8 | 18 - 9 | 20-0† |
| | DFL | No.2 | 12 - 4 | 19 - 5 | 20-0† | 12 - 3 | 19 - 5 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | DFL | No.3/Stud | 11 - 10 | 18 - 7 | 20-0† | 11 - 9 | 18 - 7 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | DFL | Standard | 11 - 10 | - | - | 11 - 9 | - | - | 11 - 4 | - | - | 10 - 11 | - | - |
| | HF | SS | 12 - 4 | 19 - 5 | 20-0† | 12 - 3 | 19 - 5 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | HF | No.1 | 12 - 1 | 19 - 0 | 20-0† | 12 - 0 | 19 - 0 | 20-0† | 11 - 7 | 18 - 7 | 20-0† | 11 - 2 | 18 - 0 | 20-0† |
| | HF | No.2 | 11 - 6 | 18 - 2 | 20-0† | 11 - 5 | 18 - 2 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | HF | No.3/Stud | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | HF | Standard | 11 - 3 | - | - | 11 - 1 | - | - | 10 - 9 | - | - | 10 - 4 | - | - |
| | SP | SS | 12 - 10 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 2 | 20-0† |
| | SP | No.1 | 12 - 4 | 19 - 5 | 20-0† | 12 - 3 | 19 - 5 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 5 | 20-0† |
| | SP | No.2 | 11 - 10 | 18 - 7 | 20-0† | 11 - 9 | 18 - 7 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SP | No.3 | 11 - 6 | 18 - 2 | 20-0† | 11 - 5 | 18 - 2 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | SP | Stud | 11 - 6 | 18 - 2 | 20-0† | 11 - 5 | 18 - 2 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | SP | Standard | 11 - 3 | - | - | 11 - 1 | - | - | 10 - 9 | - | - | 10 - 4 | - | - |
| | SPF | SS | 12 - 1 | 19 - 0 | 20-0† | 12 - 0 | 19 - 0 | 20-0† | 11 - 7 | 18 - 7 | 20-0† | 11 - 2 | 18 - 0 | 20-0† |
| | SPF | No.1 | 11 - 10 | 18 - 7 | 20-0† | 11 - 9 | 18 - 7 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SPF | No.2 | 11 - 10 | 18 - 7 | 20-0† | 11 - 9 | 18 - 7 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SPF | No.3/Stud | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | SPF | Standard | 11 - 3 | - | - | 11 - 1 | - | - | 10 - 9 | - | - | 10 - 4 | - | - |
| 16 | DFL | SS | 11 - 11 | 18 - 8 | 20-0† | 11 - 9 | 18 - 8 | 20-0† | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 8 | 20-0† |
| | DFL | No.1 | 11 - 6 | 18 - 0 | 20-0† | 11 - 4 | 18 - 0 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 17 - 0 | 20-0† |
| | DFL | No.2 | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | DFL | No.3/Stud | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | DFL | Standard | 10 - 9 | - | - | 10 - 7 | - | - | 10 - 3 | - | - | 9 - 11 | - | - |
| | HF | SS | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | HF | No.1 | 11 - 0 | 17 - 3 | 20-0† | 10 - 10 | 17 - 3 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 3 | 20-0† |
| | HF | No.2 | 10 - 6 | 16 - 6 | 20-0† | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 6 | 20-0† |
| | HF | No.3/Stud | 10 - 2 | 16 - 0 | 20-0† | 10 - 1 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | HF | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 8 | - | - | 9 - 4 | - | - |
| | SP | SS | 11 - 8 | 18 - 4 | 20-0† | 11 - 7 | 18 - 4 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 4 | 20-0† |
| | SP | No.1 | 11 - 3 | 17 - 8 | 20-0† | 11 - 1 | 17 - 8 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† |
| | SP | No.2 | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | SP | No.3 | 10 - 6 | 16 - 6 | 20-0† | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 6 | 20-0† |
| | SP | Stud | 10 - 6 | 16 - 6 | 20-0† | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 6 | 20-0† |
| | SP | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 8 | - | - | 9 - 4 | - | - |
| | SPF | SS | 11 - 0 | 17 - 3 | 20-0† | 10 - 10 | 17 - 3 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 3 | 20-0† |
| | SPF | No.1 | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | SPF | No.2 | 10 - 9 | 16 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 10 | 20-0† |
| | SPF | No.3/Stud | 10 - 2 | 16 - 0 | 20-0† | 10 - 1 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | SPF | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 8 | - | - | 9 - 4 | - | - |
| 24 | DFL | SS | 10 - 5 | 16 - 4 | 20-0† | 10 - 3 | 16 - 4 | 20-0† | 9 - 11 | 15 - 10 | 20-0† | 9 - 7 | 15 - 4 | 20-0† |
| | DFL | No.1 | 10 - 0 | 15 - 9 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 |
| | DFL | No.2 | 9 - 10 | 15 - 5 | 20-0† | 9 - 8 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 3 |
| | DFL | No.3/Stud | 9 - 5 | 14 - 9 | 19 - 5 | 9 - 2 | 14 - 9 | 19 - 5 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 7 | 13 - 9 | 18 - 5 |
| | DFL | Standard | 9 - 5 | - | - | 9 - 2 | - | - | 8 - 11 | - | - | 8 - 7 | - | - |
| | HF | SS | 9 - 10 | 15 - 5 | 20-0† | 9 - 8 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 3 |
| | HF | No.1 | 9 - 7 | 15 - 1 | 19 - 11 | 9 - 5 | 15 - 1 | 19 - 11 | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 10 | 14 - 1 | 18 - 10 |
| | HF | No.2 | 9 - 2 | 14 - 5 | 19 - 0 | 9 - 0 | 14 - 5 | 19 - 0 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 4 | 13 - 5 | 17 - 11 |
| | HF | No.3/Stud | 8 - 11 | 14 - 0 | 18 - 6 | 8 - 9 | 14 - 0 | 18 - 6 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 2 | 13 - 1 | 17 - 5 |
| | HF | Standard | 8 - 11 | - | - | 8 - 9 | - | - | 8 - 5 | - | - | 8 - 2 | - | - |
| | SP | SS | 10 - 2 | 16 - 0 | 20-0† | 10 - 1 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | SP | No.1 | 9 - 10 | 15 - 5 | 20-0† | 9 - 8 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 3 |
| | SP | No.2 | 9 - 5 | 14 - 9 | 19 - 5 | 9 - 2 | 14 - 9 | 19 - 5 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 7 | 13 - 9 | 18 - 5 |
| | SP | No.3 | 9 - 2 | 14 - 5 | 19 - 0 | 9 - 0 | 14 - 5 | 19 - 0 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 4 | 13 - 5 | 17 - 11 |
| | SP | Stud | 9 - 2 | 14 - 5 | 19 - 0 | 9 - 0 | 14 - 5 | 19 - 0 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 4 | 13 - 5 | 17 - 11 |
| | SP | Standard | 8 - 11 | - | - | 8 - 9 | - | - | 8 - 5 | - | - | 8 - 2 | - | - |
| | SPF | SS | 9 - 7 | 15 - 1 | 19 - 11 | 9 - 5 | 15 - 1 | 19 - 11 | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 10 | 14 - 1 | 18 - 10 |
| | SPF | No.1 | 9 - 5 | 14 - 9 | 19 - 5 | 9 - 2 | 14 - 9 | 19 - 5 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 7 | 13 - 9 | 18 - 5 |
| | SPF | No.2 | 9 - 5 | 14 - 9 | 19 - 5 | 9 - 2 | 14 - 9 | 19 - 5 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 7 | 13 - 9 | 18 - 5 |
| | SPF | No.3/Stud | 8 - 11 | 14 - 0 | 18 - 6 | 8 - 9 | 14 - 0 | 18 - 6 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 2 | 13 - 1 | 17 - 5 |
| | SPF | Standard | 8 - 11 | - | - | 8 - 9 | - | - | 8 - 5 | - | - | 8 - 2 | - | - |

See Table 3.20A footnotes.

## Table 3.20A3 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

**Exposure B**
**H/360**

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 11 - 9 | 18 - 11 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 1 | 17 - 9 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 9 - 11 | 16 - 0 | 20-0† |
| | DFL | No.1 | 11 - 4 | 18 - 2 | 20-0† | 11 - 0 | 17 - 7 | 20-0† | 10 - 8 | 17 - 1 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 4 | 20-0† |
| | DFL | No.2 | 11 - 1 | 17 - 10 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 10 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | DFL | No.3/Stud | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | DFL | Standard | 10 - 7 | - | - | 10 - 3 | - | - | 9 - 11 | - | - | 9 - 5 | - | - | 8 - 11 | - | - |
| | HF | SS | 11 - 1 | 17 - 10 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 10 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | HF | No.1 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 |
| | HF | No.2 | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 0 | 18 - 8 |
| | HF | No.3/Stud | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | HF | Standard | 10 - 0 | - | - | 9 - 9 | - | - | 9 - 5 | - | - | 8 - 11 | - | - | 8 - 6 | - | - |
| | SP | SS | 11 - 7 | 18 - 6 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SP | No.1 | 11 - 1 | 17 - 10 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 10 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† |
| | SP | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SP | No.3 | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 0 | 18 - 8 |
| | SP | Stud | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 0 | 18 - 8 |
| | SP | Standard | 10 - 0 | - | - | 9 - 9 | - | - | 9 - 5 | - | - | 8 - 11 | - | - | 8 - 6 | - | - |
| | SPF | SS | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 |
| | SPF | No.1 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SPF | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | SPF | No.3/Stud | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | SPF | Standard | 10 - 0 | - | - | 9 - 9 | - | - | 9 - 5 | - | - | 8 - 11 | - | - | 8 - 6 | - | - |
| 16 | DFL | SS | 10 - 8 | 17 - 1 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 1 | 20-0† | 9 - 6 | 15 - 2 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 |
| | DFL | No.1 | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 8 | 13 - 11 | 18 - 7 |
| | DFL | No.2 | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | DFL | No.3/Stud | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | DFL | Standard | 9 - 7 | - | - | 9 - 3 | - | - | 9 - 0 | - | - | 8 - 6 | - | - | 8 - 1 | - | - |
| | HF | SS | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | HF | No.1 | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 3 | 14 - 10 | 19 - 9 | 8 - 9 | 14 - 0 | 18 - 8 | 8 - 3 | 13 - 4 | 17 - 9 |
| | HF | No.2 | 9 - 4 | 15 - 0 | 20 - 0 | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 9 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 8 | 16 - 11 |
| | HF | No.3/Stud | 9 - 1 | 14 - 7 | 19 - 5 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 4 | 16 - 5 |
| | HF | Standard | 9 - 1 | - | - | 8 - 10 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |
| | SP | SS | 10 - 5 | 16 - 9 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SP | No.1 | 10 - 0 | 16 - 1 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 7 | 18 - 2 |
| | SP | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | SP | No.3 | 9 - 4 | 15 - 0 | 20 - 0 | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 9 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 8 | 16 - 11 |
| | SP | Stud | 9 - 4 | 15 - 0 | 20 - 0 | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 9 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 8 | 16 - 11 |
| | SP | Standard | 9 - 1 | - | - | 8 - 10 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |
| | SPF | SS | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 3 | 14 - 10 | 19 - 9 | 8 - 9 | 14 - 0 | 18 - 8 | 8 - 3 | 13 - 4 | 17 - 9 |
| | SPF | No.1 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | SPF | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 5 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | SPF | No.3/Stud | 9 - 1 | 14 - 7 | 19 - 5 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 4 | 16 - 5 |
| | SPF | Standard | 9 - 1 | - | - | 8 - 10 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |
| 24 | DFL | SS | 9 - 3 | 14 - 10 | 19 - 10 | 9 - 0 | 14 - 5 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 8 | 8 - 3 | 13 - 2 | 17 - 8 | 7 - 10 | 12 - 6 | 16 - 9 |
| | DFL | No.1 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 7 | 13 - 10 | 18 - 6 | 8 - 4 | 13 - 5 | 17 - 11 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 1 | 16 - 1 |
| | DFL | No.2 | 8 - 8 | 14 - 0 | 18 - 8 | 8 - 5 | 13 - 6 | 18 - 1 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 9 |
| | DFL | No.3/Stud | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 15 - 1 |
| | DFL | Standard | 8 - 4 | - | - | 8 - 1 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 8 | 14 - 0 | 18 - 8 | 8 - 5 | 13 - 6 | 18 - 1 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 9 |
| | HF | No.1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 8 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 2 | 16 - 3 | - | 11 - 6 | 15 - 5 |
| | HF | No.2 | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 | - | 11 - 0 | 14 - 8 |
| | HF | No.3/Stud | 7 - 11 | 12 - 8 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 11 | 15 - 11 | - | 11 - 3 | 15 - 0 | - | 10 - 8 | 14 - 3 |
| | HF | Standard | 7 - 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 1 | 14 - 7 | 19 - 5 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 4 | 16 - 5 |
| | SP | No.1 | 8 - 8 | 14 - 0 | 18 - 8 | 8 - 5 | 13 - 6 | 18 - 1 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 9 |
| | SP | No.2 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 15 - 1 |
| | SP | No.3 | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 | - | 11 - 0 | 14 - 3 |
| | SP | Stud | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 | - | 11 - 0 | 14 - 3 |
| | SP | Standard | 7 - 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 8 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 2 | 16 - 3 | - | 11 - 6 | 15 - 5 |
| | SPF | No.1 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 15 - 1 |
| | SPF | No.2 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 15 - 1 |
| | SPF | No.3/Stud | 7 - 11 | 12 - 8 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 11 | 15 - 11 | - | 11 - 3 | 15 - 0 | - | 10 - 8 | 14 - 3 |
| | SPF | Standard | 7 - 11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A3 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

# Exposure B H/360

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 9 - 6 | 15 - 3 | 20-0† | 9 - 1 | 14 - 6 | 19 - 5 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 4 | 13 - 5 | 17 - 11 | 7 - 11 | 12 - 8 | 16 - 11 |
| | DFL | No.1 | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 9 | 14 - 0 | 18 - 8 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 11 | 17 - 2 | - | 12 - 2 | 16 - 3 |
| | DFL | No.2 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 10 | 12 - 7 | 16 - 10 | - | 11 - 11 | 15 - 11 |
| | DFL | No.3/Stud | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 0 | 16 - 1 | - | 11 - 5 | 15 - 2 |
| | DFL | Standard | 8 - 6 | - | - | 8 - 2 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 10 | 12 - 7 | 16 - 10 | - | 11 - 11 | 15 - 11 |
| | HF | No.1 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 6 | - | 11 - 8 | 15 - 7 |
| | HF | No.2 | 8 - 4 | 13 - 4 | 17 - 10 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 3 | 16 - 4 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 |
| | HF | No.3/Stud | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | HF | Standard | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 9 | 12 - 5 | 16 - 7 |
| | SP | No.1 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 6 | 13 - 8 | 18 - 4 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 10 | 12 - 7 | 16 - 10 | - | 11 - 11 | 15 - 11 |
| | SP | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 0 | 16 - 1 | - | 11 - 5 | 15 - 2 |
| | SP | No.3 | 8 - 4 | 13 - 4 | 17 - 10 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 3 | 16 - 4 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 6 |
| | SP | Stud | 8 - 4 | 13 - 4 | 17 - 10 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 3 | 16 - 4 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 6 |
| | SP | Standard | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 6 | - | 11 - 8 | 15 - 7 |
| | SPF | No.1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 0 | 16 - 1 | - | 11 - 5 | 15 - 2 |
| | SPF | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 0 | 16 - 1 | - | 11 - 5 | 15 - 2 |
| | SPF | No.3/Stud | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | SPF | Standard | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 2 | 13 - 2 | 17 - 7 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 1 | 16 - 2 | - | 11 - 5 | 15 - 4 |
| | DFL | No.1 | 8 - 3 | 13 - 3 | 17 - 8 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 2 | 16 - 2 | - | 11 - 8 | 15 - 7 | - | 11 - 0 | 14 - 9 |
| | DFL | No.2 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | DFL | No.3/Stud | - | 12 - 4 | 16 - 6 | - | 11 - 10 | 15 - 9 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 8 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | HF | No.1 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 1 | 16 - 2 | - | 11 - 7 | 15 - 6 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 1 |
| | HF | No.2 | - | 12 - 1 | 16 - 1 | - | 11 - 6 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 0 | 13 - 5 |
| | HF | No.3/Stud | - | 11 - 9 | 15 - 8 | - | 11 - 2 | 15 - 0 | - | 10 - 9 | 14 - 4 | - | 10 - 4 | 13 - 9 | - | 9 - 9 | 13 - 0 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 12 - 11 | 17 - 3 | - | 12 - 4 | 16 - 6 | - | 11 - 11 | 15 - 11 | - | 11 - 3 | 15 - 0 |
| | SP | No.1 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 5 | 16 - 7 | - | 11 - 10 | 15 - 10 | - | 11 - 5 | 15 - 3 | - | 10 - 9 | 14 - 5 |
| | SP | No.2 | - | 12 - 4 | 16 - 6 | - | 11 - 10 | 15 - 9 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 9 |
| | SP | No.3 | - | 12 - 1 | 16 - 1 | - | 11 - 6 | 15 - 4 | - | 11 - 1 | 14 - 4 | - | 10 - 7 | 13 - 6 | - | 9 - 8 | 12 - 5 |
| | SP | Stud | - | 12 - 1 | 16 - 1 | - | 11 - 6 | 15 - 4 | - | 11 - 1 | 14 - 4 | - | 10 - 7 | 13 - 6 | - | 9 - 8 | 12 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 1 | 16 - 2 | - | 11 - 7 | 15 - 6 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 1 |
| | SPF | No.1 | - | 12 - 4 | 16 - 6 | - | 11 - 10 | 15 - 9 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 9 |
| | SPF | No.2 | - | 12 - 4 | 16 - 6 | - | 11 - 10 | 15 - 9 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 9 |
| | SPF | No.3/Stud | - | 11 - 9 | 15 - 8 | - | 11 - 2 | 15 - 0 | - | 10 - 9 | 14 - 4 | - | 10 - 4 | 13 - 9 | - | 9 - 9 | 13 - 0 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | - | 11 - 11 | 15 - 11 | - | 11 - 5 | 15 - 3 | - | 10 - 11 | 14 - 7 | - | 10 - 6 | 14 - 1 | - | 9 - 11 | 13 - 3 |
| | DFL | No.1 | - | 11 - 6 | 15 - 4 | - | 11 - 0 | 14 - 8 | - | 10 - 6 | 14 - 1 | - | 10 - 1 | 13 - 6 | - | 9 - 7 | 12 - 9 |
| | DFL | No.2 | - | 11 - 3 | 15 - 0 | - | 10 - 9 | 14 - 4 | - | 10 - 4 | 13 - 9 | - | 9 - 11 | 13 - 3 | - | 9 - 4 | 12 - 6 |
| | DFL | No.3/Stud | - | 10 - 9 | 14 - 4 | - | 10 - 3 | 13 - 7 | - | 9 - 10 | 12 - 9 | - | 9 - 4 | 12 - 0 | - | 8 - 7 | 11 - 0 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | - | 11 - 3 | 15 - 0 | - | 10 - 9 | 14 - 4 | - | 10 - 4 | 13 - 9 | - | 9 - 11 | 13 - 3 | - | 9 - 4 | 12 - 6 |
| | HF | No.1 | - | 11 - 0 | 14 - 8 | - | 10 - 6 | 14 - 0 | - | 10 - 1 | 13 - 5 | - | 9 - 8 | 12 - 11 | - | 9 - 2 | 12 - 3 |
| | HF | No.2 | - | 10 - 6 | 14 - 0 | - | 10 - 0 | 13 - 4 | - | 9 - 7 | 12 - 10 | - | 9 - 3 | 12 - 4 | - | 8 - 9 | 11 - 8 |
| | HF | No.3/Stud | - | 10 - 2 | 13 - 7 | - | 9 - 9 | 13 - 0 | - | 9 - 4 | 12 - 5 | - | 9 - 0 | 11 - 8 | - | 8 - 4 | 10 - 9 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | - | 11 - 9 | 15 - 8 | - | 11 - 2 | 15 - 0 | - | 10 - 9 | 14 - 4 | - | 10 - 4 | 13 - 9 | - | 9 - 9 | 13 - 0 |
| | SP | No.1 | - | 11 - 3 | 15 - 0 | - | 10 - 9 | 14 - 4 | - | 10 - 4 | 13 - 9 | - | 9 - 11 | 13 - 3 | - | 9 - 4 | 12 - 6 |
| | SP | No.2 | - | 10 - 9 | 14 - 4 | - | 10 - 3 | 13 - 8 | - | 9 - 10 | 13 - 2 | - | 9 - 5 | 12 - 7 | - | 8 - 11 | 11 - 11 |
| | SP | No.3 | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 4 | - | 9 - 0 | 11 - 7 | - | 8 - 6 | 10 - 10 | - | 7 - 10 | 10 - 0 |
| | SP | Stud | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 4 | - | 9 - 0 | 11 - 7 | - | 8 - 6 | 10 - 10 | - | 7 - 10 | 10 - 0 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | - | 11 - 0 | 14 - 8 | - | 10 - 6 | 14 - 0 | - | 10 - 1 | 13 - 5 | - | 9 - 8 | 12 - 11 | - | 9 - 2 | 12 - 3 |
| | SPF | No.1 | - | 10 - 9 | 14 - 4 | - | 10 - 3 | 13 - 8 | - | 9 - 10 | 13 - 2 | - | 9 - 5 | 12 - 7 | - | 8 - 11 | 11 - 11 |
| | SPF | No.2 | - | 10 - 9 | 14 - 4 | - | 10 - 3 | 13 - 8 | - | 9 - 10 | 13 - 2 | - | 9 - 5 | 12 - 7 | - | 8 - 11 | 11 - 11 |
| | SPF | No.3/Stud | - | 10 - 2 | 13 - 7 | - | 9 - 9 | 13 - 0 | - | 9 - 4 | 12 - 5 | - | 9 - 0 | 11 - 8 | - | 8 - 4 | 10 - 9 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A4 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

**Exposure C H/180**

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 20-0† | 20-0† | 12 - 5 | 19 - 11 | 20-0† |
| | DFL | Standard | 13 - 4 | - | - | 12 - 7 | - | - | 11 - 11 | - | - | 11 - 4 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† |
| | HF | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 6 | 20-0† | 20-0† | 12 - 1 | 19 - 5 | 20-0† |
| | HF | No.3/Stud | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | HF | Standard | 13 - 1 | - | - | 12 - 4 | - | - | 11 - 8 | - | - | 11 - 1 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† |
| | SP | No.2 | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 20-0† | 20-0† | 12 - 5 | 19 - 11 | 20-0† |
| | SP | No.3 | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 1 | 18 - 5 | 20-0† |
| | SP | Stud | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 1 | 18 - 5 | 20-0† |
| | SP | Standard | 12 - 1 | - | - | 11 - 5 | - | - | 10 - 9 | - | - | 10 - 3 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† |
| | SPF | No.1 | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 20-0† | 20-0† | 12 - 5 | 19 - 11 | 20-0† |
| | SPF | No.2 | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 20-0† | 20-0† | 12 - 5 | 19 - 11 | 20-0† |
| | SPF | No.3/Stud | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | SPF | Standard | 13 - 1 | - | - | 12 - 4 | - | - | 11 - 8 | - | - | 11 - 1 | - | - |
| 16 | DFL | SS | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 6 | 20-0† | 20-0† |
| | DFL | No.1 | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 5 | 19 - 11 | 20-0† | 12 - 0 | 19 - 3 | 20-0† |
| | DFL | No.2 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | DFL | No.3/Stud | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 3 | 20-0† | 11 - 7 | 18 - 3 | 20-0† | 11 - 3 | 17 - 3 | 20-0† |
| | DFL | Standard | 11 - 5 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 9 | - | - |
| | HF | SS | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | HF | No.1 | 12 - 10 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† |
| | HF | No.2 | 12 - 2 | 19 - 7 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | HF | No.3/Stud | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 16 - 10 | 20-0† |
| | HF | Standard | 11 - 2 | - | - | 10 - 7 | - | - | 10 - 0 | - | - | 9 - 6 | - | - |
| | SP | SS | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† |
| | SP | No.1 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | SP | No.2 | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 4 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† |
| | SP | No.3 | 12 - 2 | 18 - 7 | 20-0† | 11 - 7 | 17 - 7 | 20-0† | 10 - 11 | 16 - 7 | 20-0† | 10 - 4 | 15 - 9 | 20-0† |
| | SP | Stud | 12 - 2 | 18 - 7 | 20-0† | 11 - 7 | 17 - 7 | 20-0† | 10 - 11 | 16 - 7 | 20-0† | 10 - 4 | 15 - 9 | 20-0† |
| | SP | Standard | 10 - 4 | - | - | 9 - 9 | - | - | 9 - 3 | - | - | 8 - 9 | - | - |
| | SPF | SS | 12 - 10 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† |
| | SPF | No.1 | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 4 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† |
| | SPF | No.2 | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 4 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† |
| | SPF | No.3/Stud | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 16 - 10 | 20-0† |
| | SPF | Standard | 11 - 2 | - | - | 10 - 7 | - | - | 10 - 0 | - | - | 9 - 6 | - | - |
| 24 | DFL | SS | 12 - 1 | 19 - 5 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† |
| | DFL | No.1 | 11 - 7 | 18 - 8 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 4 | 20-0† | 10 - 5 | 16 - 9 | 20-0† |
| | DFL | No.2 | 11 - 4 | 18 - 3 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | DFL | No.3/Stud | 10 - 10 | 16 - 5 | 20-0† | 10 - 4 | 15 - 6 | 20 - 0 | 9 - 9 | 14 - 8 | 18 - 11 | 9 - 3 | 13 - 11 | 17 - 11 |
| | DFL | Standard | 9 - 3 | - | - | 8 - 8 | - | - | 8 - 3 | - | - | 7 - 10 | - | - |
| | HF | SS | 11 - 4 | 18 - 3 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | HF | No.1 | 11 - 1 | 17 - 10 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† |
| | HF | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† |
| | HF | No.3/Stud | 10 - 3 | 16 - 0 | 20-0† | 9 - 11 | 15 - 1 | 19 - 5 | 9 - 6 | 14 - 3 | 18 - 5 | 9 - 0 | 13 - 7 | 17 - 5 |
| | HF | Standard | 9 - 0 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |
| | SP | SS | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | SP | No.1 | 11 - 4 | 18 - 3 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | SP | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SP | No.3 | 9 - 10 | 15 - 0 | 19 - 2 | 9 - 4 | 14 - 1 | 18 - 1 | 8 - 10 | 13 - 4 | 17 - 1 | 8 - 4 | 12 - 8 | 16 - 3 |
| | SP | Stud | 9 - 10 | 15 - 0 | 19 - 2 | 9 - 4 | 14 - 1 | 18 - 1 | 8 - 10 | 13 - 4 | 17 - 1 | 8 - 4 | 12 - 8 | 16 - 3 |
| | SP | Standard | 8 - 4 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | SPF | SS | 11 - 1 | 17 - 10 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† |
| | SPF | No.1 | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SPF | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SPF | No.3/Stud | 10 - 3 | 16 - 0 | 20-0† | 9 - 11 | 15 - 1 | 19 - 5 | 9 - 6 | 14 - 3 | 18 - 5 | 9 - 0 | 13 - 7 | 17 - 5 |
| | SPF | Standard | 9 - 0 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A4 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

# Exposure C H/180

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 11 - 11 | 19 - 1 | 20-0† | 11 - 4 | 18 - 2 | 20-0† |
| | DFL | No.1 | 12 - 10 | 20-0† | 20-0† | 12 - 6 | 20-0† | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 10 - 10 | 17 - 5 | 20-0† |
| | DFL | No.2 | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | DFL | No.3/Stud | 12 - 0 | 19 - 2 | 20-0† | 11 - 8 | 18 - 4 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 8 | 16 - 0 | 20-0† | 9 - 10 | 14 - 10 | 19 - 1 |
| | DFL | Standard | 10 - 9 | - | - | 10 - 3 | - | - | 9 - 10 | - | - | 9 - 0 | - | - | 8 - 4 | - | - |
| | HF | SS | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | HF | No.1 | 12 - 4 | 19 - 9 | 20-0† | 11 - 11 | 19 - 2 | 20-0† | 11 - 7 | 18 - 7 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 5 | 16 - 8 | 20-0† |
| | HF | No.2 | 11 - 8 | 18 - 10 | 20-0† | 11 - 4 | 18 - 3 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 9 - 11 | 15 - 11 | 20-0† |
| | HF | No.3/Stud | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 0 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 7 | 14 - 5 | 18 - 7 |
| | HF | Standard | 10 - 6 | - | - | 10 - 0 | - | - | 9 - 7 | - | - | 8 - 10 | - | - | 8 - 2 | - | - |
| | SP | SS | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 8 | 18 - 9 | 20-0† | 11 - 1 | 17 - 10 | 20-0† |
| | SP | No.1 | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 7 | 20-0† | 11 - 10 | 19 - 0 | 20-0† | 11 - 2 | 18 - 0 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | SP | No.2 | 12 - 0 | 19 - 3 | 20-0† | 11 - 8 | 18 - 8 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | SP | No.3 | 11 - 6 | 17 - 6 | 20-0† | 11 - 0 | 16 - 8 | 20-0† | 10 - 6 | 15 - 11 | 20-0† | 9 - 8 | 14 - 8 | 18 - 9 | 8 - 11 | 13 - 6 | 17 - 4 |
| | SP | Stud | 11 - 6 | 17 - 6 | 20-0† | 11 - 0 | 16 - 8 | 20-0† | 10 - 6 | 15 - 11 | 20-0† | 9 - 8 | 14 - 8 | 18 - 9 | 8 - 11 | 13 - 6 | 17 - 4 |
| | SP | Standard | 9 - 9 | - | - | 9 - 3 | - | - | 8 - 10 | - | - | 8 - 2 | - | - | - | - | - |
| | SPF | SS | 12 - 4 | 19 - 9 | 20-0† | 11 - 11 | 19 - 2 | 20-0† | 11 - 7 | 18 - 7 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 5 | 16 - 8 | 20-0† |
| | SPF | No.1 | 12 - 0 | 19 - 3 | 20-0† | 11 - 8 | 18 - 8 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | SPF | No.2 | 12 - 0 | 19 - 3 | 20-0† | 11 - 8 | 18 - 8 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | SPF | No.3/Stud | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 0 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 7 | 14 - 5 | 18 - 7 |
| | SPF | Standard | 10 - 6 | - | - | 10 - 0 | - | - | 9 - 7 | - | - | 8 - 10 | - | - | 8 - 2 | - | - |
| 16 | DFL | SS | 12 - 1 | 19 - 5 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 5 | 18 - 3 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | DFL | No.1 | 11 - 8 | 18 - 8 | 20-0† | 11 - 3 | 18 - 1 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 9 - 10 | 15 - 9 | 20-0† |
| | DFL | No.2 | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | DFL | No.3/Stud | 10 - 10 | 16 - 5 | 20-0† | 10 - 5 | 15 - 8 | 20-0† | 10 - 0 | 15 - 0 | 19 - 4 | 9 - 2 | 13 - 9 | 17 - 9 | 8 - 5 | 12 - 8 | 16 - 4 |
| | DFL | Standard | 9 - 3 | - | - | 8 - 10 | - | - | 8 - 5 | - | - | - | - | - | - | - | - |
| | HF | SS | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | HF | No.1 | 11 - 2 | 17 - 10 | 20-0† | 10 - 9 | 17 - 4 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 5 | 15 - 1 | 20-0† |
| | HF | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | HF | No.3/Stud | 10 - 4 | 16 - 0 | 20-0† | 10 - 0 | 15 - 3 | 19 - 8 | 9 - 8 | 14 - 7 | 18 - 10 | 8 - 11 | 13 - 5 | 17 - 3 | 8 - 3 | 12 - 4 | 15 - 11 |
| | HF | Standard | 9 - 0 | - | - | 8 - 7 | - | - | 8 - 3 | - | - | - | - | - | - | - | - |
| | SP | SS | 11 - 10 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 0 | 16 - 1 | 20-0† |
| | SP | No.1 | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | SP | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 |
| | SP | No.3 | 9 - 10 | 15 - 0 | 19 - 3 | 9 - 5 | 14 - 4 | 18 - 4 | 9 - 0 | 13 - 8 | 17 - 6 | 8 - 3 | 12 - 6 | 16 - 1 | - | 11 - 7 | 14 - 10 |
| | SP | Stud | 9 - 10 | 15 - 0 | 19 - 3 | 9 - 5 | 14 - 4 | 18 - 4 | 9 - 0 | 13 - 8 | 17 - 6 | 8 - 3 | 12 - 6 | 16 - 1 | - | 11 - 7 | 14 - 10 |
| | SP | Standard | 8 - 4 | - | - | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 11 - 2 | 17 - 10 | 20-0† | 10 - 9 | 17 - 4 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 5 | 15 - 1 | 20-0† |
| | SPF | No.1 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 |
| | SPF | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 |
| | SPF | No.3/Stud | 10 - 4 | 16 - 0 | 20-0† | 10 - 0 | 15 - 3 | 19 - 8 | 9 - 8 | 14 - 7 | 18 - 10 | 8 - 11 | 13 - 5 | 17 - 3 | 8 - 3 | 12 - 4 | 15 - 11 |
| | SPF | Standard | 9 - 0 | - | - | 8 - 7 | - | - | 8 - 3 | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 11 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 8 - 10 | 14 - 3 | 19 - 0 |
| | DFL | No.1 | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 6 | 13 - 8 | 18 - 3 |
| | DFL | No.2 | 9 - 11 | 15 - 10 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 5 | 17 - 7 |
| | DFL | No.3/Stud | 8 - 10 | 13 - 3 | 17 - 1 | 8 - 5 | 12 - 7 | 16 - 3 | 8 - 0 | 12 - 1 | 15 - 6 | - | 11 - 1 | 14 - 3 | - | 10 - 3 | 13 - 2 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 11 | 15 - 10 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 5 | 17 - 11 |
| | HF | No.1 | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 7 | 13 - 10 | 18 - 5 | 8 - 2 | 13 - 1 | 17 - 6 |
| | HF | No.2 | 9 - 2 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 4 | 19 - 1 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 9 | 12 - 6 | 16 - 8 |
| | HF | No.3/Stud | 8 - 7 | 12 - 11 | 16 - 7 | 8 - 2 | 12 - 3 | 15 - 10 | 7 - 10 | 11 - 9 | 15 - 2 | - | 10 - 9 | 13 - 11 | - | 9 - 11 | 12 - 10 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 | 8 - 8 | 14 - 0 | 18 - 8 |
| | SP | No.1 | 9 - 11 | 15 - 10 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 5 | 17 - 11 |
| | SP | No.2 | 9 - 5 | 15 - 2 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 5 | 13 - 6 | 17 - 6 | 8 - 0 | 12 - 6 | 16 - 2 |
| | SP | No.3 | 7 - 11 | 12 - 1 | 15 - 5 | - | 11 - 6 | 14 - 9 | - | 11 - 0 | 14 - 1 | - | 10 - 1 | 12 - 11 | - | 9 - 4 | 11 - 11 |
| | SP | Stud | 7 - 11 | 12 - 1 | 15 - 5 | - | 11 - 6 | 14 - 9 | - | 11 - 0 | 14 - 1 | - | 10 - 1 | 12 - 11 | - | 9 - 4 | 11 - 11 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 7 | 13 - 10 | 18 - 5 | 8 - 2 | 13 - 1 | 17 - 6 |
| | SPF | No.1 | 9 - 5 | 15 - 2 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 10 | 17 - 1 |
| | SPF | No.2 | 9 - 5 | 15 - 2 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 10 | 17 - 1 |
| | SPF | No.3/Stud | 8 - 7 | 12 - 11 | 16 - 7 | 8 - 2 | 12 - 3 | 15 - 10 | 7 - 10 | 11 - 9 | 15 - 2 | - | 10 - 9 | 13 - 11 | - | 9 - 11 | 12 - 10 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A4 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

# Exposure C H/180

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 10 - 9 | 17 - 3 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 10 | 15 - 10 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 |
| | DFL | No.1 | 10 - 4 | 16 - 7 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 8 | 13 - 10 | 18 - 6 |
| | DFL | No.2 | 10 - 2 | 16 - 3 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 5 | 13 - 7 | 17 - 10 |
| | DFL | No.3/Stud | 9 - 2 | 13 - 9 | 17 - 9 | 8 - 7 | 12 - 10 | 16 - 6 | 8 - 0 | 12 - 0 | 15 - 6 | - | 11 - 4 | 14 - 7 | - | 10 - 5 | 13 - 5 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 2 | 16 - 3 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 5 | 13 - 7 | 18 - 1 |
| | HF | No.1 | 9 - 11 | 15 - 11 | 20-0† | 9 - 6 | 15 - 2 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 3 | 13 - 3 | 17 - 8 |
| | HF | No.2 | 9 - 5 | 15 - 2 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 4 | 13 - 4 | 17 - 10 | 7 - 10 | 12 - 7 | 16 - 10 |
| | HF | No.3/Stud | 8 - 11 | 13 - 5 | 17 - 3 | 8 - 4 | 12 - 6 | 16 - 1 | 7 - 10 | 11 - 9 | 15 - 1 | - | 11 - 0 | 14 - 2 | - | 10 - 1 | 13 - 0 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 7 | 16 - 11 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 1 | 18 - 10 |
| | SP | No.1 | 10 - 2 | 16 - 3 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 5 | 13 - 7 | 18 - 1 |
| | SP | No.2 | 9 - 8 | 15 - 6 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 10 | 14 - 3 | 19 - 0 | 8 - 6 | 13 - 8 | 17 - 11 | 8 - 1 | 12 - 9 | 16 - 5 |
| | SP | No.3 | 8 - 3 | 12 - 7 | 16 - 1 | - | 11 - 9 | 15 - 0 | - | 11 - 0 | 14 - 1 | - | 10 - 4 | 13 - 3 | - | 9 - 6 | 12 - 2 |
| | SP | Stud | 8 - 3 | 12 - 7 | 16 - 1 | - | 11 - 9 | 15 - 0 | - | 11 - 0 | 14 - 1 | - | 10 - 4 | 13 - 3 | - | 9 - 6 | 12 - 2 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 11 | 15 - 11 | 20-0† | 9 - 6 | 15 - 2 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 3 | 13 - 3 | 17 - 8 |
| | SPF | No.1 | 9 - 8 | 15 - 6 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 10 | 14 - 3 | 19 - 0 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 12 - 11 | 17 - 3 |
| | SPF | No.2 | 9 - 8 | 15 - 6 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 10 | 14 - 3 | 19 - 0 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 12 - 11 | 17 - 3 |
| | SPF | No.3/Stud | 8 - 11 | 13 - 5 | 17 - 3 | 8 - 4 | 12 - 6 | 16 - 1 | 7 - 10 | 11 - 9 | 15 - 1 | - | 11 - 0 | 14 - 2 | - | 10 - 1 | 13 - 0 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 9 - 9 | 15 - 8 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 1 | 13 - 0 | 17 - 5 |
| | DFL | No.1 | 9 - 4 | 15 - 0 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 3 | 13 - 3 | 17 - 8 | 7 - 10 | 12 - 6 | 16 - 2 |
| | DFL | No.2 | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 17 - 9 | 8 - 1 | 12 - 11 | 16 - 8 | - | 11 - 11 | 15 - 4 |
| | DFL | No.3/Stud | 7 - 10 | 11 - 10 | 15 - 2 | - | 11 - 0 | 14 - 2 | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 6 | - | 8 - 11 | 11 - 6 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 3 | 16 - 4 |
| | HF | No.1 | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 7 | 13 - 9 | 18 - 4 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 0 | 16 - 0 |
| | HF | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 6 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 1 | 16 - 1 | - | 11 - 5 | 14 - 10 |
| | HF | No.3/Stud | - | 11 - 6 | 14 - 10 | - | 10 - 9 | 13 - 10 | - | 10 - 1 | 12 - 11 | - | 9 - 5 | 12 - 2 | - | 8 - 8 | 11 - 2 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 7 | 15 - 4 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 |
| | SP | No.1 | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 3 | 16 - 4 |
| | SP | No.2 | 8 - 9 | 14 - 1 | 18 - 8 | 8 - 4 | 13 - 5 | 17 - 5 | 8 - 0 | 12 - 8 | 16 - 4 | - | 11 - 11 | 15 - 4 | - | 10 - 11 | 14 - 1 |
| | SP | No.3 | - | 10 - 9 | 13 - 9 | - | 10 - 0 | 12 - 10 | - | 9 - 5 | 12 - 1 | - | 8 - 10 | 11 - 4 | - | 8 - 2 | 10 - 5 |
| | SP | Stud | - | 10 - 9 | 13 - 9 | - | 10 - 0 | 12 - 10 | - | 9 - 5 | 12 - 1 | - | 8 - 10 | 11 - 4 | - | 8 - 2 | 10 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 7 | 13 - 9 | 18 - 4 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 0 | 16 - 0 |
| | SPF | No.1 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 5 | - | 11 - 8 | 15 - 1 |
| | SPF | No.2 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 5 | - | 11 - 8 | 15 - 1 |
| | SPF | No.3/Stud | - | 11 - 6 | 14 - 10 | - | 10 - 9 | 13 - 10 | - | 10 - 1 | 12 - 11 | - | 9 - 5 | 12 - 2 | - | 8 - 8 | 11 - 2 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 8 - 5 | 13 - 7 | 18 - 1 | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 11 | 15 - 11 | - | 11 - 4 | 15 - 1 |
| | DFL | No.1 | 8 - 2 | 13 - 1 | 17 - 3 | 7 - 9 | 12 - 6 | 16 - 1 | - | 11 - 9 | 15 - 1 | - | 11 - 0 | 14 - 2 | - | 10 - 1 | 13 - 0 |
| | DFL | No.2 | 8 - 0 | 12 - 8 | 16 - 4 | - | 11 - 10 | 15 - 3 | - | 11 - 1 | 14 - 3 | - | 10 - 5 | 13 - 5 | - | 9 - 7 | 12 - 4 |
| | DFL | No.3/Stud | - | 9 - 6 | 12 - 3 | - | 8 - 10 | 11 - 5 | - | 8 - 4 | 10 - 8 | - | 7 - 10 | 10 - 1 | - | - | 9 - 3 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 3 | 16 - 4 | - | 11 - 8 | 15 - 8 | - | 11 - 3 | 15 - 0 | - | 10 - 8 | 14 - 2 |
| | HF | No.1 | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 11 | 15 - 11 | - | 11 - 5 | 14 - 11 | - | 10 - 11 | 14 - 0 | - | 10 - 0 | 12 - 10 |
| | HF | No.2 | - | 11 - 11 | 15 - 10 | - | 11 - 4 | 14 - 9 | - | 10 - 9 | 13 - 10 | - | 10 - 1 | 13 - 0 | - | 9 - 3 | 11 - 11 |
| | HF | No.3/Stud | - | 9 - 3 | 11 - 11 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 0 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 |
| | SP | No.1 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 3 | 16 - 4 | - | 11 - 8 | 15 - 5 | - | 11 - 3 | 14 - 6 | - | 10 - 4 | 13 - 4 |
| | SP | No.2 | - | 11 - 8 | 15 - 0 | - | 10 - 10 | 14 - 0 | - | 10 - 2 | 13 - 2 | - | 9 - 7 | 12 - 4 | - | 8 - 10 | 11 - 4 |
| | SP | No.3 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 4 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 5 |
| | SP | Stud | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 4 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 11 | 15 - 11 | - | 11 - 5 | 15 - 3 | - | 11 - 0 | 14 - 8 | - | 10 - 5 | 13 - 11 |
| | SPF | No.1 | - | 12 - 2 | 16 - 1 | - | 11 - 8 | 15 - 0 | - | 10 - 11 | 14 - 1 | - | 10 - 3 | 13 - 3 | - | 9 - 5 | 12 - 2 |
| | SPF | No.2 | - | 12 - 2 | 16 - 1 | - | 11 - 8 | 15 - 0 | - | 10 - 11 | 14 - 1 | - | 10 - 3 | 13 - 3 | - | 9 - 5 | 12 - 2 |
| | SPF | No.3/Stud | - | 9 - 3 | 11 - 11 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 0 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A5 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

# Exposure C H/240

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 6 | 20-0† | 20-0† |
| | DFL | No.1 | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 5 | 20 - 0 | 20-0† | 12 - 0 | 19 - 3 | 20-0† |
| | DFL | No.2 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | DFL | No.3/Stud | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 4 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† |
| | DFL | Standard | 12 - 6 | - | - | 12 - 0 | - | - | 11 - 7 | - | - | 11 - 3 | - | - |
| | HF | SS | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | HF | No.1 | 12 - 10 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† |
| | HF | No.2 | 12 - 2 | 19 - 7 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | HF | No.3/Stud | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | HF | Standard | 11 - 10 | - | - | 11 - 5 | - | - | 11 - 0 | - | - | 10 - 8 | - | - |
| | SP | SS | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 20-0† | 20-0† | 12 - 3 | 19 - 8 | 20-0† |
| | SP | No.1 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 20-0† | 20-0† | 12 - 2 | 19 - 6 | 20-0† | 11 - 9 | 18 - 11 | 20-0† |
| | SP | No.2 | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 4 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† |
| | SP | No.3 | 12 - 2 | 19 - 7 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SP | Stud | 12 - 2 | 19 - 7 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 7 | 20-0† |
| | SP | Standard | 11 - 10 | - | - | 11 - 5 | - | - | 10 - 9 | - | - | 10 - 3 | - | - |
| | SPF | SS | 12 - 10 | 20-0† | 20-0† | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† |
| | SPF | No.1 | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 4 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† |
| | SPF | No.2 | 12 - 6 | 20-0† | 20-0† | 12 - 0 | 19 - 4 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† |
| | SPF | No.3/Stud | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | SPF | Standard | 11 - 10 | - | - | 11 - 5 | - | - | 11 - 0 | - | - | 10 - 8 | - | - |
| 16 | DFL | SS | 12 - 7 | 20-0† | 20-0† | 12 - 1 | 19 - 5 | 20-0† | 11 - 8 | 18 - 9 | 20-0† | 11 - 4 | 18 - 2 | 20-0† |
| | DFL | No.1 | 12 - 1 | 19 - 5 | 20-0† | 11 - 8 | 18 - 8 | 20-0† | 11 - 3 | 18 - 1 | 20-0† | 10 - 10 | 17 - 5 | 20-0† |
| | DFL | No.2 | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | DFL | No.3/Stud | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 6 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | DFL | Standard | 11 - 4 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 9 | - | - |
| | HF | SS | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | HF | No.1 | 11 - 7 | 18 - 7 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 8 | 20-0† |
| | HF | No.2 | 11 - 0 | 17 - 8 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 11 | 20-0† |
| | HF | No.3/Stud | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | HF | Standard | 10 - 9 | - | - | 10 - 4 | - | - | 10 - 0 | - | - | 9 - 6 | - | - |
| | SP | SS | 12 - 4 | 19 - 10 | 20-0† | 11 - 11 | 19 - 1 | 20-0† | 11 - 6 | 18 - 5 | 20-0† | 11 - 1 | 17 - 10 | 20-0† |
| | SP | No.1 | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | SP | No.2 | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 6 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | SP | No.3 | 11 - 0 | 17 - 8 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 9 | 20-0† |
| | SP | Stud | 11 - 0 | 17 - 8 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 11 | 15 - 9 | 20-0† |
| | SP | Standard | 10 - 4 | - | - | 9 - 9 | - | - | 9 - 3 | - | - | 8 - 9 | - | - |
| | SPF | SS | 11 - 7 | 18 - 7 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 8 | 20-0† |
| | SPF | No.1 | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 6 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | SPF | No.2 | 11 - 4 | 18 - 2 | 20-0† | 10 - 11 | 17 - 6 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† |
| | SPF | No.3/Stud | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | SPF | Standard | 10 - 9 | - | - | 10 - 4 | - | - | 9 - 11 | - | - | 9 - 6 | - | - |
| 24 | DFL | SS | 10 - 11 | 17 - 6 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 10 | 15 - 9 | 20-0† |
| | DFL | No.1 | 10 - 6 | 16 - 10 | 20-0† | 10 - 1 | 16 - 3 | 20-0† | 9 - 9 | 15 - 8 | 20-0† | 9 - 5 | 15 - 2 | 20-0† |
| | DFL | No.2 | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | DFL | No.3/Stud | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20 - 0 | 9 - 1 | 14 - 8 | 18 - 11 | 8 - 10 | 13 - 11 | 17 - 11 |
| | DFL | Standard | 9 - 3 | - | - | 8 - 8 | - | - | 8 - 3 | - | - | 7 - 10 | - | - |
| | HF | SS | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | HF | No.1 | 10 - 1 | 16 - 2 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 |
| | HF | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 7 | 13 - 9 | 18 - 5 |
| | HF | No.3/Stud | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 10 | 18 - 5 | 8 - 4 | 13 - 5 | 17 - 5 |
| | HF | Standard | 9 - 0 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |
| | SP | SS | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | SP | No.1 | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | SP | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SP | No.3 | 9 - 7 | 15 - 0 | 19 - 2 | 9 - 3 | 14 - 1 | 18 - 1 | 8 - 10 | 13 - 4 | 17 - 1 | 8 - 4 | 12 - 8 | 16 - 3 |
| | SP | Stud | 9 - 7 | 15 - 0 | 19 - 2 | 9 - 3 | 14 - 1 | 18 - 1 | 8 - 10 | 13 - 4 | 17 - 1 | 8 - 4 | 12 - 8 | 16 - 3 |
| | SP | Standard | 8 - 4 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 16 - 2 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 |
| | SPF | No.1 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SPF | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 10 | 18 - 5 | 8 - 4 | 13 - 5 | 17 - 5 |
| | SPF | Standard | 9 - 0 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A5 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

# Exposure C H/240

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 12 - 1 | 19 - 5 | 20-0† | 11 - 9 | 18 - 10 | 20-0† | 11 - 5 | 18 - 3 | 20-0† | 10 - 9 | 17 - 3 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | DFL | No.1 | 11 - 8 | 18 - 8 | 20-0† | 11 - 3 | 18 - 1 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 9 - 10 | 15 - 9 | 20-0† |
| | DFL | No.2 | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | DFL | No.3/Stud | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 9 | 19 - 1 |
| | DFL | Standard | 10 - 9 | - | - | 10 - 3 | - | - | 9 - 10 | - | - | 9 - 0 | - | - | 8 - 4 | - | - |
| | HF | SS | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | HF | No.1 | 11 - 2 | 17 - 10 | 20-0† | 10 - 9 | 17 - 4 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 5 | 15 - 1 | 20-0† |
| | HF | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 5 | 15 - 1 | 20-0† | 8 - 11 | 14 - 4 | 19 - 2 |
| | HF | No.3/Stud | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 | 8 - 8 | 14 - 0 | 18 - 7 |
| | HF | Standard | 10 - 4 | - | - | 10 - 0 | - | - | 9 - 7 | - | - | 8 - 10 | - | - | 8 - 2 | - | - |
| | SP | SS | 11 - 10 | 19 - 1 | 20-0† | 11 - 6 | 18 - 6 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 0 | 16 - 1 | 20-0† |
| | SP | No.1 | 11 - 5 | 18 - 3 | 20-0† | 11 - 0 | 17 - 9 | 20-0† | 10 - 9 | 17 - 2 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | SP | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 |
| | SP | No.3 | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 10 - 0 | 15 - 11 | 20-0† | 9 - 5 | 14 - 8 | 18 - 9 | 8 - 11 | 13 - 6 | 17 - 4 |
| | SP | Stud | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 10 - 0 | 15 - 11 | 20-0† | 9 - 5 | 14 - 8 | 18 - 9 | 8 - 11 | 13 - 6 | 17 - 4 |
| | SP | Standard | 9 - 9 | - | - | 9 - 3 | - | - | 8 - 10 | - | - | 8 - 2 | - | - | - | - | - |
| | SPF | SS | 11 - 2 | 17 - 10 | 20-0† | 10 - 9 | 17 - 4 | 20-0† | 10 - 6 | 16 - 10 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 5 | 15 - 1 | 20-0† |
| | SPF | No.1 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 |
| | SPF | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 2 | 14 - 9 | 19 - 8 |
| | SPF | No.3/Stud | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 | 8 - 8 | 14 - 0 | 18 - 7 |
| | SPF | Standard | 10 - 4 | - | - | 10 - 0 | - | - | 9 - 7 | - | - | 8 - 10 | - | - | 8 - 2 | - | - |
| 16 | DFL | SS | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 17 - 0 | 20-0† | 10 - 3 | 16 - 6 | 20-0† | 9 - 9 | 15 - 7 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | DFL | No.1 | 10 - 6 | 16 - 11 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 8 - 11 | 14 - 3 | 19 - 1 |
| | DFL | No.2 | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 | 8 - 8 | 14 - 0 | 18 - 8 |
| | DFL | No.3/Stud | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 4 | 8 - 9 | 13 - 9 | 17 - 9 | 8 - 4 | 12 - 8 | 16 - 4 |
| | DFL | Standard | 9 - 3 | - | - | 8 - 10 | - | - | 8 - 5 | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 | 8 - 8 | 14 - 0 | 18 - 8 |
| | HF | No.1 | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† | 9 - 6 | 15 - 2 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 6 | 13 - 8 | 18 - 3 |
| | HF | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 6 | 19 - 4 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 1 | 13 - 0 | 17 - 4 |
| | HF | No.3/Stud | 9 - 4 | 14 - 11 | 20 - 0 | 9 - 0 | 14 - 6 | 19 - 4 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 4 | 17 - 3 | 7 - 11 | 12 - 4 | 15 - 11 |
| | HF | Standard | 9 - 0 | - | - | 8 - 7 | - | - | 8 - 3 | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 9 | 17 - 3 | 20-0† | 10 - 5 | 16 - 8 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 1 | 14 - 7 | 19 - 5 |
| | SP | No.1 | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 | 8 - 8 | 14 - 0 | 18 - 8 |
| | SP | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 4 | 13 - 4 | 17 - 10 |
| | SP | No.3 | 9 - 7 | 15 - 0 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 4 | 9 - 0 | 13 - 8 | 17 - 6 | 8 - 3 | 12 - 6 | 16 - 1 | - | 11 - 7 | 14 - 10 |
| | SP | Stud | 9 - 7 | 15 - 0 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 4 | 9 - 0 | 13 - 8 | 17 - 6 | 8 - 3 | 12 - 6 | 16 - 1 | - | 11 - 7 | 14 - 10 |
| | SP | Standard | 8 - 4 | - | - | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† | 9 - 6 | 15 - 2 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 6 | 13 - 8 | 18 - 3 |
| | SPF | No.1 | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 4 | 13 - 4 | 17 - 10 |
| | SPF | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 4 | 13 - 4 | 17 - 10 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 11 | 20 - 0 | 9 - 0 | 14 - 6 | 19 - 4 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 4 | 17 - 3 | 7 - 11 | 12 - 4 | 15 - 11 |
| | SPF | Standard | 9 - 0 | - | - | 8 - 7 | - | - | 8 - 3 | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 9 - 6 | 15 - 3 | 20-0† | 9 - 2 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 5 | 13 - 7 | 18 - 1 | 8 - 0 | 12 - 10 | 17 - 2 |
| | DFL | No.1 | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 19 - 0 | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 2 | 13 - 0 | 17 - 5 | - | 12 - 5 | 16 - 6 |
| | DFL | No.2 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | DFL | No.3/Stud | 8 - 6 | 13 - 3 | 17 - 1 | 8 - 3 | 12 - 7 | 16 - 3 | 8 - 0 | 12 - 1 | 15 - 6 | - | 11 - 1 | 14 - 3 | - | 10 - 3 | 13 - 2 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | HF | No.1 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 3 | 13 - 2 | 17 - 8 | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 10 | 15 - 10 |
| | HF | No.2 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 15 - 1 |
| | HF | No.3/Stud | 8 - 1 | 12 - 11 | 16 - 7 | 7 - 10 | 12 - 3 | 15 - 10 | - | 11 - 9 | 15 - 2 | - | 10 - 9 | 13 - 11 | - | 9 - 11 | 12 - 10 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 4 | 14 - 11 | 20 - 0 | 9 - 0 | 14 - 6 | 19 - 4 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 8 | 16 - 10 |
| | SP | No.1 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | SP | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 9 | 8 - 0 | 12 - 11 | 17 - 3 | - | 12 - 2 | 16 - 3 | - | 11 - 7 | 15 - 5 |
| | SP | No.3 | 7 - 11 | 12 - 1 | 15 - 5 | - | 11 - 6 | 14 - 9 | - | 11 - 0 | 14 - 1 | - | 10 - 1 | 12 - 11 | - | 9 - 4 | 11 - 11 |
| | SP | Stud | 7 - 11 | 12 - 1 | 15 - 5 | - | 11 - 6 | 14 - 9 | - | 11 - 0 | 14 - 1 | - | 10 - 1 | 12 - 11 | - | 9 - 4 | 11 - 11 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 3 | 13 - 2 | 17 - 8 | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 10 | 15 - 10 |
| | SPF | No.1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 9 | 8 - 0 | 12 - 11 | 17 - 3 | - | 12 - 2 | 16 - 3 | - | 11 - 7 | 15 - 5 |
| | SPF | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 9 | 8 - 0 | 12 - 11 | 17 - 3 | - | 12 - 2 | 16 - 3 | - | 11 - 7 | 15 - 5 |
| | SPF | No.3/Stud | 8 - 1 | 12 - 11 | 16 - 7 | 7 - 10 | 12 - 3 | 15 - 10 | - | 11 - 9 | 15 - 2 | - | 10 - 9 | 13 - 11 | - | 9 - 11 | 12 - 10 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A5 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

# Exposure C H/240

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 9 - 9 | 15 - 8 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 1 | 13 - 0 | 17 - 5 |
| | DFL | No.1 | 9 - 4 | 15 - 0 | 20-0† | 9 - 0 | 14 - 4 | 19 - 2 | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 3 | 13 - 3 | 17 - 8 | 7 - 10 | 12 - 6 | 16 - 9 |
| | DFL | No.2 | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 3 | 16 - 4 |
| | DFL | No.3/Stud | 8 - 9 | 13 - 9 | 17 - 9 | 8 - 4 | 12 - 10 | 16 - 6 | 8 - 0 | 12 - 0 | 15 - 6 | - | 11 - 4 | 14 - 7 | - | 10 - 5 | 13 - 5 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 3 | 16 - 4 |
| | HF | No.1 | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 7 | 13 - 9 | 18 - 4 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 0 | 16 - 0 |
| | HF | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 2 | 13 - 1 | 17 - 6 | 7 - 10 | 12 - 6 | 16 - 9 | - | 12 - 1 | 16 - 1 | - | 11 - 5 | 15 - 3 |
| | HF | No.3/Stud | 8 - 4 | 13 - 4 | 17 - 3 | 7 - 11 | 12 - 6 | 16 - 1 | - | 11 - 9 | 15 - 1 | - | 11 - 0 | 14 - 2 | - | 10 - 1 | 13 - 0 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 7 | 15 - 4 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 |
| | SP | No.1 | 9 - 2 | 14 - 9 | 19 - 8 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 12 - 11 | 17 - 4 | - | 12 - 3 | 16 - 4 |
| | SP | No.2 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 6 | - | 11 - 8 | 15 - 7 |
| | SP | No.3 | 8 - 3 | 12 - 7 | 16 - 1 | - | 11 - 9 | 15 - 0 | - | 11 - 0 | 14 - 1 | - | 10 - 4 | 13 - 3 | - | 9 - 6 | 12 - 2 |
| | SP | Stud | 8 - 3 | 12 - 7 | 16 - 1 | - | 11 - 9 | 15 - 0 | - | 11 - 0 | 14 - 1 | - | 10 - 4 | 13 - 3 | - | 9 - 6 | 12 - 2 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 7 | 13 - 9 | 18 - 4 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 16 - 11 | - | 12 - 0 | 16 - 0 |
| | SPF | No.1 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 6 | - | 11 - 8 | 15 - 7 |
| | SPF | No.2 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 5 | 17 - 11 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 4 | 16 - 6 | - | 11 - 8 | 15 - 7 |
| | SPF | No.3/Stud | 8 - 4 | 13 - 4 | 17 - 3 | 7 - 11 | 12 - 6 | 16 - 1 | - | 11 - 9 | 15 - 1 | - | 11 - 0 | 14 - 2 | - | 10 - 1 | 13 - 0 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 8 - 10 | 14 - 2 | 18 - 11 | 8 - 5 | 13 - 6 | 18 - 1 | 8 - 1 | 12 - 11 | 17 - 4 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 9 | 15 - 9 |
| | DFL | No.1 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 9 | 12 - 5 | 16 - 8 | - | 12 - 0 | 16 - 0 | - | 11 - 4 | 15 - 1 |
| | DFL | No.2 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 |
| | DFL | No.3/Stud | 7 - 10 | 11 - 10 | 15 - 2 | - | 11 - 0 | 14 - 2 | - | 10 - 4 | 13 - 3 | - | 9 - 8 | 12 - 6 | - | 8 - 11 | 11 - 6 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 |
| | HF | No.1 | 8 - 1 | 13 - 0 | 17 - 5 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 11 | 15 - 11 | - | 11 - 6 | 15 - 4 | - | 10 - 10 | 14 - 6 |
| | HF | No.2 | - | 12 - 5 | 16 - 6 | - | 11 - 10 | 15 - 10 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 9 |
| | HF | No.3/Stud | - | 11 - 6 | 14 - 10 | - | 10 - 9 | 13 - 10 | - | 10 - 1 | 12 - 11 | - | 9 - 5 | 12 - 2 | - | 8 - 8 | 11 - 2 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 3 | 13 - 3 | 17 - 8 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 |
| | SP | No.1 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 |
| | SP | No.2 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 8 | 15 - 7 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 1 |
| | SP | No.3 | - | 10 - 9 | 13 - 9 | - | 10 - 0 | 12 - 10 | - | 9 - 5 | 12 - 1 | - | 8 - 10 | 11 - 4 | - | 8 - 2 | 10 - 5 |
| | SP | Stud | - | 10 - 9 | 13 - 9 | - | 10 - 0 | 12 - 10 | - | 9 - 5 | 12 - 1 | - | 8 - 10 | 11 - 4 | - | 8 - 2 | 10 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 1 | 13 - 0 | 17 - 5 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 11 | 15 - 11 | - | 11 - 6 | 15 - 4 | - | 10 - 10 | 14 - 6 |
| | SPF | No.1 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 8 | 15 - 7 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 2 |
| | SPF | No.2 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 8 | 15 - 7 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 2 |
| | SPF | No.3/Stud | - | 11 - 6 | 14 - 10 | - | 10 - 9 | 13 - 10 | - | 10 - 1 | 12 - 11 | - | 9 - 5 | 12 - 2 | - | 8 - 8 | 11 - 2 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | - | 12 - 3 | 16 - 5 | - | 11 - 9 | 15 - 8 | - | 11 - 3 | 15 - 0 | - | 10 - 10 | 14 - 5 | - | 10 - 3 | 13 - 8 |
| | DFL | No.1 | - | 11 - 10 | 15 - 9 | - | 11 - 3 | 15 - 1 | - | 10 - 10 | 14 - 5 | - | 10 - 5 | 13 - 11 | - | 9 - 10 | 13 - 0 |
| | DFL | No.2 | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 5 | - | 9 - 7 | 12 - 4 |
| | DFL | No.3/Stud | - | 9 - 6 | 12 - 3 | - | 8 - 10 | 11 - 5 | - | 8 - 4 | 10 - 8 | - | 7 - 10 | 10 - 1 | - | - | 9 - 3 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 7 | - | 9 - 7 | 12 - 10 |
| | HF | No.1 | - | 11 - 4 | 15 - 1 | - | 10 - 10 | 14 - 5 | - | 10 - 4 | 13 - 10 | - | 9 - 11 | 13 - 3 | - | 9 - 5 | 12 - 7 |
| | HF | No.2 | - | 10 - 9 | 14 - 4 | - | 10 - 3 | 13 - 9 | - | 9 - 10 | 13 - 2 | - | 9 - 6 | 12 - 8 | - | 8 - 11 | 11 - 11 |
| | HF | No.3/Stud | - | 9 - 3 | 11 - 11 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 0 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | - | 12 - 0 | 16 - 1 | - | 11 - 6 | 15 - 4 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 0 | 13 - 5 |
| | SP | No.1 | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 7 | - | 9 - 7 | 12 - 10 |
| | SP | No.2 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 0 | - | 10 - 1 | 13 - 2 | - | 9 - 7 | 12 - 4 | - | 8 - 10 | 11 - 4 |
| | SP | No.3 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 4 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 5 |
| | SP | Stud | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 4 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | - | 11 - 4 | 15 - 1 | - | 10 - 10 | 14 - 5 | - | 10 - 4 | 13 - 10 | - | 9 - 11 | 13 - 3 | - | 9 - 5 | 12 - 7 |
| | SPF | No.1 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 1 | - | 10 - 1 | 13 - 6 | - | 9 - 9 | 13 - 0 | - | 9 - 2 | 12 - 2 |
| | SPF | No.2 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 1 | - | 10 - 1 | 13 - 6 | - | 9 - 9 | 13 - 0 | - | 9 - 2 | 12 - 2 |
| | SPF | No.3/Stud | - | 9 - 3 | 11 - 11 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 0 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A6 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

# Exposure C H/360

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 12 - 1 | 19 - 5 | 20-0† | 11 - 7 | 18 - 8 | 20-0† | 11 - 3 | 18 - 0 | 20-0† | 10 - 10 | 17 - 5 | 20-0† |
| | DFL | No.1 | 11 - 7 | 18 - 8 | 20-0† | 11 - 2 | 17 - 11 | 20-0† | 10 - 9 | 17 - 4 | 20-0† | 10 - 5 | 16 - 9 | 20-0† |
| | DFL | No.2 | 11 - 4 | 18 - 3 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | DFL | No.3/Stud | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | DFL | Standard | 10 - 10 | - | - | 10 - 5 | - | - | 10 - 1 | - | - | 9 - 9 | - | - |
| | HF | SS | 11 - 4 | 18 - 3 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | HF | No.1 | 11 - 1 | 17 - 10 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† |
| | HF | No.2 | 10 - 7 | 17 - 0 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† |
| | HF | No.3/Stud | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | HF | Standard | 10 - 3 | - | - | 9 - 11 | - | - | 9 - 7 | - | - | 9 - 3 | - | - |
| | SP | SS | 11 - 10 | 19 - 0 | 20-0† | 11 - 5 | 18 - 4 | 20-0† | 11 - 0 | 17 - 8 | 20-0† | 10 - 8 | 17 - 1 | 20-0† |
| | SP | No.1 | 11 - 4 | 18 - 3 | 20-0† | 10 - 11 | 17 - 7 | 20-0† | 10 - 7 | 16 - 11 | 20-0† | 10 - 3 | 16 - 5 | 20-0† |
| | SP | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SP | No.3 | 10 - 7 | 17 - 0 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† |
| | SP | Stud | 10 - 7 | 17 - 0 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 10 | 15 - 9 | 20-0† | 9 - 6 | 15 - 3 | 20-0† |
| | SP | Standard | 10 - 3 | - | - | 9 - 11 | - | - | 9 - 7 | - | - | 9 - 3 | - | - |
| | SPF | SS | 11 - 1 | 17 - 10 | 20-0† | 10 - 8 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 10 - 0 | 16 - 0 | 20-0† |
| | SPF | No.1 | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SPF | No.2 | 10 - 10 | 17 - 5 | 20-0† | 10 - 5 | 16 - 9 | 20-0† | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† |
| | SPF | No.3/Stud | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | SPF | Standard | 10 - 3 | - | - | 9 - 11 | - | - | 9 - 7 | - | - | 9 - 3 | - | - |
| 16 | DFL | SS | 10 - 11 | 17 - 6 | 20-0† | 10 - 6 | 16 - 11 | 20-0† | 10 - 2 | 16 - 3 | 20-0† | 9 - 10 | 15 - 9 | 20-0† |
| | DFL | No.1 | 10 - 6 | 16 - 10 | 20-0† | 10 - 1 | 16 - 3 | 20-0† | 9 - 9 | 15 - 8 | 20-0† | 9 - 5 | 15 - 2 | 20-0† |
| | DFL | No.2 | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | DFL | No.3/Stud | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 |
| | DFL | Standard | 9 - 10 | - | - | 9 - 5 | - | - | 9 - 1 | - | - | 8 - 10 | - | - |
| | HF | SS | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | HF | No.1 | 10 - 1 | 16 - 2 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 |
| | HF | No.2 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 7 | 13 - 9 | 18 - 5 |
| | HF | No.3/Stud | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 4 | 13 - 5 | 17 - 11 |
| | HF | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 8 | - | - | 8 - 4 | - | - |
| | SP | SS | 10 - 9 | 17 - 2 | 20-0† | 10 - 4 | 16 - 7 | 20-0† | 9 - 11 | 16 - 0 | 20-0† | 9 - 7 | 15 - 5 | 20-0† |
| | SP | No.1 | 10 - 3 | 16 - 6 | 20-0† | 9 - 11 | 15 - 11 | 20-0† | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 10 | 19 - 10 |
| | SP | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SP | No.3 | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 7 | 13 - 9 | 18 - 5 |
| | SP | Stud | 9 - 7 | 15 - 4 | 20-0† | 9 - 3 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 3 | 19 - 1 | 8 - 7 | 13 - 9 | 18 - 5 |
| | SP | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 8 | - | - | 8 - 4 | - | - |
| | SPF | SS | 10 - 1 | 16 - 2 | 20-0† | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 0 | 14 - 6 | 19 - 4 |
| | SPF | No.1 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SPF | No.2 | 9 - 10 | 15 - 9 | 20-0† | 9 - 5 | 15 - 2 | 20-0† | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 4 | 13 - 5 | 17 - 11 |
| | SPF | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 8 | - | - | 8 - 4 | - | - |
| 24 | DFL | SS | 9 - 6 | 15 - 3 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 18 - 11 | 8 - 6 | 13 - 8 | 18 - 3 |
| | DFL | No.1 | 9 - 1 | 14 - 8 | 19 - 7 | 8 - 9 | 14 - 1 | 18 - 10 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 2 | 13 - 2 | 17 - 7 |
| | DFL | No.2 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 7 | 13 - 10 | 18 - 5 | 8 - 4 | 13 - 4 | 17 - 9 | 8 - 0 | 12 - 10 | 17 - 2 |
| | DFL | No.3/Stud | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 3 | 16 - 5 |
| | DFL | Standard | 8 - 6 | - | - | 8 - 3 | - | - | 7 - 11 | - | - | - | - | - |
| | HF | SS | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 7 | 13 - 10 | 18 - 5 | 8 - 4 | 13 - 4 | 17 - 9 | 8 - 0 | 12 - 10 | 17 - 2 |
| | HF | No.1 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 13 - 0 | 17 - 5 | 7 - 10 | 12 - 7 | 16 - 10 |
| | HF | No.2 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 5 | 16 - 6 | - | 12 - 0 | 16 - 0 |
| | HF | No.3/Stud | 8 - 1 | 12 - 11 | 17 - 4 | 7 - 9 | 12 - 6 | 16 - 8 | - | 12 - 0 | 16 - 1 | - | 11 - 8 | 15 - 6 |
| | HF | Standard | 8 - 1 | - | - | 7 - 9 | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 4 | 14 - 11 | 19 - 11 | 9 - 0 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 10 | 18 - 6 | 8 - 4 | 13 - 5 | 17 - 11 |
| | SP | No.1 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 7 | 13 - 10 | 18 - 5 | 8 - 4 | 13 - 4 | 17 - 9 | 8 - 0 | 12 - 10 | 17 - 2 |
| | SP | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 3 | 16 - 5 |
| | SP | No.3 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 5 | 16 - 6 | - | 12 - 0 | 16 - 0 |
| | SP | Stud | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 0 | 12 - 10 | 17 - 2 | - | 12 - 5 | 16 - 6 | - | 12 - 0 | 16 - 0 |
| | SP | Standard | 8 - 1 | - | - | 7 - 9 | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 1 | 13 - 0 | 17 - 5 | 7 - 10 | 12 - 7 | 16 - 10 |
| | SPF | No.1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 3 | 16 - 5 |
| | SPF | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 2 | 17 - 7 | 7 - 11 | 12 - 8 | 17 - 0 | - | 12 - 3 | 16 - 5 |
| | SPF | No.3/Stud | 8 - 1 | 12 - 11 | 17 - 4 | 7 - 9 | 12 - 6 | 16 - 8 | - | 12 - 0 | 16 - 1 | - | 11 - 8 | 15 - 6 |
| | SPF | Standard | 8 - 1 | - | - | 7 - 9 | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A6 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

# Exposure C H/360

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 10 - 6 | 16 - 10 | 20-0† | 10 - 2 | 16 - 4 | 20-0† | 9 - 11 | 15 - 10 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 8 - 10 | 14 - 3 | 19 - 0 |
| | DFL | No.1 | 10 - 1 | 16 - 2 | 20-0† | 9 - 9 | 15 - 8 | 20-0† | 9 - 6 | 15 - 3 | 20-0† | 9 - 0 | 14 - 5 | 19 - 3 | 8 - 6 | 13 - 8 | 18 - 3 |
| | DFL | No.2 | 9 - 11 | 15 - 10 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 5 | 17 - 11 |
| | DFL | No.3/Stud | 9 - 5 | 15 - 2 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 10 | 17 - 1 |
| | DFL | Standard | 9 - 5 | - | - | 9 - 2 | - | - | 8 - 11 | - | - | 8 - 5 | - | - | 8 - 0 | - | - |
| | HF | SS | 9 - 11 | 15 - 10 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 5 | 17 - 11 |
| | HF | No.1 | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 7 | 13 - 10 | 18 - 5 | 8 - 2 | 13 - 1 | 17 - 6 |
| | HF | No.2 | 9 - 2 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 4 | 19 - 1 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 9 | 12 - 6 | 16 - 8 |
| | HF | No.3/Stud | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | HF | Standard | 8 - 11 | - | - | 8 - 8 | - | - | 8 - 5 | - | - | 8 - 0 | - | - | - | - | - |
| | SP | SS | 10 - 4 | 16 - 6 | 20-0† | 10 - 0 | 16 - 0 | 20-0† | 9 - 8 | 15 - 7 | 20-0† | 9 - 2 | 14 - 8 | 19 - 8 | 8 - 8 | 14 - 0 | 18 - 8 |
| | SP | No.1 | 9 - 11 | 15 - 10 | 20-0† | 9 - 7 | 15 - 5 | 20-0† | 9 - 4 | 14 - 11 | 19 - 11 | 8 - 10 | 14 - 1 | 18 - 10 | 8 - 4 | 13 - 5 | 17 - 11 |
| | SP | No.2 | 9 - 5 | 15 - 2 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 10 | 17 - 1 |
| | SP | No.3 | 9 - 2 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 4 | 19 - 1 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 9 | 12 - 6 | 16 - 8 |
| | SP | Stud | 9 - 2 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 4 | 19 - 1 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 2 | 13 - 2 | 17 - 6 | 7 - 9 | 12 - 6 | 16 - 8 |
| | SP | Standard | 8 - 11 | - | - | 8 - 8 | - | - | 8 - 5 | - | - | 8 - 0 | - | - | - | - | - |
| | SPF | SS | 9 - 8 | 15 - 6 | 20-0† | 9 - 4 | 15 - 0 | 20-0† | 9 - 1 | 14 - 7 | 19 - 6 | 8 - 7 | 13 - 10 | 18 - 5 | 8 - 2 | 13 - 1 | 17 - 6 |
| | SPF | No.1 | 9 - 5 | 15 - 2 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 10 | 17 - 1 |
| | SPF | No.2 | 9 - 5 | 15 - 2 | 20-0† | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 11 | 14 - 3 | 19 - 0 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 10 | 17 - 1 |
| | SPF | No.3/Stud | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | SPF | Standard | 8 - 11 | - | - | 8 - 8 | - | - | 8 - 5 | - | - | 8 - 0 | - | - | - | - | - |
| 16 | DFL | SS | 9 - 6 | 15 - 3 | 20-0† | 9 - 2 | 14 - 9 | 19 - 9 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 5 | 13 - 7 | 18 - 1 | 8 - 0 | 12 - 10 | 17 - 2 |
| | DFL | No.1 | 9 - 2 | 14 - 8 | 19 - 7 | 8 - 10 | 14 - 2 | 19 - 0 | 8 - 7 | 13 - 9 | 18 - 5 | 8 - 2 | 13 - 0 | 17 - 5 | - | 12 - 5 | 16 - 6 |
| | DFL | No.2 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | DFL | No.3/Stud | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 9 | 8 - 0 | 12 - 11 | 17 - 3 | - | 12 - 2 | 16 - 3 | - | 11 - 7 | 15 - 5 |
| | DFL | Standard | 8 - 6 | - | - | 8 - 3 | - | - | 8 - 0 | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | HF | No.1 | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 3 | 13 - 2 | 17 - 8 | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 10 | 15 - 10 |
| | HF | No.2 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 15 - 1 |
| | HF | No.3/Stud | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 | - | 11 - 0 | 14 - 8 |
| | HF | Standard | 8 - 1 | - | - | 7 - 10 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 4 | 14 - 11 | 20 - 0 | 9 - 0 | 14 - 6 | 19 - 4 | 8 - 9 | 14 - 1 | 18 - 9 | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 8 | 16 - 10 |
| | SP | No.1 | 8 - 11 | 14 - 4 | 19 - 2 | 8 - 8 | 13 - 11 | 18 - 7 | 8 - 5 | 13 - 6 | 18 - 0 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 1 | 16 - 2 |
| | SP | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 9 | 8 - 0 | 12 - 11 | 17 - 3 | - | 12 - 2 | 16 - 3 | - | 11 - 7 | 15 - 5 |
| | SP | No.3 | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 14 - 10 |
| | SP | Stud | 8 - 4 | 13 - 4 | 17 - 10 | 8 - 1 | 12 - 11 | 17 - 3 | 7 - 10 | 12 - 7 | 16 - 9 | - | 11 - 10 | 15 - 10 | - | 11 - 3 | 14 - 10 |
| | SP | Standard | 8 - 1 | - | - | 7 - 10 | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 9 | 14 - 0 | 18 - 9 | 8 - 6 | 13 - 7 | 18 - 2 | 8 - 3 | 13 - 2 | 17 - 8 | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 10 | 15 - 10 |
| | SPF | No.1 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 9 | 8 - 0 | 12 - 11 | 17 - 3 | - | 12 - 2 | 16 - 3 | - | 11 - 7 | 15 - 5 |
| | SPF | No.2 | 8 - 6 | 13 - 8 | 18 - 3 | 8 - 3 | 13 - 3 | 17 - 9 | 8 - 0 | 12 - 11 | 17 - 3 | - | 12 - 2 | 16 - 3 | - | 11 - 7 | 15 - 5 |
| | SPF | No.3/Stud | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 | - | 11 - 0 | 14 - 8 |
| | SPF | Standard | 8 - 1 | - | - | 7 - 10 | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 8 - 3 | 13 - 3 | 17 - 8 | 8 - 0 | 12 - 10 | 17 - 1 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 9 | 15 - 9 | - | 11 - 2 | 14 - 11 |
| | DFL | No.1 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 4 | 16 - 6 | - | 12 - 0 | 16 - 0 | - | 11 - 4 | 15 - 1 | - | 10 - 9 | 14 - 4 |
| | DFL | No.2 | 7 - 9 | 12 - 5 | 16 - 8 | - | 12 - 1 | 16 - 1 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 | - | 10 - 6 | 14 - 1 |
| | DFL | No.3/Stud | - | 11 - 11 | 15 - 10 | - | 11 - 6 | 15 - 5 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 2 | - | 10 - 1 | 13 - 2 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 7 - 9 | 12 - 5 | 16 - 8 | - | 12 - 1 | 16 - 1 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 | - | 10 - 6 | 14 - 1 |
| | HF | No.1 | - | 12 - 2 | 16 - 3 | - | 11 - 10 | 15 - 9 | - | 11 - 6 | 15 - 4 | - | 10 - 10 | 14 - 6 | - | 10 - 3 | 13 - 9 |
| | HF | No.2 | - | 11 - 7 | 15 - 6 | - | 11 - 3 | 15 - 0 | - | 10 - 11 | 14 - 7 | - | 10 - 4 | 13 - 9 | - | 9 - 9 | 13 - 1 |
| | HF | No.3/Stud | - | 11 - 3 | 15 - 1 | - | 10 - 11 | 14 - 7 | - | 10 - 7 | 14 - 2 | - | 10 - 0 | 13 - 5 | - | 9 - 6 | 12 - 9 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 10 | 12 - 7 | 16 - 10 | - | 12 - 3 | 16 - 4 | - | 11 - 7 | 15 - 5 | - | 11 - 0 | 14 - 8 |
| | SP | No.1 | 7 - 9 | 12 - 5 | 16 - 8 | - | 12 - 1 | 16 - 1 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 | - | 10 - 6 | 14 - 1 |
| | SP | No.2 | - | 11 - 11 | 15 - 10 | - | 11 - 6 | 15 - 5 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 2 | - | 10 - 1 | 13 - 5 |
| | SP | No.3 | - | 11 - 7 | 15 - 5 | - | 11 - 3 | 14 - 9 | - | 10 - 11 | 14 - 1 | - | 10 - 1 | 12 - 11 | - | 9 - 4 | 11 - 11 |
| | SP | Stud | - | 11 - 7 | 15 - 5 | - | 11 - 3 | 14 - 9 | - | 10 - 11 | 14 - 1 | - | 10 - 1 | 12 - 11 | - | 9 - 4 | 11 - 11 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | - | 12 - 2 | 16 - 3 | - | 11 - 10 | 15 - 9 | - | 11 - 6 | 15 - 4 | - | 10 - 10 | 14 - 6 | - | 10 - 3 | 13 - 9 |
| | SPF | No.1 | - | 11 - 11 | 15 - 10 | - | 11 - 6 | 15 - 5 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 2 | - | 10 - 1 | 13 - 5 |
| | SPF | No.2 | - | 11 - 11 | 15 - 10 | - | 11 - 6 | 15 - 5 | - | 11 - 2 | 14 - 11 | - | 10 - 7 | 14 - 2 | - | 10 - 1 | 13 - 5 |
| | SPF | No.3/Stud | - | 11 - 3 | 15 - 1 | - | 10 - 11 | 14 - 7 | - | 10 - 7 | 14 - 2 | - | 10 - 0 | 13 - 5 | - | 9 - 6 | 12 - 9 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A6 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

# Exposure C H/360

(Fully Sheathed with a Minimum Sheathing Material)[a]

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 8 - 5 | 13 - 7 | 18 - 1 | 8 - 1 | 13 - 0 | 17 - 4 | 7 - 9 | 12 - 5 | 16 - 7 | - | 11 - 11 | 15 - 11 | - | 11 - 4 | 15 - 1 |
| | DFL | No.1 | 8 - 2 | 13 - 1 | 17 - 5 | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 11 | 16 - 0 | - | 11 - 6 | 15 - 4 | - | 10 - 10 | 14 - 6 |
| | DFL | No.2 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 3 | 16 - 4 | - | 11 - 8 | 15 - 8 | - | 11 - 3 | 15 - 0 | - | 10 - 8 | 14 - 2 |
| | DFL | No.3/Stud | - | 12 - 2 | 16 - 3 | - | 11 - 8 | 15 - 7 | - | 11 - 2 | 14 - 11 | - | 10 - 9 | 14 - 4 | - | 10 - 2 | 13 - 5 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 3 | 16 - 4 | - | 11 - 8 | 15 - 8 | - | 11 - 3 | 15 - 0 | - | 10 - 8 | 14 - 2 |
| | HF | No.1 | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 11 | 15 - 11 | - | 11 - 5 | 15 - 3 | - | 11 - 0 | 14 - 8 | - | 10 - 5 | 13 - 11 |
| | HF | No.2 | - | 11 - 11 | 15 - 10 | - | 11 - 4 | 15 - 2 | - | 10 - 11 | 14 - 6 | - | 10 - 6 | 14 - 0 | - | 9 - 11 | 13 - 3 |
| | HF | No.3/Stud | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 7 | - | 9 - 7 | 12 - 10 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 4 | 13 - 4 | 17 - 9 | 7 - 11 | 12 - 9 | 17 - 0 | - | 12 - 2 | 16 - 3 | - | 11 - 9 | 15 - 8 | - | 11 - 1 | 14 - 10 |
| | SP | No.1 | 8 - 0 | 12 - 9 | 17 - 1 | - | 12 - 3 | 16 - 4 | - | 11 - 8 | 15 - 8 | - | 11 - 3 | 15 - 0 | - | 10 - 8 | 14 - 2 |
| | SP | No.2 | - | 12 - 2 | 16 - 3 | - | 11 - 8 | 15 - 7 | - | 11 - 2 | 14 - 11 | - | 10 - 9 | 14 - 4 | - | 10 - 2 | 13 - 7 |
| | SP | No.3 | - | 11 - 11 | 15 - 10 | - | 11 - 4 | 15 - 0 | - | 10 - 11 | 14 - 1 | - | 10 - 4 | 13 - 3 | - | 9 - 6 | 12 - 2 |
| | SP | Stud | - | 11 - 11 | 15 - 10 | - | 11 - 4 | 15 - 0 | - | 10 - 11 | 14 - 1 | - | 10 - 4 | 13 - 3 | - | 9 - 6 | 12 - 2 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 7 - 9 | 12 - 6 | 16 - 8 | - | 11 - 11 | 15 - 11 | - | 11 - 5 | 15 - 3 | - | 11 - 0 | 14 - 8 | - | 10 - 5 | 13 - 11 |
| | SPF | No.1 | - | 12 - 2 | 16 - 3 | - | 11 - 8 | 15 - 7 | - | 11 - 2 | 14 - 11 | - | 10 - 9 | 14 - 4 | - | 10 - 2 | 13 - 7 |
| | SPF | No.2 | - | 12 - 2 | 16 - 3 | - | 11 - 8 | 15 - 7 | - | 11 - 2 | 14 - 11 | - | 10 - 9 | 14 - 4 | - | 10 - 2 | 13 - 7 |
| | SPF | No.3/Stud | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 7 | - | 9 - 7 | 12 - 10 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | - | 12 - 3 | 16 - 5 | - | 11 - 9 | 15 - 8 | - | 11 - 3 | 15 - 0 | - | 10 - 10 | 14 - 5 | - | 10 - 3 | 13 - 8 |
| | DFL | No.1 | - | 11 - 10 | 15 - 9 | - | 11 - 3 | 15 - 1 | - | 10 - 10 | 14 - 5 | - | 10 - 5 | 13 - 11 | - | 9 - 10 | 13 - 1 |
| | DFL | No.2 | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 7 | - | 9 - 7 | 12 - 10 |
| | DFL | No.3/Stud | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 1 | - | 10 - 1 | 13 - 3 | - | 9 - 8 | 12 - 6 | - | 8 - 11 | 11 - 6 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 7 | - | 9 - 7 | 12 - 10 |
| | HF | No.1 | - | 11 - 4 | 15 - 1 | - | 10 - 10 | 14 - 5 | - | 10 - 4 | 13 - 10 | - | 9 - 11 | 13 - 3 | - | 9 - 5 | 12 - 7 |
| | HF | No.2 | - | 10 - 9 | 14 - 4 | - | 10 - 3 | 13 - 9 | - | 9 - 10 | 13 - 2 | - | 9 - 6 | 12 - 8 | - | 8 - 11 | 11 - 11 |
| | HF | No.3/Stud | - | 10 - 5 | 13 - 11 | - | 10 - 0 | 13 - 4 | - | 9 - 7 | 12 - 9 | - | 9 - 2 | 12 - 2 | - | 8 - 8 | 11 - 2 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | - | 12 - 0 | 16 - 1 | - | 11 - 6 | 15 - 4 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 0 | 13 - 5 |
| | SP | No.1 | - | 11 - 7 | 15 - 5 | - | 11 - 1 | 14 - 9 | - | 10 - 7 | 14 - 2 | - | 10 - 2 | 13 - 7 | - | 9 - 7 | 12 - 10 |
| | SP | No.2 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 1 | - | 10 - 1 | 13 - 6 | - | 9 - 9 | 13 - 0 | - | 9 - 2 | 12 - 3 |
| | SP | No.3 | - | 10 - 9 | 13 - 9 | - | 10 - 0 | 12 - 10 | - | 9 - 5 | 12 - 1 | - | 8 - 10 | 11 - 4 | - | 8 - 2 | 10 - 5 |
| | SP | Stud | - | 10 - 9 | 13 - 9 | - | 10 - 0 | 12 - 10 | - | 9 - 5 | 12 - 1 | - | 8 - 10 | 11 - 4 | - | 8 - 2 | 10 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | - | 11 - 4 | 15 - 1 | - | 10 - 10 | 14 - 5 | - | 10 - 4 | 13 - 10 | - | 9 - 11 | 13 - 3 | - | 9 - 5 | 12 - 7 |
| | SPF | No.1 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 1 | - | 10 - 1 | 13 - 6 | - | 9 - 9 | 13 - 0 | - | 9 - 2 | 12 - 3 |
| | SPF | No.2 | - | 11 - 0 | 14 - 9 | - | 10 - 7 | 14 - 1 | - | 10 - 1 | 13 - 6 | - | 9 - 9 | 13 - 0 | - | 9 - 2 | 12 - 3 |
| | SPF | No.3/Stud | - | 10 - 5 | 13 - 11 | - | 10 - 0 | 13 - 4 | - | 9 - 7 | 12 - 9 | - | 9 - 2 | 12 - 2 | - | 8 - 8 | 11 - 2 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | - | 10 - 8 | 14 - 3 | - | 10 - 2 | 13 - 7 | - | 9 - 9 | 13 - 0 | - | 9 - 5 | 12 - 6 | - | 8 - 10 | 11 - 10 |
| | DFL | No.1 | - | 10 - 3 | 13 - 8 | - | 9 - 10 | 13 - 1 | - | 9 - 5 | 12 - 6 | - | 9 - 0 | 12 - 1 | - | 8 - 6 | 11 - 5 |
| | DFL | No.2 | - | 10 - 0 | 13 - 5 | - | 9 - 7 | 12 - 10 | - | 9 - 2 | 12 - 3 | - | 8 - 10 | 11 - 10 | - | 8 - 4 | 11 - 2 |
| | DFL | No.3/Stud | - | 9 - 6 | 12 - 3 | - | 8 - 10 | 11 - 5 | - | 8 - 4 | 10 - 8 | - | 7 - 10 | 10 - 1 | - | - | 9 - 3 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | - | 10 - 0 | 13 - 5 | - | 9 - 7 | 12 - 10 | - | 9 - 2 | 12 - 3 | - | 8 - 10 | 11 - 10 | - | 8 - 4 | 11 - 2 |
| | HF | No.1 | - | 9 - 10 | 13 - 1 | - | 9 - 5 | 12 - 6 | - | 9 - 0 | 12 - 0 | - | 8 - 8 | 11 - 6 | - | 8 - 2 | 10 - 11 |
| | HF | No.2 | - | 9 - 4 | 12 - 5 | - | 8 - 11 | 11 - 11 | - | 8 - 7 | 11 - 5 | - | 8 - 3 | 11 - 0 | - | 7 - 9 | 10 - 4 |
| | HF | No.3/Stud | - | 9 - 1 | 11 - 11 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 0 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | - | 10 - 5 | 13 - 11 | - | 10 - 0 | 13 - 4 | - | 9 - 7 | 12 - 9 | - | 9 - 2 | 12 - 3 | - | 8 - 8 | 11 - 7 |
| | SP | No.1 | - | 10 - 0 | 13 - 5 | - | 9 - 7 | 12 - 10 | - | 9 - 2 | 12 - 3 | - | 8 - 10 | 11 - 10 | - | 8 - 4 | 11 - 2 |
| | SP | No.2 | - | 9 - 7 | 12 - 9 | - | 9 - 2 | 12 - 3 | - | 8 - 9 | 11 - 9 | - | 8 - 5 | 11 - 3 | - | 8 - 0 | 10 - 8 |
| | SP | No.3 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 4 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 5 |
| | SP | Stud | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 4 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | - | 9 - 10 | 13 - 1 | - | 9 - 5 | 12 - 6 | - | 9 - 0 | 12 - 0 | - | 8 - 8 | 11 - 6 | - | 8 - 2 | 10 - 11 |
| | SPF | No.1 | - | 9 - 7 | 12 - 9 | - | 9 - 2 | 12 - 3 | - | 8 - 9 | 11 - 9 | - | 8 - 5 | 11 - 3 | - | 8 - 0 | 10 - 8 |
| | SPF | No.2 | - | 9 - 7 | 12 - 9 | - | 9 - 2 | 12 - 3 | - | 8 - 9 | 11 - 9 | - | 8 - 5 | 11 - 3 | - | 8 - 0 | 10 - 8 |
| | SPF | No.3/Stud | - | 9 - 1 | 11 - 11 | - | 8 - 8 | 11 - 1 | - | 8 - 1 | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 0 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20A footnotes.

## Table 3.20A Footnotes

† Allowable stud length exceeds 20 feet.

†† Maximum stud length for 2x4's is limited to 14 feet per Table 3.20C.

- Lumber grade not available or allowable stud length is less than 7 ft - 9 in. (for 8 ft wall height).

a Maximum stud lengths in Table 3.20A are based on interior zone loads and assume that all studs are covered on the inside with a minimum of 1/2 inch gypsum wallboard. To address additional end zone loading requirements, studs within 4 feet of corners shall be sheathed on the exterior side with a minimum of 3/8 inch wood structural panel sheathing or the end zone stud spacings shall be multiplied by 0.80 for framing located within 4 feet of corners to account for the additional end zone loading requirements. The additional bending capacity provided by the wood structural panels or reduced stud spacing is assumed to be sufficient to resist the additional end zone loading requirements.

1 Exterior studs shall be limited to a height between horizontal supports per Table 3.20C. DFL = Douglas Fir-Larch, HF = Hem-Fir, SP = Southern Pine, SPF = Spruce-Pine-Fir.

## Table 3.20B1 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure B**
**H/180**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - |
| 16 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 13 - 4 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | HF | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 9 | - | - | 13 - 0 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | Standard | 13 - 6 | - | - | 13 - 5 | - | - | 12 - 8 | - | - | 12 - 1 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SPF | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 9 | - | - | 13 - 0 | - | - |
| 24 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 13 - 6 | 19 - 8 | 20-0† | 13 - 6 | 19 - 8 | 20-0† | 13 - 0 | 19 - 1 | 20-0† | 12 - 7 | 18 - 1 | 20-0† |
| | DFL | Standard | 12 - 1 | - | - | 12 - 0 | - | - | 11 - 4 | - | - | 10 - 9 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | HF | No.1 | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† |
| | HF | No.2 | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 8 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | HF | No.3/Stud | 12 - 10 | 19 - 2 | 20-0† | 12 - 9 | 19 - 2 | 20-0† | 12 - 4 | 18 - 7 | 20-0† | 11 - 11 | 17 - 7 | 20-0† |
| | HF | Standard | 11 - 10 | - | - | 11 - 8 | - | - | 11 - 1 | - | - | 10 - 6 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | SP | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SP | No.3 | 12 - 11 | 18 - 1 | 20-0† | 12 - 9 | 18 - 1 | 20-0† | 12 - 1 | 17 - 5 | 20-0† | 11 - 6 | 16 - 6 | 20-0† |
| | SP | Stud | 12 - 11 | 18 - 1 | 20-0† | 12 - 9 | 18 - 1 | 20-0† | 12 - 1 | 17 - 5 | 20-0† | 11 - 6 | 16 - 6 | 20-0† |
| | SP | Standard | 11 - 0 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 8 | - | - |
| | SPF | SS | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† |
| | SPF | No.1 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SPF | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SPF | No.3/Stud | 12 - 10 | 19 - 2 | 20-0† | 12 - 9 | 19 - 2 | 20-0† | 12 - 4 | 18 - 7 | 20-0† | 11 - 11 | 17 - 7 | 20-0† |
| | SPF | Standard | 11 - 10 | - | - | 11 - 8 | - | - | 11 - 1 | - | - | 10 - 6 | - | - |

See Table 3.20B footnotes.

## Table 3.20B1 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure B H/180 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 19 - 3 | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 6 | - | - | 12 - 5 | - | - | 11 - 5 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† |
| | HF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 18 - 9 | 20-0† |
| | HF | Standard | 14-0†† | - | - | 13 - 10 | - | - | 13 - 2 | - | - | 12 - 1 | - | - | 11 - 2 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 3 | 19 - 0 | 20-0† | 12 - 3 | 17 - 7 | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 3 | 19 - 0 | 20-0† | 12 - 3 | 17 - 7 | 20-0† |
| | SP | Standard | 13 - 5 | - | - | 12 - 9 | - | - | 12 - 2 | - | - | 11 - 2 | - | - | 10 - 4 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† |
| | SPF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 18 - 9 | 20-0† |
| | SPF | Standard | 14-0†† | - | - | 13 - 10 | - | - | 13 - 2 | - | - | 12 - 1 | - | - | 11 - 2 | - | - |
| 16 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 8 | 19 - 8 | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 19 - 6 | 20-0† | 12 - 6 | 17 - 10 | 20-0† | 11 - 7 | 16 - 6 | 20-0† |
| | DFL | Standard | 12 - 8 | - | - | 12 - 1 | - | - | 11 - 7 | - | - | 10 - 7 | - | - | 9 - 10 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 12 - 10 | 19 - 10 | 20-0† | 12 - 2 | 18 - 10 | 20-0† |
| | HF | No.2 | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 7 | 17 - 11 | 20-0† |
| | HF | No.3/Stud | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 19 - 10 | 20-0† | 12 - 6 | 19 - 0 | 20-0† | 11 - 10 | 17 - 5 | 20-0† | 11 - 3 | 16 - 1 | 19 - 11 |
| | HF | Standard | 12 - 5 | - | - | 11 - 10 | - | - | 11 - 4 | - | - | 10 - 4 | - | - | 9 - 7 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 11 - 10 | 18 - 4 | 20-0† |
| | SP | No.3 | 13 - 7 | 19 - 6 | 20-0† | 12 - 11 | 18 - 7 | 20-0† | 12 - 4 | 17 - 9 | 20-0† | 11 - 4 | 16 - 4 | 20-0† | 10 - 6 | 15 - 1 | 18 - 6 |
| | SP | Stud | 13 - 7 | 19 - 6 | 20-0† | 12 - 11 | 18 - 7 | 20-0† | 12 - 4 | 17 - 9 | 20-0† | 11 - 4 | 16 - 4 | 20-0† | 10 - 6 | 15 - 1 | 18 - 6 |
| | SP | Standard | 11 - 6 | - | - | 10 - 11 | - | - | 10 - 5 | - | - | 9 - 7 | - | - | 8 - 10 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 12 - 10 | 19 - 10 | 20-0† | 12 - 2 | 18 - 10 | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 11 - 10 | 18 - 4 | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 11 - 10 | 18 - 4 | 20-0† |
| | SPF | No.3/Stud | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 19 - 10 | 20-0† | 12 - 6 | 19 - 0 | 20-0† | 11 - 10 | 17 - 5 | 20-0† | 11 - 3 | 16 - 1 | 19 - 11 |
| | SPF | Standard | 12 - 5 | - | - | 11 - 10 | - | - | 11 - 4 | - | - | 10 - 4 | - | - | 9 - 7 | - | - |
| 24 | DFL | SS | 13 - 7 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 5 | 17 - 9 | 20-0† |
| | DFL | No.1 | 13 - 0 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 0 | 17 - 1 | 20-0† |
| | DFL | No.2 | 12 - 9 | 19 - 9 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 4 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | DFL | No.3/Stud | 12 - 1 | 17 - 2 | 20-0† | 11 - 6 | 16 - 5 | 20-0† | 11 - 0 | 15 - 8 | 19 - 4 | 10 - 1 | 14 - 4 | 17 - 9 | 9 - 4 | 13 - 3 | 16 - 5 |
| | DFL | Standard | 10 - 3 | - | - | 9 - 9 | - | - | 9 - 4 | - | - | 8 - 7 | - | - | 7 - 11 | - | - |
| | HF | SS | 12 - 9 | 19 - 9 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 4 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | HF | No.1 | 12 - 6 | 19 - 4 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | HF | No.2 | 11 - 10 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | HF | No.3/Stud | 11 - 7 | 16 - 9 | 20-0† | 11 - 2 | 16 - 0 | 19 - 9 | 10 - 9 | 15 - 3 | 18 - 10 | 9 - 10 | 14 - 0 | 17 - 4 | 9 - 1 | 12 - 11 | 16 - 0 |
| | HF | Standard | 10 - 0 | - | - | 9 - 6 | - | - | 9 - 1 | - | - | 8 - 4 | - | - | - | - | - |
| | SP | SS | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 5 | 20-0† |
| | SP | No.1 | 12 - 9 | 19 - 9 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 4 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | SP | No.2 | 12 - 2 | 18 - 10 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | SP | No.3 | 10 - 11 | 15 - 8 | 19 - 3 | 10 - 5 | 14 - 11 | 18 - 5 | 9 - 11 | 14 - 3 | 17 - 7 | 9 - 2 | 13 - 1 | 16 - 1 | 8 - 5 | 12 - 1 | 14 - 11 |
| | SP | Stud | 10 - 11 | 15 - 8 | 19 - 3 | 10 - 5 | 14 - 11 | 18 - 5 | 9 - 11 | 14 - 3 | 17 - 7 | 9 - 2 | 13 - 1 | 16 - 1 | 8 - 5 | 12 - 1 | 14 - 11 |
| | SP | Standard | 9 - 3 | - | - | 8 - 10 | - | - | 8 - 5 | - | - | - | - | - | - | - | - |
| | SPF | SS | 12 - 6 | 19 - 4 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SPF | No.1 | 12 - 2 | 18 - 10 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | SPF | No.2 | 12 - 2 | 18 - 10 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | SPF | No.3/Stud | 11 - 7 | 16 - 9 | 20-0† | 11 - 2 | 16 - 0 | 19 - 9 | 10 - 9 | 15 - 3 | 18 - 10 | 9 - 10 | 14 - 0 | 17 - 4 | 9 - 1 | 12 - 11 | 16 - 0 |
| | SPF | Standard | 10 - 0 | - | - | 9 - 6 | - | - | 9 - 1 | - | - | 8 - 4 | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B1 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure B**
**H/180**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 11 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 7 | 17 - 11 | 20-0† |
| | DFL | No.1 | 13 - 4 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† | 12 - 3 | 19 - 0 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† |
| | DFL | No.2 | 13 - 1 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 10 - 11 | 16 - 10 | 20-0† |
| | DFL | No.3/Stud | 12 - 6 | 17 - 11 | 20-0† | 11 - 9 | 16 - 8 | 20-0† | 11 - 0 | 15 - 8 | 19 - 4 | 10 - 4 | 14 - 8 | 18 - 2 | 9 - 6 | 13 - 6 | 16 - 8 |
| | DFL | Standard | 10 - 8 | - | - | 9 - 11 | - | - | 9 - 4 | - | - | 8 - 9 | - | - | 8 - 0 | - | - |
| | HF | SS | 13 - 1 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 10 - 11 | 16 - 10 | 20-0† |
| | HF | No.1 | 12 - 10 | 19 - 10 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 8 | 16 - 6 | 20-0† |
| | HF | No.2 | 12 - 2 | 18 - 10 | 20-0† | 11 - 8 | 18 - 0 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | HF | No.3/Stud | 11 - 10 | 17 - 5 | 20-0† | 11 - 4 | 16 - 3 | 20-0† | 10 - 9 | 15 - 3 | 18 - 10 | 10 - 1 | 14 - 4 | 17 - 9 | 9 - 3 | 13 - 2 | 16 - 3 |
| | HF | Standard | 10 - 5 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 7 | - | - | 7 - 10 | - | - |
| | SP | SS | 13 - 8 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 4 | 17 - 7 | 20-0† |
| | SP | No.1 | 13 - 1 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 10 - 11 | 16 - 10 | 20-0† |
| | SP | No.2 | 12 - 6 | 19 - 4 | 20-0† | 11 - 11 | 18 - 6 | 20-0† | 11 - 5 | 17 - 9 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 5 | 16 - 1 | 20-0† |
| | SP | No.3 | 11 - 4 | 16 - 4 | 20-0† | 10 - 7 | 15 - 3 | 18 - 9 | 9 - 11 | 14 - 3 | 17 - 6 | 9 - 4 | 13 - 5 | 16 - 6 | 8 - 7 | 12 - 4 | 15 - 2 |
| | SP | Stud | 11 - 4 | 16 - 4 | 20-0† | 10 - 7 | 15 - 3 | 18 - 9 | 9 - 11 | 14 - 3 | 17 - 6 | 9 - 4 | 13 - 5 | 16 - 6 | 8 - 7 | 12 - 4 | 15 - 2 |
| | SP | Standard | 9 - 7 | - | - | 9 - 0 | - | - | 8 - 5 | - | - | 7 - 11 | - | - | - | - | - |
| | SPF | SS | 12 - 10 | 19 - 10 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 8 | 16 - 6 | 20-0† |
| | SPF | No.1 | 12 - 6 | 19 - 4 | 20-0† | 11 - 11 | 18 - 6 | 20-0† | 11 - 5 | 17 - 9 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 5 | 16 - 1 | 20-0† |
| | SPF | No.2 | 12 - 6 | 19 - 4 | 20-0† | 11 - 11 | 18 - 6 | 20-0† | 11 - 5 | 17 - 9 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 5 | 16 - 1 | 20-0† |
| | SPF | No.3/Stud | 11 - 10 | 17 - 5 | 20-0† | 11 - 4 | 16 - 3 | 20-0† | 10 - 9 | 15 - 3 | 18 - 10 | 10 - 1 | 14 - 4 | 17 - 9 | 9 - 3 | 13 - 2 | 16 - 3 |
| | SPF | Standard | 10 - 5 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 7 | - | - | 7 - 10 | - | - |
| 16 | DFL | SS | 12 - 7 | 19 - 6 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 6 | 16 - 2 | 20-0† |
| | DFL | No.1 | 12 - 1 | 18 - 9 | 20-0† | 11 - 7 | 17 - 11 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 1 | 15 - 7 | 20-0† |
| | DFL | No.2 | 11 - 10 | 18 - 4 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 9 - 10 | 15 - 3 | 19 - 1 |
| | DFL | No.3/Stud | 10 - 9 | 15 - 4 | 18 - 11 | 10 - 1 | 14 - 4 | 17 - 8 | 9 - 5 | 13 - 5 | 16 - 7 | 8 - 11 | 12 - 7 | 15 - 7 | 8 - 2 | 11 - 7 | 14 - 4 |
| | DFL | Standard | 9 - 1 | - | - | 8 - 6 | - | - | 8 - 0 | - | - | - | - | - | - | - | - |
| | HF | SS | 11 - 10 | 18 - 4 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 |
| | HF | No.1 | 11 - 7 | 17 - 11 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 2 | 15 - 9 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 |
| | HF | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 |
| | HF | No.3/Stud | 10 - 6 | 14 - 11 | 18 - 6 | 9 - 10 | 13 - 11 | 17 - 3 | 9 - 2 | 13 - 1 | 16 - 2 | 8 - 8 | 12 - 3 | 15 - 2 | 7 - 11 | 11 - 3 | 13 - 11 |
| | HF | Standard | 8 - 11 | - | - | 8 - 4 | - | - | 7 - 9 | - | - | - | - | - | - | - | - |
| | SP | SS | 12 - 4 | 19 - 1 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† |
| | SP | No.1 | 11 - 10 | 18 - 4 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 |
| | SP | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 19 - 2 | 9 - 5 | 14 - 2 | 17 - 7 |
| | SP | No.3 | 9 - 9 | 14 - 0 | 17 - 2 | 9 - 1 | 13 - 1 | 16 - 0 | 8 - 6 | 12 - 3 | 15 - 0 | 8 - 0 | 11 - 6 | 14 - 2 | - | 10 - 7 | 13 - 0 |
| | SP | Stud | 9 - 9 | 14 - 0 | 17 - 2 | 9 - 1 | 13 - 1 | 16 - 0 | 8 - 6 | 12 - 3 | 15 - 0 | 8 - 0 | 11 - 6 | 14 - 2 | - | 10 - 7 | 13 - 0 |
| | SP | Standard | 8 - 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 11 - 7 | 17 - 11 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 2 | 15 - 9 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 |
| | SPF | No.1 | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 18 - 10 |
| | SPF | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 18 - 10 |
| | SPF | No.3/Stud | 10 - 6 | 14 - 11 | 18 - 6 | 9 - 10 | 13 - 11 | 17 - 3 | 9 - 2 | 13 - 1 | 16 - 2 | 8 - 8 | 12 - 3 | 15 - 2 | 7 - 11 | 11 - 3 | 13 - 11 |
| | SPF | Standard | 8 - 11 | - | - | 8 - 4 | - | - | 7 - 9 | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 10 - 11 | 16 - 11 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 1 | 14 - 1 | 18 - 3 |
| | DFL | No.1 | 10 - 6 | 16 - 3 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 8 | 14 - 11 | 18 - 10 | 9 - 3 | 14 - 4 | 17 - 9 | 8 - 9 | 13 - 2 | 16 - 3 |
| | DFL | No.2 | 10 - 3 | 15 - 11 | 20-0† | 9 - 10 | 15 - 2 | 19 - 0 | 9 - 5 | 14 - 5 | 17 - 10 | 9 - 1 | 13 - 6 | 16 - 9 | 8 - 7 | 12 - 5 | 15 - 4 |
| | DFL | No.3/Stud | 8 - 8 | 12 - 4 | 15 - 3 | 8 - 1 | 11 - 6 | 14 - 3 | - | 10 - 9 | 13 - 4 | - | 10 - 2 | 12 - 6 | - | 9 - 4 | 11 - 6 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 3 | 15 - 11 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 18 - 11 | 9 - 1 | 14 - 0 | 18 - 3 | 8 - 7 | 13 - 3 | 17 - 3 |
| | HF | No.1 | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 3 | 14 - 3 | 18 - 6 | 8 - 10 | 13 - 8 | 17 - 6 | 8 - 5 | 12 - 11 | 16 - 0 |
| | HF | No.2 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 3 | 8 - 5 | 13 - 0 | 16 - 3 | 8 - 0 | 12 - 1 | 14 - 11 |
| | HF | No.3/Stud | 8 - 6 | 12 - 0 | 14 - 10 | 7 - 11 | 11 - 3 | 13 - 10 | - | 10 - 6 | 13 - 0 | - | 9 - 11 | 12 - 3 | - | 9 - 1 | 11 - 3 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 |
| | SP | No.1 | 10 - 3 | 15 - 11 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 18 - 11 | 9 - 1 | 14 - 0 | 18 - 1 | 8 - 7 | 13 - 3 | 16 - 7 |
| | SP | No.2 | 9 - 10 | 15 - 2 | 18 - 9 | 9 - 5 | 14 - 1 | 17 - 6 | 9 - 0 | 13 - 3 | 16 - 5 | 8 - 7 | 12 - 5 | 15 - 5 | 7 - 10 | 11 - 5 | 14 - 2 |
| | SP | No.3 | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 6 | 12 - 11 | - | 9 - 10 | 12 - 1 | - | 9 - 3 | 11 - 4 | - | 8 - 6 | 10 - 5 |
| | SP | Stud | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 6 | 12 - 11 | - | 9 - 10 | 12 - 1 | - | 9 - 3 | 11 - 4 | - | 8 - 6 | 10 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 3 | 14 - 3 | 18 - 6 | 8 - 10 | 13 - 8 | 17 - 10 | 8 - 5 | 12 - 11 | 16 - 10 |
| | SPF | No.1 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 9 | 9 - 0 | 13 - 11 | 17 - 6 | 8 - 8 | 13 - 4 | 16 - 6 | 8 - 2 | 12 - 3 | 15 - 2 |
| | SPF | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 9 | 9 - 0 | 13 - 11 | 17 - 6 | 8 - 8 | 13 - 4 | 16 - 6 | 8 - 2 | 12 - 3 | 15 - 2 |
| | SPF | No.3/Stud | 8 - 6 | 12 - 0 | 14 - 10 | 7 - 11 | 11 - 3 | 13 - 10 | - | 10 - 6 | 13 - 0 | - | 9 - 11 | 12 - 3 | - | 9 - 1 | 11 - 3 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B2 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure B**
**H/240**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | HF | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 13 - 9 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 13 - 9 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SPF | Standard | 14-0†† | - | - | 14-0†† | - | - | 14-0†† | - | - | 13 - 9 | - | - |
| 16 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 7 | - | - | 13 - 1 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† |
| | HF | No.2 | 13 - 9 | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† |
| | HF | No.3/Stud | 13 - 4 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | HF | Standard | 13 - 4 | - | - | 13 - 4 | - | - | 12 - 10 | - | - | 12 - 5 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† |
| | SP | No.3 | 13 - 9 | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† |
| | SP | Stud | 13 - 9 | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† |
| | SP | Standard | 13 - 4 | - | - | 13 - 4 | - | - | 12 - 8 | - | - | 12 - 1 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† |
| | SPF | No.3/Stud | 13 - 4 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | SPF | Standard | 13 - 4 | - | - | 13 - 4 | - | - | 12 - 10 | - | - | 12 - 5 | - | - |
| 24 | DFL | SS | 13 - 7 | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† |
| | DFL | No.1 | 13 - 1 | 19 - 11 | 20-0† | 13 - 1 | 19 - 11 | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† |
| | DFL | No.2 | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | DFL | No.3/Stud | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | DFL | Standard | 12 - 1 | - | - | 12 - 0 | - | - | 11 - 4 | - | - | 10 - 9 | - | - |
| | HF | SS | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | HF | No.1 | 12 - 7 | 19 - 1 | 20-0† | 12 - 6 | 19 - 1 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | HF | No.2 | 12 - 0 | 18 - 2 | 20-0† | 11 - 11 | 18 - 2 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | HF | No.3/Stud | 11 - 8 | 17 - 9 | 20-0† | 11 - 7 | 17 - 9 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | HF | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 1 | - | - | 10 - 6 | - | - |
| | SP | SS | 13 - 4 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | SP | No.1 | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | SP | No.2 | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | SP | No.3 | 12 - 0 | 18 - 1 | 20-0† | 11 - 11 | 18 - 1 | 20-0† | 11 - 6 | 17 - 5 | 20-0† | 11 - 1 | 16 - 6 | 20-0† |
| | SP | Stud | 12 - 0 | 18 - 1 | 20-0† | 11 - 11 | 18 - 1 | 20-0† | 11 - 6 | 17 - 5 | 20-0† | 11 - 1 | 16 - 6 | 20-0† |
| | SP | Standard | 11 - 0 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 8 | - | - |
| | SPF | SS | 12 - 7 | 19 - 1 | 20-0† | 12 - 6 | 19 - 1 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SPF | No.1 | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | SPF | No.2 | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | SPF | No.3/Stud | 11 - 8 | 17 - 9 | 20-0† | 11 - 7 | 17 - 9 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | SPF | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 1 | - | - | 10 - 6 | - | - |

See Table 3.20B footnotes.

## Table 3.20B2 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure B H/240 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 8 | 19 - 8 | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 11 - 10 | 18 - 4 | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 13 - 7 | - | - | 13 - 3 | - | - | 12 - 5 | - | - | 11 - 5 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 12 - 10 | 19 - 10 | 20-0† | 12 - 2 | 18 - 10 | 20-0† |
| | HF | No.2 | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 7 | 17 - 11 | 20-0† |
| | HF | No.3/Stud | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 5 | 20-0† |
| | HF | Standard | 13 - 4 | - | - | 12 - 11 | - | - | 12 - 6 | - | - | 11 - 10 | - | - | 11 - 2 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 11 - 10 | 18 - 4 | 20-0† |
| | SP | No.3 | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 7 | 17 - 7 | 20-0† |
| | SP | Stud | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 7 | 17 - 7 | 20-0† |
| | SP | Standard | 13 - 4 | - | - | 12 - 9 | - | - | 12 - 2 | - | - | 11 - 2 | - | - | 10 - 4 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 12 - 10 | 19 - 10 | 20-0† | 12 - 2 | 18 - 10 | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 11 - 10 | 18 - 4 | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† | 11 - 10 | 18 - 4 | 20-0† |
| | SPF | No.3/Stud | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 5 | 20-0† |
| | SPF | Standard | 13 - 4 | - | - | 12 - 11 | - | - | 12 - 6 | - | - | 11 - 10 | - | - | 11 - 2 | - | - |
| 16 | DFL | SS | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 7 | 19 - 5 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | DFL | No.1 | 13 - 7 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 6 | 17 - 9 | 20-0† |
| | DFL | No.2 | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 5 | 20-0† |
| | DFL | No.3/Stud | 12 - 8 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 6 | 20-0† |
| | DFL | Standard | 12 - 8 | - | - | 12 - 1 | - | - | 11 - 7 | - | - | 10 - 7 | - | - | 9 - 10 | - | - |
| | HF | SS | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 5 | 20-0† |
| | HF | No.1 | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 7 | 17 - 11 | 20-0† | 11 - 0 | 17 - 0 | 20-0† |
| | HF | No.2 | 12 - 4 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 18 - 0 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 5 | 16 - 2 | 20-0† |
| | HF | No.3/Stud | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 9 | 19 - 11 |
| | HF | Standard | 12 - 0 | - | - | 11 - 8 | - | - | 11 - 4 | - | - | 10 - 4 | - | - | 9 - 7 | - | - |
| | SP | SS | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 9 | 18 - 2 | 20-0† |
| | SP | No.1 | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 5 | 20-0† |
| | SP | No.2 | 12 - 8 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 7 | 20-0† |
| | SP | No.3 | 12 - 4 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 17 - 9 | 20-0† | 11 - 0 | 16 - 4 | 20-0† | 10 - 5 | 15 - 1 | 18 - 6 |
| | SP | Stud | 12 - 4 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 17 - 9 | 20-0† | 11 - 0 | 16 - 4 | 20-0† | 10 - 5 | 15 - 1 | 18 - 6 |
| | SP | Standard | 11 - 6 | - | - | 10 - 11 | - | - | 10 - 5 | - | - | 9 - 7 | - | - | 8 - 10 | - | - |
| | SPF | SS | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 7 | 17 - 11 | 20-0† | 11 - 0 | 17 - 0 | 20-0† |
| | SPF | No.1 | 12 - 8 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 7 | 20-0† |
| | SPF | No.2 | 12 - 8 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 7 | 20-0† |
| | SPF | No.3/Stud | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 9 | 19 - 11 |
| | SPF | Standard | 12 - 0 | - | - | 11 - 8 | - | - | 11 - 4 | - | - | 10 - 4 | - | - | 9 - 7 | - | - |
| 24 | DFL | SS | 12 - 3 | 19 - 0 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 4 | 16 - 0 | 20-0† |
| | DFL | No.1 | 11 - 10 | 18 - 3 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 0 | 15 - 5 | 20-0† |
| | DFL | No.2 | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | DFL | No.3/Stud | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 5 | 20-0† | 10 - 4 | 15 - 8 | 19 - 4 | 9 - 10 | 14 - 4 | 17 - 9 | 9 - 4 | 13 - 3 | 16 - 5 |
| | DFL | Standard | 10 - 3 | - | - | 9 - 9 | - | - | 9 - 4 | - | - | 8 - 7 | - | - | 7 - 11 | - | - |
| | HF | SS | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | HF | No.1 | 11 - 3 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 8 | 16 - 5 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 9 | 19 - 2 |
| | HF | No.2 | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 8 | 20-0† | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 1 | 14 - 1 | 18 - 3 |
| | HF | No.3/Stud | 10 - 5 | 16 - 2 | 20-0† | 10 - 2 | 15 - 8 | 19 - 9 | 9 - 10 | 15 - 2 | 18 - 10 | 9 - 4 | 14 - 0 | 17 - 4 | 8 - 10 | 12 - 11 | 16 - 0 |
| | HF | Standard | 10 - 0 | - | - | 9 - 6 | - | - | 9 - 1 | - | - | 8 - 4 | - | - | - | - | - |
| | SP | SS | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 9 | 20-0† |
| | SP | No.1 | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | SP | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | SP | No.3 | 10 - 9 | 15 - 8 | 19 - 3 | 10 - 5 | 14 - 11 | 18 - 5 | 9 - 11 | 14 - 3 | 17 - 7 | 9 - 2 | 13 - 1 | 16 - 1 | 8 - 5 | 12 - 1 | 14 - 11 |
| | SP | Stud | 10 - 9 | 15 - 8 | 19 - 3 | 10 - 5 | 14 - 11 | 18 - 5 | 9 - 11 | 14 - 3 | 17 - 7 | 9 - 2 | 13 - 1 | 16 - 1 | 8 - 5 | 12 - 1 | 14 - 11 |
| | SP | Standard | 9 - 3 | - | - | 8 - 10 | - | - | 8 - 5 | - | - | - | - | - | - | - | - |
| | SPF | SS | 11 - 3 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 8 | 16 - 5 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 9 | 19 - 2 |
| | SPF | No.1 | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | SPF | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | SPF | No.3/Stud | 10 - 5 | 16 - 2 | 20-0† | 10 - 2 | 15 - 8 | 19 - 9 | 9 - 10 | 15 - 2 | 18 - 10 | 9 - 4 | 14 - 0 | 17 - 4 | 8 - 10 | 12 - 11 | 16 - 0 |
| | SPF | Standard | 10 - 0 | - | - | 9 - 6 | - | - | 9 - 1 | - | - | 8 - 4 | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B2 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure B H/240 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 12 - 7 | 19 - 6 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 6 | 16 - 2 | 20-0† |
| | DFL | No.1 | 12 - 1 | 18 - 9 | 20-0† | 11 - 7 | 17 - 11 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 1 | 15 - 7 | 20-0† |
| | DFL | No.2 | 11 - 10 | 18 - 4 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 |
| | DFL | No.3/Stud | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 8 | 20-0† | 10 - 4 | 15 - 8 | 19 - 4 | 9 - 11 | 14 - 8 | 18 - 2 | 9 - 5 | 13 - 6 | 16 - 8 |
| | DFL | Standard | 10 - 8 | - | - | 9 - 11 | - | - | 9 - 4 | - | - | 8 - 9 | - | - | 8 - 0 | - | - |
| | HF | SS | 11 - 10 | 18 - 4 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 |
| | HF | No.1 | 11 - 7 | 17 - 11 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 2 | 15 - 9 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 |
| | HF | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 |
| | HF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 18 - 10 | 9 - 5 | 14 - 4 | 17 - 9 | 8 - 11 | 13 - 2 | 16 - 3 |
| | HF | Standard | 10 - 5 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 7 | - | - | 7 - 10 | - | - |
| | SP | SS | 12 - 4 | 19 - 1 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† |
| | SP | No.1 | 11 - 10 | 18 - 4 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 |
| | SP | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 18 - 11 |
| | SP | No.3 | 11 - 0 | 16 - 4 | 20-0† | 10 - 6 | 15 - 3 | 18 - 9 | 9 - 11 | 14 - 3 | 17 - 6 | 9 - 4 | 13 - 5 | 16 - 6 | 8 - 7 | 12 - 4 | 15 - 2 |
| | SP | Stud | 11 - 0 | 16 - 4 | 20-0† | 10 - 6 | 15 - 3 | 18 - 9 | 9 - 11 | 14 - 3 | 17 - 6 | 9 - 4 | 13 - 5 | 16 - 6 | 8 - 7 | 12 - 4 | 15 - 2 |
| | SP | Standard | 9 - 7 | - | - | 9 - 0 | - | - | 8 - 5 | - | - | 7 - 11 | - | - | - | - | - |
| | SPF | SS | 11 - 7 | 17 - 11 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 2 | 15 - 9 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 |
| | SPF | No.1 | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 18 - 11 |
| | SPF | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 18 - 11 |
| | SPF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 18 - 10 | 9 - 5 | 14 - 4 | 17 - 9 | 8 - 11 | 13 - 2 | 16 - 3 |
| | SPF | Standard | 10 - 5 | - | - | 9 - 8 | - | - | 9 - 1 | - | - | 8 - 7 | - | - | 7 - 10 | - | - |
| 16 | DFL | SS | 11 - 5 | 17 - 7 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 6 | 14 - 8 | 19 - 1 |
| | DFL | No.1 | 10 - 11 | 16 - 11 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 | 9 - 1 | 14 - 1 | 18 - 4 |
| | DFL | No.2 | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 |
| | DFL | No.3/Stud | 10 - 3 | 15 - 4 | 18 - 11 | 9 - 9 | 14 - 4 | 17 - 8 | 9 - 4 | 13 - 5 | 16 - 7 | 8 - 11 | 12 - 7 | 15 - 7 | 8 - 2 | 11 - 7 | 14 - 4 |
| | DFL | Standard | 9 - 1 | - | - | 8 - 6 | - | - | 8 - 0 | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 |
| | HF | No.1 | 10 - 6 | 16 - 2 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 3 | 14 - 3 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 |
| | HF | No.2 | 10 - 0 | 15 - 5 | 20-0† | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 2 | 14 - 2 | 18 - 4 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 4 | 12 - 10 | 16 - 8 |
| | HF | No.3/Stud | 9 - 8 | 14 - 11 | 18 - 6 | 9 - 3 | 13 - 11 | 17 - 3 | 8 - 11 | 13 - 1 | 16 - 2 | 8 - 6 | 12 - 3 | 15 - 2 | 7 - 11 | 11 - 3 | 13 - 11 |
| | HF | Standard | 8 - 11 | - | - | 8 - 4 | - | - | 7 - 9 | - | - | - | - | - | - | - | - |
| 16 | SP | SS | 11 - 2 | 17 - 3 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 8 |
| | SP | No.1 | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 |
| | SP | No.2 | 10 - 3 | 15 - 10 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 4 | 14 - 6 | 18 - 10 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 6 | 13 - 2 | 17 - 2 |
| | SP | No.3 | 9 - 9 | 14 - 0 | 17 - 2 | 9 - 1 | 13 - 1 | 16 - 0 | 8 - 6 | 12 - 3 | 15 - 0 | 8 - 0 | 11 - 6 | 14 - 2 | - | 10 - 7 | 13 - 0 |
| | SP | Stud | 9 - 9 | 14 - 0 | 17 - 2 | 9 - 1 | 13 - 1 | 16 - 0 | 8 - 6 | 12 - 3 | 15 - 0 | 8 - 0 | 11 - 6 | 14 - 2 | - | 10 - 7 | 13 - 0 |
| | SP | Standard | 8 - 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 6 | 16 - 2 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 3 | 14 - 3 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 |
| | SPF | No.1 | 10 - 3 | 15 - 10 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 4 | 14 - 6 | 18 - 10 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 6 | 13 - 2 | 17 - 2 |
| | SPF | No.2 | 10 - 3 | 15 - 10 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 4 | 14 - 6 | 18 - 10 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 6 | 13 - 2 | 17 - 2 |
| | SPF | No.3/Stud | 9 - 8 | 14 - 11 | 18 - 6 | 9 - 3 | 13 - 11 | 17 - 3 | 8 - 11 | 13 - 1 | 16 - 2 | 8 - 6 | 12 - 3 | 15 - 2 | 7 - 11 | 11 - 3 | 13 - 11 |
| | SPF | Standard | 8 - 11 | - | - | 8 - 4 | - | - | 7 - 9 | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 9 - 11 | 15 - 3 | 19 - 10 | 9 - 5 | 14 - 7 | 19 - 0 | 9 - 1 | 14 - 0 | 18 - 2 | 8 - 8 | 13 - 5 | 17 - 6 | 8 - 3 | 12 - 9 | 16 - 6 |
| | DFL | No.1 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 1 | 14 - 1 | 18 - 3 | 8 - 9 | 13 - 6 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 10 | 7 - 11 | 12 - 3 | 15 - 11 |
| | DFL | No.2 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 4 |
| | DFL | No.3/Stud | 8 - 8 | 12 - 4 | 15 - 3 | 8 - 1 | 11 - 6 | 14 - 3 | - | 10 - 9 | 13 - 4 | - | 10 - 2 | 12 - 6 | - | 9 - 4 | 11 - 6 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 7 |
| | HF | No.1 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 8 | 13 - 5 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 9 | 8 - 0 | 12 - 5 | 16 - 1 | - | 11 - 9 | 15 - 3 |
| | HF | No.2 | 8 - 8 | 13 - 5 | 17 - 5 | 8 - 3 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 4 | - | 11 - 2 | 14 - 6 |
| | HF | No.3/Stud | 8 - 5 | 12 - 0 | 14 - 10 | 7 - 11 | 11 - 3 | 13 - 10 | - | 10 - 6 | 13 - 0 | - | 9 - 11 | 12 - 3 | - | 9 - 1 | 11 - 3 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 3 | 14 - 4 | 18 - 8 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | SP | No.1 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 7 |
| | SP | No.2 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 4 | 7 - 10 | 12 - 1 | 15 - 5 | - | 11 - 5 | 14 - 2 |
| | SP | No.3 | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 6 | 12 - 11 | - | 9 - 10 | 12 - 1 | - | 9 - 3 | 11 - 4 | - | 8 - 6 | 10 - 5 |
| | SP | Stud | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 6 | 12 - 11 | - | 9 - 10 | 12 - 1 | - | 9 - 3 | 11 - 4 | - | 8 - 6 | 10 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 8 | 13 - 5 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 9 | 8 - 0 | 12 - 5 | 16 - 1 | - | 11 - 9 | 15 - 3 |
| | SPF | No.1 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 4 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 5 | 14 - 10 |
| | SPF | No.2 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 4 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 5 | 14 - 10 |
| | SPF | No.3/Stud | 8 - 5 | 12 - 0 | 14 - 10 | 7 - 11 | 11 - 3 | 13 - 10 | - | 10 - 6 | 13 - 0 | - | 9 - 11 | 12 - 3 | - | 9 - 1 | 11 - 3 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B3 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure B**
**H/360**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | DFL | Standard | 13 - 6 | - | - | 13 - 6 | - | - | 13 - 0 | - | - | 12 - 7 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | HF | No.1 | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† |
| | HF | No.2 | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 8 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | HF | No.3/Stud | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | HF | Standard | 12 - 10 | - | - | 12 - 9 | - | - | 12 - 4 | - | - | 11 - 11 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† |
| | SP | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SP | No.3 | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 8 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | SP | Stud | 13 - 2 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 8 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | SP | Standard | 12 - 10 | - | - | 12 - 9 | - | - | 12 - 4 | - | - | 11 - 11 | - | - |
| | SPF | SS | 13 - 10 | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† |
| | SPF | No.1 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SPF | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SPF | No.3/Stud | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | SPF | Standard | 12 - 10 | - | - | 12 - 9 | - | - | 12 - 4 | - | - | 11 - 11 | - | - |
| 16 | DFL | SS | 13 - 7 | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† |
| | DFL | No.1 | 13 - 1 | 19 - 11 | 20-0† | 13 - 1 | 19 - 11 | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† |
| | DFL | No.2 | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | DFL | No.3/Stud | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | DFL | Standard | 12 - 4 | - | - | 12 - 2 | - | - | 11 - 9 | - | - | 11 - 5 | - | - |
| | HF | SS | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | HF | No.1 | 12 - 7 | 19 - 1 | 20-0† | 12 - 6 | 19 - 1 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | HF | No.2 | 12 - 0 | 18 - 2 | 20-0† | 11 - 11 | 18 - 2 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | HF | No.3/Stud | 11 - 8 | 17 - 9 | 20-0† | 11 - 7 | 17 - 9 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | HF | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 9 | - | - |
| | SP | SS | 13 - 4 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 5 | 19 - 3 | 20-0† |
| | SP | No.1 | 12 - 10 | 19 - 6 | 20-0† | 12 - 9 | 19 - 6 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 6 | 20-0† |
| | SP | No.2 | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | SP | No.3 | 12 - 0 | 18 - 2 | 20-0† | 11 - 11 | 18 - 2 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | SP | Stud | 12 - 0 | 18 - 2 | 20-0† | 11 - 11 | 18 - 2 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | SP | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 9 | - | - |
| | SPF | SS | 12 - 7 | 19 - 1 | 20-0† | 12 - 6 | 19 - 1 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SPF | No.1 | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | SPF | No.2 | 12 - 4 | 18 - 8 | 20-0† | 12 - 2 | 18 - 8 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 7 | 20-0† |
| | SPF | No.3/Stud | 11 - 8 | 17 - 9 | 20-0† | 11 - 7 | 17 - 9 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | SPF | Standard | 11 - 8 | - | - | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 9 | - | - |
| 24 | DFL | SS | 11 - 11 | 18 - 1 | 20-0† | 11 - 9 | 18 - 1 | 20-0† | 11 - 5 | 17 - 7 | 20-0† | 11 - 0 | 17 - 0 | 20-0† |
| | DFL | No.1 | 11 - 6 | 17 - 5 | 20-0† | 11 - 4 | 17 - 5 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | DFL | No.2 | 11 - 3 | 17 - 1 | 20-0† | 11 - 1 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† |
| | DFL | No.3/Stud | 10 - 9 | 16 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 3 | 19 - 11 |
| | DFL | Standard | 10 - 9 | - | - | 10 - 7 | - | - | 10 - 3 | - | - | 9 - 11 | - | - |
| | HF | SS | 11 - 3 | 17 - 1 | 20-0† | 11 - 1 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† |
| | HF | No.1 | 11 - 0 | 16 - 8 | 20-0† | 10 - 10 | 16 - 8 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | HF | No.2 | 10 - 6 | 15 - 11 | 20-0† | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 |
| | HF | No.3/Stud | 10 - 2 | 15 - 6 | 19 - 11 | 10 - 1 | 15 - 6 | 19 - 11 | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 6 | 18 - 10 |
| | HF | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 8 | - | - | 9 - 4 | - | - |
| | SP | SS | 11 - 8 | 17 - 9 | 20-0† | 11 - 7 | 17 - 9 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | SP | No.1 | 11 - 3 | 17 - 1 | 20-0† | 11 - 1 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† |
| | SP | No.2 | 10 - 9 | 16 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 3 | 19 - 11 |
| | SP | No.3 | 10 - 6 | 15 - 11 | 20-0† | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 |
| | SP | Stud | 10 - 6 | 15 - 11 | 20-0† | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 |
| | SP | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 8 | - | - | 9 - 4 | - | - |
| | SPF | SS | 11 - 0 | 16 - 8 | 20-0† | 10 - 10 | 16 - 8 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SPF | No.1 | 10 - 9 | 16 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 3 | 19 - 11 |
| | SPF | No.2 | 10 - 9 | 16 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 3 | 19 - 11 |
| | SPF | No.3/Stud | 10 - 2 | 15 - 6 | 19 - 11 | 10 - 1 | 15 - 6 | 19 - 11 | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 6 | 18 - 10 |
| | SPF | Standard | 10 - 2 | - | - | 10 - 1 | - | - | 9 - 8 | - | - | 9 - 4 | - | - |

See Table 3.20B footnotes.

## Table 3.20B3 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure B H/360 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 7 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 5 | 17 - 9 | 20-0† |
| | DFL | No.1 | 13 - 0 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† | 11 - 7 | 17 - 11 | 20-0† | 11 - 0 | 17 - 1 | 20-0† |
| | DFL | No.2 | 12 - 9 | 19 - 9 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 4 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | DFL | No.3/Stud | 12 - 2 | 18 - 10 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | DFL | Standard | 12 - 2 | - | - | 11 - 10 | - | - | 11 - 6 | - | - | 10 - 10 | - | - | 10 - 4 | - | - |
| | HF | SS | 12 - 9 | 19 - 9 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 4 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | HF | No.1 | 12 - 6 | 19 - 4 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | HF | No.2 | 11 - 10 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | HF | No.3/Stud | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | HF | Standard | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 9 | - | - |
| | SP | SS | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 5 | 20-0† |
| | SP | No.1 | 12 - 9 | 19 - 9 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 4 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† |
| | SP | No.2 | 12 - 2 | 18 - 10 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | SP | No.3 | 11 - 10 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | SP | Stud | 11 - 10 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | SP | Standard | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 9 | - | - |
| | SPF | SS | 12 - 6 | 19 - 4 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SPF | No.1 | 12 - 2 | 18 - 10 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | SPF | No.2 | 12 - 2 | 18 - 10 | 20-0† | 11 - 10 | 18 - 3 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 9 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | SPF | No.3/Stud | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | SPF | Standard | 11 - 7 | - | - | 11 - 2 | - | - | 10 - 10 | - | - | 10 - 3 | - | - | 9 - 9 | - | - |
| 16 | DFL | SS | 12 - 3 | 19 - 0 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 4 | 16 - 0 | 20-0† |
| | DFL | No.1 | 11 - 10 | 18 - 3 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 1 | 17 - 2 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 0 | 15 - 5 | 20-0† |
| | DFL | No.2 | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | DFL | No.3/Stud | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | DFL | Standard | 11 - 0 | - | - | 10 - 8 | - | - | 10 - 4 | - | - | 9 - 10 | - | - | 9 - 4 | - | - |
| | HF | SS | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | HF | No.1 | 11 - 3 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 8 | 16 - 5 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 9 | 19 - 2 |
| | HF | No.2 | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 8 | 20-0† | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 1 | 14 - 1 | 18 - 3 |
| | HF | No.3/Stud | 10 - 5 | 16 - 2 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 8 | 8 - 10 | 13 - 8 | 17 - 9 |
| | HF | Standard | 10 - 5 | - | - | 10 - 2 | - | - | 9 - 10 | - | - | 9 - 4 | - | - | 8 - 10 | - | - |
| | SP | SS | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 9 | 20-0† |
| | SP | No.1 | 11 - 7 | 17 - 10 | 20-0† | 11 - 2 | 17 - 4 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 |
| | SP | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | SP | No.3 | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 8 | 20-0† | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 1 | 14 - 1 | 18 - 3 |
| | SP | Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 8 | 20-0† | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 1 | 14 - 1 | 18 - 3 |
| | SP | Standard | 10 - 5 | - | - | 10 - 2 | - | - | 9 - 10 | - | - | 9 - 4 | - | - | 8 - 10 | - | - |
| | SPF | SS | 11 - 3 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 8 | 16 - 5 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 9 | 19 - 2 |
| | SPF | No.1 | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | SPF | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | SPF | No.3/Stud | 10 - 5 | 16 - 2 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 8 | 8 - 10 | 13 - 8 | 17 - 9 |
| | SPF | Standard | 10 - 5 | - | - | 10 - 2 | - | - | 9 - 10 | - | - | 9 - 4 | - | - | 8 - 10 | - | - |
| 24 | DFL | SS | 10 - 8 | 16 - 6 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 0 | 13 - 11 | 18 - 1 |
| | DFL | No.1 | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 4 | 20 - 0 | 9 - 8 | 14 - 11 | 19 - 5 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 8 | 13 - 5 | 17 - 5 |
| | DFL | No.2 | 10 - 0 | 15 - 6 | 20-0† | 9 - 9 | 15 - 0 | 19 - 7 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 | 8 - 6 | 13 - 1 | 17 - 0 |
| | DFL | No.3/Stud | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | DFL | Standard | 9 - 7 | - | - | 9 - 3 | - | - | 9 - 0 | - | - | 8 - 6 | - | - | 7 - 11 | - | - |
| | HF | SS | 10 - 0 | 15 - 6 | 20-0† | 9 - 9 | 15 - 0 | 19 - 7 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 | 8 - 6 | 13 - 1 | 17 - 0 |
| | HF | No.1 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 3 | 14 - 3 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 3 | 12 - 10 | 16 - 8 |
| | HF | No.2 | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 1 | 14 - 0 | 18 - 2 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 2 | 15 - 10 |
| | HF | No.3/Stud | 9 - 1 | 14 - 0 | 18 - 3 | 8 - 10 | 13 - 7 | 17 - 8 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 10 | 15 - 5 |
| | HF | Standard | 9 - 1 | - | - | 8 - 10 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |
| | SP | SS | 10 - 5 | 16 - 2 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 8 | 8 - 10 | 13 - 8 | 17 - 9 |
| | SP | No.1 | 10 - 0 | 15 - 6 | 20-0† | 9 - 9 | 15 - 0 | 19 - 7 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 | 8 - 6 | 13 - 1 | 17 - 0 |
| | SP | No.2 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | SP | No.3 | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 1 | 14 - 0 | 18 - 2 | 8 - 9 | 13 - 7 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 1 | 7 - 11 | 12 - 1 | 14 - 11 |
| | SP | Stud | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 1 | 14 - 0 | 18 - 2 | 8 - 9 | 13 - 7 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 1 | 7 - 11 | 12 - 1 | 14 - 11 |
| | SP | Standard | 9 - 1 | - | - | 8 - 10 | - | - | 8 - 5 | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 3 | 14 - 3 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 3 | 12 - 10 | 16 - 8 |
| | SPF | No.1 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | SPF | No.2 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | SPF | No.3/Stud | 9 - 1 | 14 - 0 | 18 - 3 | 8 - 10 | 13 - 7 | 17 - 8 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 10 | 15 - 5 |
| | SPF | Standard | 9 - 1 | - | - | 8 - 10 | - | - | 8 - 6 | - | - | 8 - 1 | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B3 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure B**
**H/360**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 10 - 11 | 16 - 11 | 20-0† | 10 - 5 | 16 - 2 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 1 | 14 - 1 | 18 - 3 |
| | DFL | No.1 | 10 - 6 | 16 - 3 | 20-0† | 10 - 0 | 15 - 6 | 20-0† | 9 - 8 | 14 - 11 | 19 - 4 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 |
| | DFL | No.2 | 10 - 3 | 15 - 11 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 18 - 11 | 9 - 1 | 14 - 0 | 18 - 3 | 8 - 7 | 13 - 3 | 17 - 3 |
| | DFL | No.3/Stud | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 10 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 2 | 12 - 8 | 16 - 5 |
| | DFL | Standard | 9 - 10 | - | - | 9 - 5 | - | - | 9 - 0 | - | - | 8 - 8 | - | - | 8 - 0 | - | - |
| | HF | SS | 10 - 3 | 15 - 11 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 18 - 11 | 9 - 1 | 14 - 0 | 18 - 3 | 8 - 7 | 13 - 3 | 17 - 3 |
| | HF | No.1 | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 3 | 14 - 3 | 18 - 6 | 8 - 10 | 13 - 8 | 17 - 10 | 8 - 5 | 12 - 11 | 16 - 10 |
| | HF | No.2 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 |
| | HF | No.3/Stud | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 7 |
| | HF | Standard | 9 - 4 | - | - | 8 - 11 | - | - | 8 - 6 | - | - | 8 - 2 | - | - | 7 - 9 | - | - |
| | SP | SS | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 11 |
| | SP | No.1 | 10 - 3 | 15 - 11 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 18 - 11 | 9 - 1 | 14 - 0 | 18 - 3 | 8 - 7 | 13 - 3 | 17 - 3 |
| | SP | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 10 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 2 | 12 - 8 | 16 - 5 |
| | SP | No.3 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 6 | 8 - 5 | 13 - 0 | 16 - 6 | 8 - 0 | 12 - 4 | 15 - 2 |
| | SP | Stud | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 6 | 8 - 5 | 13 - 0 | 16 - 6 | 8 - 0 | 12 - 4 | 15 - 2 |
| | SP | Standard | 9 - 4 | - | - | 8 - 11 | - | - | 8 - 5 | - | - | 7 - 11 | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 10 | 19 - 4 | 9 - 3 | 14 - 3 | 18 - 6 | 8 - 10 | 13 - 8 | 17 - 10 | 8 - 5 | 12 - 11 | 16 - 10 |
| | SPF | No.1 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 10 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 2 | 12 - 8 | 16 - 5 |
| | SPF | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 10 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 2 | 12 - 8 | 16 - 5 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 7 |
| | SPF | Standard | 9 - 4 | - | - | 8 - 11 | - | - | 8 - 6 | - | - | 8 - 2 | - | - | 7 - 9 | - | - |
| 16 | DFL | SS | 9 - 11 | 15 - 3 | 19 - 10 | 9 - 5 | 14 - 7 | 19 - 0 | 9 - 1 | 14 - 0 | 18 - 2 | 8 - 8 | 13 - 5 | 17 - 6 | 8 - 3 | 12 - 9 | 16 - 6 |
| | DFL | No.1 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 1 | 14 - 1 | 18 - 3 | 8 - 9 | 13 - 6 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 10 | 7 - 11 | 12 - 3 | 15 - 11 |
| | DFL | No.2 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 7 |
| | DFL | No.3/Stud | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 4 | 7 - 10 | 12 - 1 | 15 - 7 | - | 11 - 5 | 14 - 4 |
| | DFL | Standard | 8 - 11 | - | - | 8 - 6 | - | - | 8 - 0 | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 7 |
| | HF | No.1 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 8 | 13 - 5 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 9 | 8 - 0 | 12 - 5 | 16 - 1 | - | 11 - 9 | 15 - 3 |
| | HF | No.2 | 8 - 8 | 13 - 5 | 17 - 5 | 8 - 3 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 4 | - | 11 - 2 | 14 - 6 |
| | HF | No.3/Stud | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 5 | 16 - 2 | - | 11 - 11 | 15 - 6 | - | 11 - 6 | 14 - 11 | - | 10 - 10 | 13 - 11 |
| | HF | Standard | 8 - 5 | - | - | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 3 | 14 - 4 | 18 - 8 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | SP | No.1 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 9 | 17 - 11 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 9 | 12 - 0 | 15 - 7 |
| | SP | No.2 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 4 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 5 | 14 - 10 |
| | SP | No.3 | 8 - 8 | 13 - 5 | 17 - 2 | 8 - 3 | 12 - 10 | 16 - 0 | 7 - 11 | 12 - 3 | 15 - 0 | - | 11 - 6 | 14 - 2 | - | 10 - 7 | 13 - 0 |
| | SP | Stud | 8 - 8 | 13 - 5 | 17 - 2 | 8 - 3 | 12 - 10 | 16 - 0 | 7 - 11 | 12 - 3 | 15 - 0 | - | 11 - 6 | 14 - 2 | - | 10 - 7 | 13 - 0 |
| | SP | Standard | 8 - 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 8 | 13 - 5 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 9 | 8 - 0 | 12 - 5 | 16 - 1 | - | 11 - 9 | 15 - 3 |
| | SPF | No.1 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 4 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 5 | 14 - 10 |
| | SPF | No.2 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 4 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 5 | 14 - 10 |
| | SPF | No.3/Stud | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 5 | 16 - 2 | - | 11 - 11 | 15 - 6 | - | 11 - 6 | 14 - 11 | - | 10 - 10 | 13 - 11 |
| | SPF | Standard | 8 - 5 | - | - | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 2 | 12 - 8 | 16 - 6 | 7 - 10 | 12 - 2 | 15 - 10 | - | 11 - 8 | 15 - 2 | - | 11 - 1 | 14 - 4 |
| | DFL | No.1 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 11 | 12 - 2 | 15 - 10 | - | 11 - 8 | 15 - 2 | - | 11 - 3 | 14 - 7 | - | 10 - 7 | 13 - 10 |
| | DFL | No.2 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 11 | - | 11 - 0 | 14 - 4 | - | 10 - 5 | 13 - 6 |
| | DFL | No.3/Stud | - | 11 - 11 | 15 - 3 | - | 11 - 5 | 14 - 3 | - | 10 - 9 | 13 - 4 | - | 10 - 2 | 12 - 6 | - | 9 - 4 | 11 - 6 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 11 | - | 11 - 0 | 14 - 4 | - | 10 - 5 | 13 - 6 |
| | HF | No.1 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 15 - 2 | - | 11 - 2 | 14 - 7 | - | 10 - 9 | 14 - 0 | - | 10 - 2 | 13 - 3 |
| | HF | No.2 | - | 11 - 7 | 15 - 1 | - | 11 - 1 | 14 - 5 | - | 10 - 8 | 13 - 10 | - | 10 - 3 | 13 - 4 | - | 9 - 8 | 12 - 7 |
| | HF | No.3/Stud | - | 11 - 4 | 14 - 8 | - | 10 - 10 | 13 - 10 | - | 10 - 4 | 13 - 0 | - | 9 - 11 | 12 - 3 | - | 9 - 1 | 11 - 3 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 5 | 16 - 2 | - | 11 - 11 | 15 - 6 | - | 11 - 6 | 14 - 11 | - | 10 - 10 | 14 - 1 |
| | SP | No.1 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 11 | - | 11 - 0 | 14 - 4 | - | 10 - 5 | 13 - 6 |
| | SP | No.2 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 10 | - | 10 - 11 | 14 - 2 | - | 10 - 6 | 13 - 8 | - | 9 - 11 | 12 - 11 |
| | SP | No.3 | - | 11 - 3 | 13 - 10 | - | 10 - 6 | 12 - 11 | - | 9 - 10 | 12 - 1 | - | 9 - 3 | 11 - 4 | - | 8 - 6 | 10 - 5 |
| | SP | Stud | - | 11 - 3 | 13 - 10 | - | 10 - 6 | 12 - 11 | - | 9 - 10 | 12 - 1 | - | 9 - 3 | 11 - 4 | - | 8 - 6 | 10 - 5 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 15 - 2 | - | 11 - 2 | 14 - 7 | - | 10 - 9 | 14 - 0 | - | 10 - 2 | 13 - 3 |
| | SPF | No.1 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 10 | - | 10 - 11 | 14 - 2 | - | 10 - 6 | 13 - 8 | - | 9 - 11 | 12 - 11 |
| | SPF | No.2 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 10 | - | 10 - 11 | 14 - 2 | - | 10 - 6 | 13 - 8 | - | 9 - 11 | 12 - 11 |
| | SPF | No.3/Stud | - | 11 - 4 | 14 - 8 | - | 10 - 10 | 13 - 10 | - | 10 - 4 | 13 - 0 | - | 9 - 11 | 12 - 3 | - | 9 - 1 | 11 - 3 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B4 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure C**
**H/180**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 9 | - | - | 13 - 1 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† |
| | HF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | HF | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 5 | - | - | 12 - 9 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† |
| | SP | Standard | 13 - 11 | - | - | 13 - 2 | - | - | 12 - 5 | - | - | 11 - 10 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SPF | No.3/Stud | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | SPF | Standard | 14-0†† | - | - | 14-0†† | - | - | 13 - 5 | - | - | 12 - 9 | - | - |
| 16 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 19 - 10 | 20-0† | 12 - 11 | 18 - 10 | 20-0† |
| | DFL | Standard | 13 - 3 | - | - | 12 - 6 | - | - | 11 - 10 | - | - | 11 - 2 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | HF | No.3/Stud | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 4 | 20-0† | 12 - 3 | 18 - 4 | 20-0† |
| | HF | Standard | 12 - 11 | - | - | 12 - 2 | - | - | 11 - 6 | - | - | 10 - 11 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 13 - 4 | 19 - 2 | 20-0† | 12 - 7 | 18 - 1 | 20-0† | 12 - 0 | 17 - 2 | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 13 - 4 | 19 - 2 | 20-0† | 12 - 7 | 18 - 1 | 20-0† | 12 - 0 | 17 - 2 | 20-0† |
| | SP | Standard | 11 - 11 | - | - | 11 - 3 | - | - | 10 - 8 | - | - | 10 - 1 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SPF | No.3/Stud | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 4 | 20-0† | 12 - 3 | 18 - 4 | 20-0† |
| | SPF | Standard | 12 - 11 | - | - | 12 - 2 | - | - | 11 - 6 | - | - | 10 - 11 | - | - |
| 24 | DFL | SS | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 4 | 20-0† |
| | DFL | No.1 | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 19 - 11 | 20-0† | 12 - 5 | 19 - 3 | 20-0† | 12 - 0 | 18 - 7 | 20-0† |
| | DFL | No.2 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† |
| | DFL | No.3/Stud | 12 - 6 | 17 - 11 | 20-0† | 11 - 10 | 16 - 11 | 20-0† | 11 - 3 | 16 - 0 | 19 - 9 | 10 - 8 | 15 - 2 | 18 - 9 |
| | DFL | Standard | 10 - 8 | - | - | 10 - 0 | - | - | 9 - 6 | - | - | 9 - 0 | - | - |
| | HF | SS | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† |
| | HF | No.1 | 12 - 10 | 19 - 10 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† |
| | HF | No.2 | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† |
| | HF | No.3/Stud | 11 - 10 | 17 - 5 | 20-0† | 11 - 5 | 16 - 5 | 20-0† | 10 - 11 | 15 - 7 | 19 - 3 | 10 - 5 | 14 - 9 | 18 - 3 |
| | HF | Standard | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 3 | - | - | 8 - 10 | - | - |
| | SP | SS | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | SP | No.1 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† |
| | SP | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 8 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 3 | 17 - 4 | 20-0† |
| | SP | No.3 | 11 - 4 | 16 - 4 | 20-0† | 10 - 9 | 15 - 5 | 18 - 11 | 10 - 2 | 14 - 7 | 17 - 11 | 9 - 8 | 13 - 10 | 17 - 0 |
| | SP | Stud | 11 - 4 | 16 - 4 | 20-0† | 10 - 9 | 15 - 5 | 18 - 11 | 10 - 2 | 14 - 7 | 17 - 11 | 9 - 8 | 13 - 10 | 17 - 0 |
| | SP | Standard | 9 - 7 | - | - | 9 - 1 | - | - | 8 - 7 | - | - | 8 - 2 | - | - |
| | SPF | SS | 12 - 10 | 19 - 10 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† |
| | SPF | No.1 | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 8 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 3 | 17 - 4 | 20-0† |
| | SPF | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 8 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 3 | 17 - 4 | 20-0† |
| | SPF | No.3/Stud | 11 - 10 | 17 - 5 | 20-0† | 11 - 5 | 16 - 5 | 20-0† | 10 - 11 | 15 - 7 | 19 - 3 | 10 - 5 | 14 - 9 | 18 - 3 |
| | SPF | Standard | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 3 | - | - | 8 - 10 | - | - |

See Table 3.20B footnotes.

## Table 3.20B4 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure C H/180 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | DFL | No.3/Stud | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 19 - 11 | 20-0† | 13 - 0 | 19 - 1 | 20-0† | 12 - 4 | 17 - 6 | 20-0† | 11 - 4 | 16 - 2 | 20 - 0 |
| | DFL | Standard | 12 - 5 | - | - | 11 - 10 | - | - | 11 - 4 | - | - | 10 - 5 | - | - | 9 - 7 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 0 | 18 - 6 | 20-0† |
| | HF | No.2 | 13 - 6 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 8 | 19 - 8 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 5 | 17 - 8 | 20-0† |
| | HF | No.3/Stud | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 5 | 20-0† | 12 - 4 | 18 - 7 | 20-0† | 11 - 8 | 17 - 0 | 20-0† | 11 - 1 | 15 - 9 | 19 - 5 |
| | HF | Standard | 12 - 2 | - | - | 11 - 7 | - | - | 11 - 1 | - | - | 10 - 2 | - | - | 9 - 5 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | SP | No.2 | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SP | No.3 | 13 - 3 | 19 - 1 | 20-0† | 12 - 8 | 18 - 2 | 20-0† | 12 - 1 | 17 - 5 | 20-0† | 11 - 1 | 15 - 11 | 19 - 7 | 10 - 3 | 14 - 9 | 18 - 1 |
| | SP | Stud | 13 - 3 | 19 - 1 | 20-0† | 12 - 8 | 18 - 2 | 20-0† | 12 - 1 | 17 - 5 | 20-0† | 11 - 1 | 15 - 11 | 19 - 7 | 10 - 3 | 14 - 9 | 18 - 1 |
| | SP | Standard | 11 - 3 | - | - | 10 - 8 | - | - | 10 - 3 | - | - | 9 - 5 | - | - | 8 - 8 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 13 - 9 | 20-0† | 20-0† | 13 - 4 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 0 | 18 - 6 | 20-0† |
| | SPF | No.1 | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SPF | No.2 | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SPF | No.3/Stud | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 5 | 20-0† | 12 - 4 | 18 - 7 | 20-0† | 11 - 8 | 17 - 0 | 20-0† | 11 - 1 | 15 - 9 | 19 - 5 |
| | SPF | Standard | 12 - 2 | - | - | 11 - 7 | - | - | 11 - 1 | - | - | 10 - 2 | - | - | 9 - 5 | - | - |
| 16 | DFL | SS | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 11 - 9 | 18 - 3 | 20-0† |
| | DFL | No.1 | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 4 | 17 - 6 | 20-0† |
| | DFL | No.2 | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | DFL | No.3/Stud | 12 - 6 | 17 - 11 | 20-0† | 12 - 0 | 17 - 1 | 20-0† | 11 - 6 | 16 - 4 | 20-0† | 10 - 7 | 15 - 0 | 18 - 6 | 9 - 9 | 13 - 10 | 17 - 1 |
| | DFL | Standard | 10 - 8 | - | - | 10 - 2 | - | - | 9 - 9 | - | - | 8 - 11 | - | - | 8 - 3 | - | - |
| | HF | SS | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | HF | No.1 | 12 - 10 | 19 - 10 | 20-0† | 12 - 5 | 19 - 3 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 10 - 10 | 16 - 9 | 20-0† |
| | HF | No.2 | 12 - 2 | 18 - 11 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | HF | No.3/Stud | 11 - 10 | 17 - 6 | 20-0† | 11 - 6 | 16 - 8 | 20-0† | 11 - 2 | 15 - 11 | 19 - 8 | 10 - 3 | 14 - 7 | 18 - 1 | 9 - 6 | 13 - 6 | 16 - 8 |
| | HF | Standard | 10 - 5 | - | - | 9 - 11 | - | - | 9 - 6 | - | - | 8 - 8 | - | - | 8 - 1 | - | - |
| | SP | SS | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 7 | 17 - 10 | 20-0† |
| | SP | No.1 | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | SP | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 2 | 18 - 9 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SP | No.3 | 11 - 5 | 16 - 4 | 20-0† | 10 - 10 | 15 - 7 | 19 - 2 | 10 - 4 | 14 - 11 | 18 - 4 | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 10 | 12 - 7 | 15 - 6 |
| | SP | Stud | 11 - 5 | 16 - 4 | 20-0† | 10 - 10 | 15 - 7 | 19 - 2 | 10 - 4 | 14 - 11 | 18 - 4 | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 10 | 12 - 7 | 15 - 6 |
| | SP | Standard | 9 - 7 | - | - | 9 - 2 | - | - | 8 - 9 | - | - | 8 - 1 | - | - | - | - | - |
| | SPF | SS | 12 - 10 | 19 - 10 | 20-0† | 12 - 5 | 19 - 3 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 10 - 10 | 16 - 9 | 20-0† |
| | SPF | No.1 | 12 - 6 | 19 - 4 | 20-0† | 12 - 2 | 18 - 9 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SPF | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 2 | 18 - 9 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SPF | No.3/Stud | 11 - 10 | 17 - 6 | 20-0† | 11 - 6 | 16 - 8 | 20-0† | 11 - 2 | 15 - 11 | 19 - 8 | 10 - 3 | 14 - 7 | 18 - 1 | 9 - 6 | 13 - 6 | 16 - 8 |
| | SPF | Standard | 10 - 5 | - | - | 9 - 11 | - | - | 9 - 6 | - | - | 8 - 8 | - | - | 8 - 1 | - | - |
| 24 | DFL | SS | 12 - 1 | 18 - 8 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 5 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 3 | 15 - 10 | 20-0† |
| | DFL | No.1 | 11 - 8 | 18 - 0 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 2 | 19 - 5 |
| | DFL | No.2 | 11 - 5 | 17 - 7 | 20-0† | 11 - 0 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 19 - 11 | 9 - 7 | 14 - 10 | 18 - 5 |
| | DFL | No.3/Stud | 10 - 2 | 14 - 5 | 17 - 10 | 9 - 8 | 13 - 9 | 17 - 0 | 9 - 3 | 13 - 2 | 16 - 3 | 8 - 6 | 12 - 1 | 14 - 11 | 7 - 10 | 11 - 2 | 13 - 9 |
| | DFL | Standard | 8 - 7 | - | - | 8 - 2 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 11 - 5 | 17 - 7 | 20-0† | 11 - 0 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | HF | No.1 | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 5 | 14 - 7 | 18 - 11 |
| | HF | No.2 | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 17 - 10 |
| | HF | No.3/Stud | 9 - 11 | 14 - 1 | 17 - 4 | 9 - 5 | 13 - 5 | 16 - 7 | 9 - 0 | 12 - 10 | 15 - 10 | 8 - 3 | 11 - 9 | 14 - 6 | - | 10 - 10 | 13 - 5 |
| | HF | Standard | 8 - 5 | - | - | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | SP | No.1 | 11 - 5 | 17 - 7 | 20-0† | 11 - 0 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | SP | No.2 | 10 - 10 | 16 - 10 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20 - 0 | 9 - 8 | 14 - 10 | 18 - 4 | 9 - 2 | 13 - 8 | 16 - 11 |
| | SP | No.3 | 9 - 2 | 13 - 2 | 16 - 2 | 8 - 9 | 12 - 6 | 15 - 5 | 8 - 4 | 12 - 0 | 14 - 9 | - | 11 - 0 | 13 - 6 | - | 10 - 2 | 12 - 6 |
| | SP | Stud | 9 - 2 | 13 - 2 | 16 - 2 | 8 - 9 | 12 - 6 | 15 - 5 | 8 - 4 | 12 - 0 | 14 - 9 | - | 11 - 0 | 13 - 6 | - | 10 - 2 | 12 - 6 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 5 | 14 - 7 | 18 - 11 |
| | SPF | No.1 | 10 - 10 | 16 - 10 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 8 | 15 - 0 | 19 - 5 | 9 - 2 | 14 - 2 | 18 - 1 |
| | SPF | No.2 | 10 - 10 | 16 - 10 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 8 | 15 - 0 | 19 - 5 | 9 - 2 | 14 - 2 | 18 - 1 |
| | SPF | No.3/Stud | 9 - 11 | 14 - 1 | 17 - 4 | 9 - 5 | 13 - 5 | 16 - 7 | 9 - 0 | 12 - 10 | 15 - 10 | 8 - 3 | 11 - 9 | 14 - 6 | - | 10 - 10 | 13 - 5 |
| | SPF | Standard | 8 - 5 | - | - | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B4 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/180

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure C H/180 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 12 - 5 | 19 - 2 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 4 | 17 - 7 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 4 | 16 - 0 | 20-0† |
| | DFL | No.1 | 11 - 11 | 18 - 5 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 9 - 11 | 15 - 4 | 19 - 9 |
| | DFL | No.2 | 11 - 8 | 18 - 1 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 8 | 16 - 7 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 18 - 8 |
| | DFL | No.3/Stud | 10 - 7 | 15 - 0 | 18 - 6 | 9 - 10 | 14 - 0 | 17 - 4 | 9 - 3 | 13 - 1 | 16 - 2 | 8 - 8 | 12 - 4 | 15 - 3 | 8 - 0 | 11 - 4 | 14 - 0 |
| | DFL | Standard | 8 - 11 | - | - | 8 - 4 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 11 - 8 | 18 - 1 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 8 | 16 - 7 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 7 |
| | HF | No.1 | 11 - 5 | 17 - 8 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 6 | 14 - 8 | 19 - 2 |
| | HF | No.2 | 10 - 10 | 16 - 10 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 1 | 14 - 0 | 18 - 1 |
| | HF | No.3/Stud | 10 - 3 | 14 - 7 | 18 - 1 | 9 - 7 | 13 - 8 | 16 - 10 | 9 - 0 | 12 - 9 | 15 - 9 | 8 - 6 | 12 - 0 | 14 - 10 | 7 - 9 | 11 - 0 | 13 - 8 |
| | HF | Standard | 8 - 9 | - | - | 8 - 2 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 12 - 2 | 18 - 10 | 20-0† | 11 - 8 | 18 - 0 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SP | No.1 | 11 - 8 | 18 - 1 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 8 | 16 - 7 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 7 |
| | SP | No.2 | 11 - 2 | 17 - 3 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 3 | 15 - 10 | 19 - 11 | 9 - 10 | 15 - 2 | 18 - 9 | 9 - 3 | 13 - 11 | 17 - 2 |
| | SP | No.3 | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 11 | 12 - 9 | 15 - 8 | 8 - 4 | 12 - 0 | 14 - 8 | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 4 | 12 - 8 |
| | SP | Stud | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 11 | 12 - 9 | 15 - 8 | 8 - 4 | 12 - 0 | 14 - 8 | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 4 | 12 - 8 |
| | SP | Standard | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 11 - 5 | 17 - 8 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 6 | 14 - 8 | 19 - 2 |
| | SPF | No.1 | 11 - 2 | 17 - 3 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 3 | 14 - 4 | 18 - 5 |
| | SPF | No.2 | 11 - 2 | 17 - 3 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 3 | 14 - 4 | 18 - 5 |
| | SPF | No.3/Stud | 10 - 3 | 14 - 7 | 18 - 1 | 9 - 7 | 13 - 8 | 16 - 10 | 9 - 0 | 12 - 9 | 15 - 9 | 8 - 6 | 12 - 0 | 14 - 10 | 7 - 9 | 11 - 0 | 13 - 8 |
| | SPF | Standard | 8 - 9 | - | - | 8 - 2 | - | - | - | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 11 - 3 | 17 - 4 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 11 | 15 - 3 | 19 - 10 | 9 - 4 | 14 - 5 | 18 - 9 |
| | DFL | No.1 | 10 - 9 | 16 - 8 | 20-0† | 10 - 4 | 15 - 11 | 20-0† | 9 - 11 | 15 - 4 | 19 - 8 | 9 - 6 | 14 - 8 | 18 - 6 | 9 - 0 | 13 - 8 | 16 - 11 |
| | DFL | No.2 | 10 - 7 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 19 - 10 | 9 - 8 | 15 - 0 | 18 - 7 | 9 - 4 | 14 - 1 | 17 - 5 | 8 - 10 | 12 - 11 | 16 - 0 |
| | DFL | No.3/Stud | 9 - 1 | 12 - 10 | 15 - 11 | 8 - 5 | 12 - 0 | 14 - 10 | 7 - 11 | 11 - 3 | 13 - 11 | - | 10 - 7 | 13 - 1 | - | 9 - 8 | 12 - 0 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 7 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 10 | 13 - 7 | 17 - 8 |
| | HF | No.1 | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 | 9 - 6 | 14 - 8 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 3 | 8 - 7 | 13 - 4 | 16 - 9 |
| | HF | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 11 | 9 - 0 | 13 - 11 | 18 - 0 | 8 - 8 | 13 - 5 | 16 - 11 | 8 - 2 | 12 - 7 | 15 - 6 |
| | HF | No.3/Stud | 8 - 10 | 12 - 6 | 15 - 6 | 8 - 3 | 11 - 8 | 14 - 5 | - | 10 - 11 | 13 - 6 | - | 10 - 4 | 12 - 9 | - | 9 - 5 | 11 - 8 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 11 - 0 | 17 - 0 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 |
| | SP | No.1 | 10 - 7 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 10 | 13 - 7 | 17 - 4 |
| | SP | No.2 | 10 - 1 | 15 - 7 | 19 - 6 | 9 - 8 | 14 - 9 | 18 - 3 | 9 - 3 | 13 - 9 | 17 - 1 | 8 - 11 | 13 - 0 | 16 - 1 | 8 - 2 | 11 - 11 | 14 - 9 |
| | SP | No.3 | 8 - 2 | 11 - 9 | 14 - 5 | - | 10 - 11 | 13 - 5 | - | 10 - 3 | 12 - 7 | - | 9 - 8 | 11 - 10 | - | 8 - 10 | 10 - 11 |
| | SP | Stud | 8 - 2 | 11 - 9 | 14 - 5 | - | 10 - 11 | 13 - 5 | - | 10 - 3 | 12 - 7 | - | 9 - 8 | 11 - 10 | - | 8 - 10 | 10 - 11 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 | 9 - 6 | 14 - 8 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 7 | 13 - 4 | 17 - 4 |
| | SPF | No.1 | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 | 9 - 3 | 14 - 3 | 18 - 3 | 8 - 11 | 13 - 9 | 17 - 2 | 8 - 5 | 12 - 9 | 15 - 9 |
| | SPF | No.2 | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 | 9 - 3 | 14 - 3 | 18 - 3 | 8 - 11 | 13 - 9 | 17 - 2 | 8 - 5 | 12 - 9 | 15 - 9 |
| | SPF | No.3/Stud | 8 - 10 | 12 - 6 | 15 - 6 | 8 - 3 | 11 - 8 | 14 - 5 | - | 10 - 11 | 13 - 6 | - | 10 - 4 | 12 - 9 | - | 9 - 5 | 11 - 8 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 9 - 9 | 15 - 1 | 19 - 7 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 10 | 17 - 11 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 1 | 12 - 6 | 16 - 4 |
| | DFL | No.1 | 9 - 4 | 14 - 6 | 18 - 1 | 8 - 11 | 13 - 8 | 16 - 10 | 8 - 7 | 12 - 9 | 15 - 9 | 8 - 3 | 12 - 0 | 14 - 10 | 7 - 9 | 11 - 0 | 13 - 8 |
| | DFL | No.2 | 9 - 2 | 13 - 10 | 17 - 1 | 8 - 9 | 12 - 11 | 15 - 11 | 8 - 5 | 12 - 1 | 14 - 11 | 8 - 0 | 11 - 4 | 14 - 0 | - | 10 - 5 | 12 - 11 |
| | DFL | No.3/Stud | - | 10 - 4 | 12 - 9 | - | 9 - 8 | 11 - 11 | - | 9 - 1 | 11 - 2 | - | 8 - 6 | 10 - 6 | - | 7 - 10 | 9 - 8 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 10 | 15 - 4 |
| | HF | No.1 | 9 - 0 | 13 - 10 | 17 - 10 | 8 - 7 | 13 - 3 | 16 - 7 | 8 - 3 | 12 - 7 | 15 - 7 | 7 - 11 | 11 - 10 | 14 - 8 | - | 10 - 11 | 13 - 5 |
| | HF | No.2 | 8 - 6 | 13 - 2 | 16 - 7 | 8 - 2 | 12 - 6 | 15 - 5 | 7 - 10 | 11 - 8 | 14 - 6 | - | 11 - 0 | 13 - 7 | - | 10 - 1 | 12 - 6 |
| | HF | No.3/Stud | - | 10 - 1 | 12 - 5 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 11 | - | 8 - 4 | 10 - 3 | - | - | 9 - 5 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 4 | 8 - 9 | 13 - 7 | 17 - 7 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 |
| | SP | No.1 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 3 | 8 - 5 | 13 - 0 | 16 - 2 | 8 - 1 | 12 - 3 | 15 - 2 | - | 11 - 3 | 13 - 11 |
| | SP | No.2 | 8 - 9 | 12 - 8 | 15 - 8 | 8 - 2 | 11 - 10 | 14 - 8 | - | 11 - 1 | 13 - 9 | - | 10 - 5 | 12 - 11 | - | 9 - 7 | 11 - 10 |
| | SP | No.3 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 10 | - | 8 - 3 | 10 - 2 | - | 7 - 9 | 9 - 6 | - | - | 8 - 9 |
| | SP | Stud | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 10 | - | 8 - 3 | 10 - 2 | - | 7 - 9 | 9 - 6 | - | - | 8 - 9 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 3 | 12 - 8 | 16 - 6 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 7 | 15 - 0 |
| | SPF | No.1 | 8 - 9 | 13 - 6 | 16 - 10 | 8 - 4 | 12 - 8 | 15 - 8 | 8 - 0 | 11 - 11 | 14 - 8 | - | 11 - 2 | 13 - 10 | - | 10 - 3 | 12 - 8 |
| | SPF | No.2 | 8 - 9 | 13 - 6 | 16 - 10 | 8 - 4 | 12 - 8 | 15 - 8 | 8 - 0 | 11 - 11 | 14 - 8 | - | 11 - 2 | 13 - 10 | - | 10 - 3 | 12 - 8 |
| | SPF | No.3/Stud | - | 10 - 1 | 12 - 5 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 11 | - | 8 - 4 | 10 - 3 | - | - | 9 - 5 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B5 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure C**
**H/240**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | DFL | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† |
| | DFL | No.2 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | DFL | No.3/Stud | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | DFL | Standard | 14-0†† | - | - | 13 - 10 | - | - | 13 - 5 | - | - | 12 - 11 | - | - |
| | HF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | HF | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† |
| | HF | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | HF | No.3/Stud | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | HF | Standard | 13 - 8 | - | - | 13 - 2 | - | - | 12 - 8 | - | - | 12 - 3 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† |
| | SP | No.1 | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 7 | 20-0† | 20-0† |
| | SP | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SP | No.3 | 14-0†† | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SP | Stud | 14-0†† | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† |
| | SP | Standard | 13 - 8 | - | - | 13 - 2 | - | - | 12 - 5 | - | - | 11 - 10 | - | - |
| | SPF | SS | 14-0†† | 20-0† | 20-0† | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† |
| | SPF | No.1 | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SPF | No.2 | 14-0†† | 20-0† | 20-0† | 13 - 10 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† |
| | SPF | No.3/Stud | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | SPF | Standard | 13 - 8 | - | - | 13 - 2 | - | - | 12 - 8 | - | - | 12 - 3 | - | - |
| 16 | DFL | SS | 14-0†† | 20-0† | 20-0† | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† |
| | DFL | No.1 | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20-0† | 20-0† | 12 - 6 | 19 - 4 | 20-0† |
| | DFL | No.2 | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | DFL | No.3/Stud | 13 - 0 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | DFL | Standard | 13 - 0 | - | - | 12 - 6 | - | - | 11 - 10 | - | - | 11 - 2 | - | - |
| | HF | SS | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | HF | No.1 | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 6 | 20-0† |
| | HF | No.2 | 12 - 8 | 19 - 8 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 5 | 17 - 8 | 20-0† |
| | HF | No.3/Stud | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | HF | Standard | 12 - 4 | - | - | 11 - 11 | - | - | 11 - 6 | - | - | 10 - 11 | - | - |
| | SP | SS | 14-0†† | 20-0† | 20-0† | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 9 | 19 - 9 | 20-0† |
| | SP | No.1 | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | SP | No.2 | 13 - 0 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SP | No.3 | 12 - 8 | 19 - 8 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 9 | 18 - 1 | 20-0† | 11 - 5 | 17 - 2 | 20-0† |
| | SP | Stud | 12 - 8 | 19 - 8 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 9 | 18 - 1 | 20-0† | 11 - 5 | 17 - 2 | 20-0† |
| | SP | Standard | 11 - 11 | - | - | 11 - 3 | - | - | 10 - 8 | - | - | 10 - 1 | - | - |
| | SPF | SS | 13 - 4 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 12 - 0 | 18 - 6 | 20-0† |
| | SPF | No.1 | 13 - 0 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SPF | No.2 | 13 - 0 | 20-0† | 20-0† | 12 - 6 | 19 - 5 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 1 | 20-0† |
| | SPF | No.3/Stud | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | SPF | Standard | 12 - 4 | - | - | 11 - 11 | - | - | 11 - 6 | - | - | 10 - 11 | - | - |
| 24 | DFL | SS | 12 - 7 | 19 - 6 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 4 | 17 - 6 | 20-0† |
| | DFL | No.1 | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 0 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 10 | 16 - 10 | 20-0† |
| | DFL | No.2 | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | DFL | No.3/Stud | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 0 | 19 - 9 | 10 - 2 | 15 - 2 | 18 - 9 |
| | DFL | Standard | 10 - 8 | - | - | 10 - 0 | - | - | 9 - 6 | - | - | 9 - 0 | - | - |
| | HF | SS | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | HF | No.1 | 11 - 7 | 17 - 11 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 5 | 16 - 1 | 20-0† |
| | HF | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 |
| | HF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 19 - 3 | 9 - 7 | 14 - 9 | 18 - 3 |
| | HF | Standard | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 3 | - | - | 8 - 10 | - | - |
| | SP | SS | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | SP | No.1 | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | SP | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SP | No.3 | 11 - 0 | 16 - 4 | 20-0† | 10 - 7 | 15 - 5 | 18 - 11 | 10 - 2 | 14 - 7 | 17 - 11 | 9 - 8 | 13 - 10 | 17 - 0 |
| | SP | Stud | 11 - 0 | 16 - 4 | 20-0† | 10 - 7 | 15 - 5 | 18 - 11 | 10 - 2 | 14 - 7 | 17 - 11 | 9 - 8 | 13 - 10 | 17 - 0 |
| | SP | Standard | 9 - 7 | - | - | 9 - 1 | - | - | 8 - 7 | - | - | 8 - 2 | - | - |
| | SPF | SS | 11 - 7 | 17 - 11 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 5 | 16 - 1 | 20-0† |
| | SPF | No.1 | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SPF | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SPF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 19 - 3 | 9 - 7 | 14 - 9 | 18 - 3 |
| | SPF | Standard | 10 - 5 | - | - | 9 - 10 | - | - | 9 - 3 | - | - | 8 - 10 | - | - |

See Table 3.20B footnotes.

## Table 3.20B5 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure C H/240 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 11 | 20-0† | 20-0† | 13 - 6 | 20-0† | 20-0† | 13 - 1 | 20-0† | 20-0† | 12 - 5 | 19 - 2 | 20-0† | 11 - 9 | 18 - 3 | 20-0† |
| | DFL | No.1 | 13 - 5 | 20-0† | 20-0† | 13 - 0 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 4 | 17 - 6 | 20-0† |
| | DFL | No.2 | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | DFL | No.3/Stud | 12 - 6 | 19 - 4 | 20-0† | 12 - 2 | 18 - 9 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 2 | 20 - 0 |
| | DFL | Standard | 12 - 5 | - | - | 11 - 10 | - | - | 11 - 4 | - | - | 10 - 5 | - | - | 9 - 7 | - | - |
| | HF | SS | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | HF | No.1 | 12 - 10 | 19 - 10 | 20-0† | 12 - 5 | 19 - 3 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 10 - 10 | 16 - 9 | 20-0† |
| | HF | No.2 | 12 - 2 | 18 - 11 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 10 - 10 | 16 - 10 | 20-0† | 10 - 4 | 15 - 11 | 20-0† |
| | HF | No.3/Stud | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 19 - 5 |
| | HF | Standard | 11 - 10 | - | - | 11 - 6 | - | - | 11 - 1 | - | - | 10 - 2 | - | - | 9 - 5 | - | - |
| | SP | SS | 13 - 8 | 20-0† | 20-0† | 13 - 3 | 20-0† | 20-0† | 12 - 10 | 19 - 11 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 7 | 17 - 10 | 20-0† |
| | SP | No.1 | 13 - 1 | 20-0† | 20-0† | 12 - 9 | 19 - 8 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | SP | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 2 | 18 - 9 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SP | No.3 | 12 - 2 | 18 - 11 | 20-0† | 11 - 10 | 18 - 2 | 20-0† | 11 - 6 | 17 - 5 | 20-0† | 10 - 10 | 15 - 11 | 19 - 7 | 10 - 3 | 14 - 9 | 18 - 1 |
| | SP | Stud | 12 - 2 | 18 - 11 | 20-0† | 11 - 10 | 18 - 2 | 20-0† | 11 - 6 | 17 - 5 | 20-0† | 10 - 10 | 15 - 11 | 19 - 7 | 10 - 3 | 14 - 9 | 18 - 1 |
| | SP | Standard | 11 - 3 | - | - | 10 - 8 | - | - | 10 - 3 | - | - | 9 - 5 | - | - | 8 - 8 | - | - |
| | SPF | SS | 12 - 10 | 19 - 10 | 20-0† | 12 - 5 | 19 - 3 | 20-0† | 12 - 1 | 18 - 8 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 10 - 10 | 16 - 9 | 20-0† |
| | SPF | No.1 | 12 - 6 | 19 - 4 | 20-0† | 12 - 2 | 18 - 9 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SPF | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 2 | 18 - 9 | 20-0† | 11 - 9 | 18 - 3 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† |
| | SPF | No.3/Stud | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 19 - 5 |
| | SPF | Standard | 11 - 10 | - | - | 11 - 6 | - | - | 11 - 1 | - | - | 10 - 2 | - | - | 9 - 5 | - | - |
| 16 | DFL | SS | 12 - 7 | 19 - 6 | 20-0† | 12 - 3 | 18 - 11 | 20-0† | 11 - 10 | 18 - 4 | 20-0† | 11 - 3 | 17 - 4 | 20-0† | 10 - 8 | 16 - 6 | 20-0† |
| | DFL | No.1 | 12 - 1 | 18 - 9 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 3 | 15 - 10 | 20-0† |
| | DFL | No.2 | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | DFL | No.3/Stud | 11 - 4 | 17 - 6 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 4 | 20-0† | 10 - 1 | 15 - 0 | 18 - 6 | 9 - 7 | 13 - 10 | 17 - 1 |
| | DFL | Standard | 10 - 8 | - | - | 10 - 2 | - | - | 9 - 9 | - | - | 8 - 11 | - | - | 8 - 3 | - | - |
| | HF | SS | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | HF | No.1 | 11 - 7 | 17 - 11 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 |
| | HF | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 8 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 4 | 14 - 5 | 18 - 9 |
| | HF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 7 | 19 - 8 | 9 - 7 | 14 - 7 | 18 - 1 | 9 - 1 | 13 - 6 | 16 - 8 |
| | HF | Standard | 10 - 5 | - | - | 9 - 11 | - | - | 9 - 6 | - | - | 8 - 8 | - | - | 8 - 1 | - | - |
| | SP | SS | 12 - 4 | 19 - 2 | 20-0† | 12 - 0 | 18 - 7 | 20-0† | 11 - 8 | 18 - 0 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 5 | 16 - 2 | 20-0† |
| | SP | No.1 | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | SP | No.2 | 11 - 4 | 17 - 6 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 10 | 19 - 3 |
| | SP | No.3 | 11 - 0 | 16 - 4 | 20-0† | 10 - 8 | 15 - 7 | 19 - 2 | 10 - 4 | 14 - 11 | 18 - 4 | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 10 | 12 - 7 | 15 - 6 |
| | SP | Stud | 11 - 0 | 16 - 4 | 20-0† | 10 - 8 | 15 - 7 | 19 - 2 | 10 - 4 | 14 - 11 | 18 - 4 | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 10 | 12 - 7 | 15 - 6 |
| | SP | Standard | 9 - 7 | - | - | 9 - 2 | - | - | 8 - 9 | - | - | 8 - 1 | - | - | - | - | - |
| | SPF | SS | 11 - 7 | 17 - 11 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 |
| | SPF | No.1 | 11 - 4 | 17 - 6 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 10 | 19 - 3 |
| | SPF | No.2 | 11 - 4 | 17 - 6 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 6 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 10 | 19 - 3 |
| | SPF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 7 | 19 - 8 | 9 - 7 | 14 - 7 | 18 - 1 | 9 - 1 | 13 - 6 | 16 - 8 |
| | SPF | Standard | 10 - 5 | - | - | 9 - 11 | - | - | 9 - 6 | - | - | 8 - 8 | - | - | 8 - 1 | - | - |
| 24 | DFL | SS | 10 - 11 | 16 - 11 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 7 | 9 - 3 | 14 - 4 | 18 - 7 |
| | DFL | No.1 | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 9 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 4 | 14 - 6 | 18 - 10 | 8 - 11 | 13 - 9 | 17 - 11 |
| | DFL | No.2 | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | DFL | No.3/Stud | 9 - 10 | 14 - 5 | 17 - 10 | 9 - 6 | 13 - 9 | 17 - 0 | 9 - 3 | 13 - 2 | 16 - 3 | 8 - 6 | 12 - 1 | 14 - 11 | 7 - 10 | 11 - 2 | 13 - 9 |
| | DFL | Standard | 8 - 7 | - | - | 8 - 2 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | HF | No.1 | 10 - 1 | 15 - 7 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 6 | 13 - 2 | 17 - 1 |
| | HF | No.2 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 2 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | HF | No.3/Stud | 9 - 4 | 14 - 1 | 17 - 4 | 9 - 0 | 13 - 5 | 16 - 7 | 8 - 9 | 12 - 10 | 15 - 10 | 8 - 3 | 11 - 9 | 14 - 6 | - | 10 - 10 | 13 - 5 |
| | HF | Standard | 8 - 5 | - | - | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 1 | 14 - 0 | 18 - 3 |
| | SP | No.1 | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | SP | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 8 |
| | SP | No.3 | 9 - 2 | 13 - 2 | 16 - 2 | 8 - 9 | 12 - 6 | 15 - 5 | 8 - 4 | 12 - 0 | 14 - 9 | - | 11 - 0 | 13 - 6 | - | 10 - 2 | 12 - 6 |
| | SP | Stud | 9 - 2 | 13 - 2 | 16 - 2 | 8 - 9 | 12 - 6 | 15 - 5 | 8 - 4 | 12 - 0 | 14 - 9 | - | 11 - 0 | 13 - 6 | - | 10 - 2 | 12 - 6 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 15 - 7 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 6 | 13 - 2 | 17 - 1 |
| | SPF | No.1 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 8 |
| | SPF | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 8 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 1 | 17 - 4 | 9 - 0 | 13 - 5 | 16 - 7 | 8 - 9 | 12 - 10 | 15 - 10 | 8 - 3 | 11 - 9 | 14 - 6 | - | 10 - 10 | 13 - 5 |
| | SPF | Standard | 8 - 5 | - | - | 8 - 0 | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B5 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/240

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure C**
**H/240**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 11 - 3 | 17 - 4 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 11 | 15 - 3 | 19 - 10 | 9 - 4 | 14 - 5 | 18 - 9 |
| | DFL | No.1 | 10 - 9 | 16 - 8 | 20-0† | 10 - 4 | 15 - 11 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 0 | 13 - 11 | 18 - 1 |
| | DFL | No.2 | 10 - 7 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 10 | 13 - 7 | 17 - 8 |
| | DFL | No.3/Stud | 10 - 1 | 15 - 0 | 18 - 6 | 9 - 8 | 14 - 0 | 17 - 4 | 9 - 3 | 13 - 1 | 16 - 2 | 8 - 8 | 12 - 4 | 15 - 3 | 8 - 0 | 11 - 4 | 14 - 0 |
| | DFL | Standard | 8 - 11 | - | - | 8 - 4 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 10 - 7 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 10 | 13 - 7 | 17 - 8 |
| | HF | No.1 | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 | 9 - 6 | 14 - 8 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 7 | 13 - 4 | 17 - 4 |
| | HF | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 6 | 18 - 11 | 9 - 0 | 13 - 11 | 18 - 1 | 8 - 8 | 13 - 5 | 17 - 5 | 8 - 2 | 12 - 8 | 16 - 5 |
| | HF | No.3/Stud | 9 - 7 | 14 - 7 | 18 - 1 | 9 - 2 | 13 - 8 | 16 - 10 | 8 - 9 | 12 - 9 | 15 - 9 | 8 - 5 | 12 - 0 | 14 - 10 | 7 - 9 | 11 - 0 | 13 - 8 |
| | HF | Standard | 8 - 9 | - | - | 8 - 2 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 11 - 0 | 17 - 0 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 |
| | SP | No.1 | 10 - 7 | 16 - 4 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 10 | 13 - 7 | 17 - 8 |
| | SP | No.2 | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 | 9 - 3 | 14 - 3 | 18 - 7 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 5 | 13 - 0 | 16 - 11 |
| | SP | No.3 | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 11 | 12 - 9 | 15 - 8 | 8 - 4 | 12 - 0 | 14 - 8 | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 4 | 12 - 8 |
| | SP | Stud | 9 - 6 | 13 - 8 | 16 - 10 | 8 - 11 | 12 - 9 | 15 - 8 | 8 - 4 | 12 - 0 | 14 - 8 | 7 - 10 | 11 - 3 | 13 - 10 | - | 10 - 4 | 12 - 8 |
| | SP | Standard | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 3 | 19 - 10 | 9 - 6 | 14 - 8 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 7 | 13 - 4 | 17 - 4 |
| | SPF | No.1 | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 | 9 - 3 | 14 - 3 | 18 - 7 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 5 | 13 - 0 | 16 - 11 |
| | SPF | No.2 | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 14 - 11 | 19 - 5 | 9 - 3 | 14 - 3 | 18 - 7 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 5 | 13 - 0 | 16 - 11 |
| | SPF | No.3/Stud | 9 - 7 | 14 - 7 | 18 - 1 | 9 - 2 | 13 - 8 | 16 - 10 | 8 - 9 | 12 - 9 | 15 - 9 | 8 - 5 | 12 - 0 | 14 - 10 | 7 - 9 | 11 - 0 | 13 - 8 |
| | SPF | Standard | 8 - 9 | - | - | 8 - 2 | - | - | - | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 10 - 2 | 15 - 8 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 8 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 5 | 13 - 1 | 17 - 0 |
| | DFL | No.1 | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 2 | 12 - 7 | 16 - 4 |
| | DFL | No.2 | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 4 | 8 - 9 | 13 - 7 | 17 - 7 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 |
| | DFL | No.3/Stud | 9 - 1 | 12 - 10 | 15 - 11 | 8 - 5 | 12 - 0 | 14 - 10 | 7 - 11 | 11 - 3 | 13 - 11 | - | 10 - 7 | 13 - 1 | - | 9 - 8 | 12 - 0 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 4 | 8 - 9 | 13 - 7 | 17 - 7 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 |
| | HF | No.1 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 9 | 12 - 0 | 15 - 8 |
| | HF | No.2 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 6 | 13 - 2 | 17 - 1 | 8 - 2 | 12 - 7 | 16 - 5 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 5 | 14 - 11 |
| | HF | No.3/Stud | 8 - 8 | 12 - 6 | 15 - 6 | 8 - 3 | 11 - 8 | 14 - 5 | - | 10 - 11 | 13 - 6 | - | 10 - 4 | 12 - 9 | - | 9 - 5 | 11 - 8 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 11 | 15 - 5 | 20-0† | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 4 | 12 - 10 | 16 - 8 |
| | SP | No.1 | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 4 | 8 - 9 | 13 - 7 | 17 - 7 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 |
| | SP | No.2 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 9 | 13 - 6 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 10 | 8 - 0 | 12 - 5 | 16 - 1 | - | 11 - 9 | 14 - 9 |
| | SP | No.3 | 8 - 2 | 11 - 9 | 14 - 5 | - | 10 - 11 | 13 - 5 | - | 10 - 3 | 12 - 7 | - | 9 - 8 | 11 - 10 | - | 8 - 10 | 10 - 11 |
| | SP | Stud | 8 - 2 | 11 - 9 | 14 - 5 | - | 10 - 11 | 13 - 5 | - | 10 - 3 | 12 - 7 | - | 9 - 8 | 11 - 10 | - | 8 - 10 | 10 - 11 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 9 | 12 - 0 | 15 - 8 |
| | SPF | No.1 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 9 | 13 - 6 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 10 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 9 | 15 - 3 |
| | SPF | No.2 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 9 | 13 - 6 | 17 - 6 | 8 - 4 | 12 - 11 | 16 - 10 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 9 | 15 - 3 |
| | SPF | No.3/Stud | 8 - 8 | 12 - 6 | 15 - 6 | 8 - 3 | 11 - 8 | 14 - 5 | - | 10 - 11 | 13 - 6 | - | 10 - 4 | 12 - 9 | - | 9 - 5 | 11 - 8 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | 8 - 10 | 13 - 7 | 17 - 9 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 6 | 16 - 3 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 4 | 14 - 9 |
| | DFL | No.1 | 8 - 6 | 13 - 1 | 17 - 0 | 8 - 1 | 12 - 6 | 16 - 3 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 6 | 14 - 10 | - | 10 - 11 | 13 - 8 |
| | DFL | No.2 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 14 - 11 | - | 11 - 4 | 14 - 0 | - | 10 - 5 | 12 - 11 |
| | DFL | No.3/Stud | - | 10 - 4 | 12 - 9 | - | 9 - 8 | 11 - 11 | - | 9 - 1 | 11 - 2 | - | 8 - 6 | 10 - 6 | - | 7 - 10 | 9 - 8 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 3 | - | 11 - 4 | 14 - 8 | - | 10 - 8 | 13 - 11 |
| | HF | No.1 | 8 - 1 | 12 - 7 | 16 - 4 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 6 | 14 - 11 | - | 11 - 1 | 14 - 4 | - | 10 - 5 | 13 - 5 |
| | HF | No.2 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 10 | - | 10 - 11 | 14 - 3 | - | 10 - 6 | 13 - 7 | - | 9 - 11 | 12 - 6 |
| | HF | No.3/Stud | - | 10 - 1 | 12 - 5 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 11 | - | 8 - 4 | 10 - 3 | - | - | 9 - 5 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 4 | - | 11 - 2 | 14 - 6 |
| | SP | No.1 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 3 | - | 11 - 4 | 14 - 8 | - | 10 - 8 | 13 - 11 |
| | SP | No.2 | 7 - 11 | 12 - 3 | 15 - 8 | - | 11 - 8 | 14 - 8 | - | 11 - 1 | 13 - 9 | - | 10 - 5 | 12 - 11 | - | 9 - 7 | 11 - 10 |
| | SP | No.3 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 10 | - | 8 - 3 | 10 - 2 | - | 7 - 9 | 9 - 6 | - | - | 8 - 9 |
| | SP | Stud | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 10 | - | 8 - 3 | 10 - 2 | - | 7 - 9 | 9 - 6 | - | - | 8 - 9 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 1 | 12 - 7 | 16 - 4 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 6 | 14 - 11 | - | 11 - 1 | 14 - 4 | - | 10 - 5 | 13 - 7 |
| | SPF | No.1 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 15 - 3 | - | 11 - 3 | 14 - 7 | - | 10 - 9 | 13 - 10 | - | 10 - 2 | 12 - 8 |
| | SPF | No.2 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 15 - 3 | - | 11 - 3 | 14 - 7 | - | 10 - 9 | 13 - 10 | - | 10 - 2 | 12 - 8 |
| | SPF | No.3/Stud | - | 10 - 1 | 12 - 5 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 11 | - | 8 - 4 | 10 - 3 | - | - | 9 - 5 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B6 Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure C**
**H/360**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 90 | | | 95 | | | 100 | | | 105 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | |
| 12 | DFL | SS | 13 - 11 | 20-0† | 20-0† | 13 - 5 | 20-0† | 20-0† | 12 - 11 | 20 - 0 | 20-0† | 12 - 6 | 19 - 4 | 20-0† |
| | DFL | No.1 | 13 - 4 | 20-0† | 20-0† | 12 - 11 | 19 - 11 | 20-0† | 12 - 5 | 19 - 3 | 20-0† | 12 - 0 | 18 - 7 | 20-0† |
| | DFL | No.2 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† |
| | DFL | No.3/Stud | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 8 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 3 | 17 - 4 | 20-0† |
| | DFL | Standard | 12 - 6 | - | - | 12 - 0 | - | - | 11 - 7 | - | - | 11 - 3 | - | - |
| | HF | SS | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† |
| | HF | No.1 | 12 - 10 | 19 - 10 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† |
| | HF | No.2 | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† |
| | HF | No.3/Stud | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | HF | Standard | 11 - 10 | - | - | 11 - 5 | - | - | 11 - 0 | - | - | 10 - 8 | - | - |
| | SP | SS | 13 - 8 | 20-0† | 20-0† | 13 - 2 | 20-0† | 20-0† | 12 - 8 | 19 - 7 | 20-0† | 12 - 3 | 19 - 0 | 20-0† |
| | SP | No.1 | 13 - 1 | 20-0† | 20-0† | 12 - 7 | 19 - 6 | 20-0† | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† |
| | SP | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 8 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 3 | 17 - 4 | 20-0† |
| | SP | No.3 | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† |
| | SP | Stud | 12 - 2 | 18 - 10 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 11 | 20-0† |
| | SP | Standard | 11 - 10 | - | - | 11 - 5 | - | - | 11 - 0 | - | - | 10 - 8 | - | - |
| | SPF | SS | 12 - 10 | 19 - 10 | 20-0† | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 10 | 20-0† |
| | SPF | No.1 | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 8 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 3 | 17 - 4 | 20-0† |
| | SPF | No.2 | 12 - 6 | 19 - 4 | 20-0† | 12 - 0 | 18 - 8 | 20-0† | 11 - 7 | 18 - 0 | 20-0† | 11 - 3 | 17 - 4 | 20-0† |
| | SPF | No.3/Stud | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | SPF | Standard | 11 - 10 | - | - | 11 - 5 | - | - | 11 - 0 | - | - | 10 - 8 | - | - |
| 16 | DFL | SS | 12 - 7 | 19 - 6 | 20-0† | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 1 | 20-0† | 11 - 4 | 17 - 6 | 20-0† |
| | DFL | No.1 | 12 - 1 | 18 - 9 | 20-0† | 11 - 8 | 18 - 0 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 10 | 16 - 10 | 20-0† |
| | DFL | No.2 | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | DFL | No.3/Stud | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | DFL | Standard | 11 - 4 | - | - | 10 - 11 | - | - | 10 - 6 | - | - | 10 - 2 | - | - |
| | HF | SS | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | HF | No.1 | 11 - 7 | 17 - 11 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 5 | 16 - 1 | 20-0† |
| | HF | No.2 | 11 - 0 | 17 - 1 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 |
| | HF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | HF | Standard | 10 - 9 | - | - | 10 - 4 | - | - | 9 - 11 | - | - | 9 - 7 | - | - |
| | SP | SS | 12 - 4 | 19 - 1 | 20-0† | 11 - 11 | 18 - 5 | 20-0† | 11 - 6 | 17 - 9 | 20-0† | 11 - 1 | 17 - 2 | 20-0† |
| | SP | No.1 | 11 - 10 | 18 - 4 | 20-0† | 11 - 5 | 17 - 8 | 20-0† | 11 - 0 | 17 - 0 | 20-0† | 10 - 8 | 16 - 5 | 20-0† |
| | SP | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SP | No.3 | 11 - 0 | 17 - 1 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 |
| | SP | Stud | 11 - 0 | 17 - 1 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 |
| | SP | Standard | 10 - 9 | - | - | 10 - 4 | - | - | 9 - 11 | - | - | 9 - 7 | - | - |
| | SPF | SS | 11 - 7 | 17 - 11 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 5 | 16 - 1 | 20-0† |
| | SPF | No.1 | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SPF | No.2 | 11 - 4 | 17 - 6 | 20-0† | 10 - 11 | 16 - 10 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† |
| | SPF | No.3/Stud | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | SPF | Standard | 10 - 9 | - | - | 10 - 4 | - | - | 9 - 11 | - | - | 9 - 7 | - | - |
| 24 | DFL | SS | 10 - 11 | 16 - 11 | 20-0† | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 |
| | DFL | No.1 | 10 - 6 | 16 - 3 | 20-0† | 10 - 1 | 15 - 8 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 5 | 14 - 7 | 19 - 0 |
| | DFL | No.2 | 10 - 3 | 15 - 11 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 3 | 14 - 3 | 18 - 7 |
| | DFL | No.3/Stud | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 10 | 13 - 8 | 17 - 9 |
| | DFL | Standard | 9 - 10 | - | - | 9 - 5 | - | - | 9 - 1 | - | - | 8 - 10 | - | - |
| | HF | SS | 10 - 3 | 15 - 11 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 3 | 14 - 3 | 18 - 7 |
| | HF | No.1 | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 0 | 14 - 0 | 18 - 2 |
| | HF | No.2 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 3 | 18 - 6 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 7 | 13 - 3 | 17 - 3 |
| | HF | No.3/Stud | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 4 | 12 - 11 | 16 - 10 |
| | HF | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 8 | - | - | 8 - 4 | - | - |
| | SP | SS | 10 - 9 | 16 - 7 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 11 | 15 - 5 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | SP | No.1 | 10 - 3 | 15 - 11 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 3 | 14 - 3 | 18 - 7 |
| | SP | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 10 | 13 - 8 | 17 - 9 |
| | SP | No.3 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 3 | 18 - 6 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 7 | 13 - 3 | 17 - 0 |
| | SP | Stud | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 3 | 18 - 6 | 8 - 11 | 13 - 9 | 17 - 10 | 8 - 7 | 13 - 3 | 17 - 0 |
| | SP | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 7 | - | - | 8 - 2 | - | - |
| | SPF | SS | 10 - 1 | 15 - 7 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 0 | 14 - 0 | 18 - 2 |
| | SPF | No.1 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 10 | 13 - 8 | 17 - 9 |
| | SPF | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 5 | 14 - 7 | 19 - 0 | 9 - 1 | 14 - 1 | 18 - 4 | 8 - 10 | 13 - 8 | 17 - 9 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 4 | 12 - 11 | 16 - 10 |
| | SPF | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 8 | - | - | 8 - 4 | - | - |

See Table 3.20B footnotes.

## Table 3.20B6 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

**Exposure C**
**H/360**
**3/8" WSP**

| Wind Speed 3-second gust (mph) | | | 110 | | | 115 | | | 120 | | | 130 | | | 140 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 12 - 1 | 18 - 8 | 20-0† | 11 - 9 | 18 - 2 | 20-0† | 11 - 5 | 17 - 7 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 3 | 15 - 10 | 20-0† |
| | DFL | No.1 | 11 - 8 | 18 - 0 | 20-0† | 11 - 3 | 17 - 5 | 20-0† | 10 - 11 | 16 - 11 | 20-0† | 10 - 4 | 16 - 0 | 20-0† | 9 - 10 | 15 - 2 | 19 - 9 |
| | DFL | No.2 | 11 - 5 | 17 - 7 | 20-0† | 11 - 0 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | DFL | No.3/Stud | 10 - 10 | 16 - 10 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 8 | 15 - 0 | 19 - 5 | 9 - 2 | 14 - 2 | 18 - 6 |
| | DFL | Standard | 10 - 10 | - | - | 10 - 6 | - | - | 10 - 3 | - | - | 9 - 8 | - | - | 9 - 2 | - | - |
| | HF | SS | 11 - 5 | 17 - 7 | 20-0† | 11 - 0 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | HF | No.1 | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 5 | 14 - 7 | 18 - 11 |
| | HF | No.2 | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 18 - 0 |
| | HF | No.3/Stud | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | HF | Standard | 10 - 4 | - | - | 10 - 0 | - | - | 9 - 8 | - | - | 9 - 2 | - | - | 8 - 8 | - | - |
| | SP | SS | 11 - 10 | 18 - 4 | 20-0† | 11 - 6 | 17 - 10 | 20-0† | 11 - 2 | 17 - 3 | 20-0† | 10 - 7 | 16 - 4 | 20-0† | 10 - 0 | 15 - 6 | 20-0† |
| | SP | No.1 | 11 - 5 | 17 - 7 | 20-0† | 11 - 0 | 17 - 1 | 20-0† | 10 - 9 | 16 - 7 | 20-0† | 10 - 2 | 15 - 8 | 20-0† | 9 - 7 | 14 - 11 | 19 - 4 |
| | SP | No.2 | 10 - 10 | 16 - 10 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 8 | 15 - 0 | 19 - 5 | 9 - 2 | 14 - 2 | 18 - 6 |
| | SP | No.3 | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 18 - 0 |
| | SP | Stud | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 5 | 14 - 7 | 19 - 0 | 8 - 11 | 13 - 10 | 18 - 0 |
| | SP | Standard | 10 - 4 | - | - | 10 - 0 | - | - | 9 - 8 | - | - | 9 - 2 | - | - | 8 - 8 | - | - |
| | SPF | SS | 11 - 2 | 17 - 3 | 20-0† | 10 - 9 | 16 - 8 | 20-0† | 10 - 6 | 16 - 2 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 5 | 14 - 7 | 18 - 11 |
| | SPF | No.1 | 10 - 10 | 16 - 10 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 8 | 15 - 0 | 19 - 5 | 9 - 2 | 14 - 2 | 18 - 6 |
| | SPF | No.2 | 10 - 10 | 16 - 10 | 20-0† | 10 - 6 | 16 - 4 | 20-0† | 10 - 3 | 15 - 10 | 20-0† | 9 - 8 | 15 - 0 | 19 - 5 | 9 - 2 | 14 - 2 | 18 - 6 |
| | SPF | No.3/Stud | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | SPF | Standard | 10 - 4 | - | - | 10 - 0 | - | - | 9 - 8 | - | - | 9 - 2 | - | - | 8 - 8 | - | - |
| 16 | DFL | SS | 10 - 11 | 16 - 11 | 20-0† | 10 - 7 | 16 - 5 | 20-0† | 10 - 3 | 15 - 11 | 20-0† | 9 - 9 | 15 - 1 | 19 - 7 | 9 - 3 | 14 - 4 | 18 - 7 |
| | DFL | No.1 | 10 - 6 | 16 - 3 | 20-0† | 10 - 2 | 15 - 9 | 20-0† | 9 - 11 | 15 - 4 | 19 - 11 | 9 - 4 | 14 - 6 | 18 - 10 | 8 - 11 | 13 - 9 | 17 - 11 |
| | DFL | No.2 | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | DFL | No.3/Stud | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 8 |
| | DFL | Standard | 9 - 10 | - | - | 9 - 6 | - | - | 9 - 3 | - | - | 8 - 9 | - | - | 8 - 3 | - | - |
| | HF | SS | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | HF | No.1 | 10 - 1 | 15 - 7 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 6 | 13 - 2 | 17 - 1 |
| | HF | No.2 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 2 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 1 | 12 - 6 | 16 - 3 |
| | HF | No.3/Stud | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 0 | 14 - 0 | 18 - 2 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 2 | 15 - 10 |
| | HF | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 9 | - | - | 8 - 4 | - | - | 7 - 11 | - | - |
| | SP | SS | 10 - 9 | 16 - 7 | 20-0† | 10 - 5 | 16 - 1 | 20-0† | 10 - 1 | 15 - 7 | 20-0† | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 1 | 14 - 0 | 18 - 3 |
| | SP | No.1 | 10 - 4 | 15 - 11 | 20-0† | 10 - 0 | 15 - 5 | 20-0† | 9 - 8 | 15 - 0 | 19 - 6 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 8 | 13 - 6 | 17 - 6 |
| | SP | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 8 |
| | SP | No.3 | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 2 | 8 - 6 | 13 - 2 | 16 - 10 | 8 - 1 | 12 - 6 | 15 - 6 |
| | SP | Stud | 9 - 7 | 14 - 10 | 19 - 3 | 9 - 3 | 14 - 4 | 18 - 8 | 9 - 0 | 13 - 11 | 18 - 2 | 8 - 6 | 13 - 2 | 16 - 10 | 8 - 1 | 12 - 6 | 15 - 6 |
| | SP | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 9 | - | - | 8 - 1 | - | - | - | - | - |
| | SPF | SS | 10 - 1 | 15 - 7 | 20-0† | 9 - 9 | 15 - 1 | 19 - 8 | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 6 | 13 - 2 | 17 - 1 |
| | SPF | No.1 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 8 |
| | SPF | No.2 | 9 - 10 | 15 - 2 | 19 - 9 | 9 - 6 | 14 - 9 | 19 - 2 | 9 - 3 | 14 - 4 | 18 - 7 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 10 | 16 - 8 |
| | SPF | No.3/Stud | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 0 | 14 - 0 | 18 - 2 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 2 | 15 - 10 |
| | SPF | Standard | 9 - 4 | - | - | 9 - 0 | - | - | 8 - 9 | - | - | 8 - 4 | - | - | 7 - 11 | - | - |
| 24 | DFL | SS | 9 - 6 | 14 - 8 | 19 - 1 | 9 - 2 | 14 - 3 | 18 - 6 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 5 | 13 - 1 | 17 - 0 | 8 - 0 | 12 - 5 | 16 - 2 |
| | DFL | No.1 | 9 - 2 | 14 - 1 | 18 - 4 | 8 - 10 | 13 - 8 | 17 - 10 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 2 | 12 - 7 | 16 - 4 | - | 11 - 11 | 15 - 6 |
| | DFL | No.2 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 8 | 13 - 5 | 17 - 5 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 | - | 11 - 8 | 15 - 2 |
| | DFL | No.3/Stud | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 3 | 12 - 10 | 16 - 8 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 9 | 14 - 11 | - | 11 - 2 | 13 - 9 |
| | DFL | Standard | 8 - 6 | - | - | 8 - 2 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 8 | 13 - 5 | 17 - 5 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 | - | 11 - 8 | 15 - 2 |
| | HF | No.1 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 6 | 13 - 1 | 17 - 1 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 9 | 12 - 0 | 15 - 8 | - | 11 - 5 | 14 - 10 |
| | HF | No.2 | 8 - 4 | 12 - 10 | 16 - 9 | 8 - 1 | 12 - 6 | 16 - 3 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 5 | 14 - 11 | - | 10 - 10 | 14 - 2 |
| | HF | No.3/Stud | 8 - 1 | 12 - 6 | 16 - 3 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 9 | 15 - 4 | - | 11 - 2 | 14 - 6 | - | 10 - 7 | 13 - 5 |
| | HF | Standard | 8 - 1 | - | - | 7 - 10 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 4 | 14 - 5 | 18 - 9 | 9 - 0 | 14 - 0 | 18 - 2 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 2 | 15 - 10 |
| | SP | No.1 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 8 | 13 - 5 | 17 - 5 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 | - | 11 - 8 | 15 - 2 |
| | SP | No.2 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 3 | 12 - 10 | 16 - 8 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 9 | 15 - 3 | - | 11 - 2 | 14 - 6 |
| | SP | No.3 | 8 - 4 | 12 - 10 | 16 - 2 | 8 - 1 | 12 - 6 | 15 - 5 | 7 - 10 | 12 - 0 | 14 - 9 | - | 11 - 0 | 13 - 6 | - | 10 - 2 | 12 - 6 |
| | SP | Stud | 8 - 4 | 12 - 10 | 16 - 2 | 8 - 1 | 12 - 6 | 15 - 5 | 7 - 10 | 12 - 0 | 14 - 9 | - | 11 - 0 | 13 - 6 | - | 10 - 2 | 12 - 6 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 6 | 13 - 1 | 17 - 1 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 9 | 12 - 0 | 15 - 8 | - | 11 - 5 | 14 - 10 |
| | SPF | No.1 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 3 | 12 - 10 | 16 - 8 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 9 | 15 - 3 | - | 11 - 2 | 14 - 6 |
| | SPF | No.2 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 3 | 12 - 10 | 16 - 8 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 9 | 15 - 3 | - | 11 - 2 | 14 - 6 |
| | SPF | No.3/Stud | 8 - 1 | 12 - 6 | 16 - 3 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 9 | 15 - 4 | - | 11 - 2 | 14 - 6 | - | 10 - 7 | 13 - 5 |
| | SPF | Standard | 8 - 1 | - | - | 7 - 10 | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B6 (Cont.) Maximum Exterior Loadbearing[1] and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Stud Deflection Limit = H/360

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)[a]

# Exposure C H/360 3/8" WSP

| Wind Speed 3-second gust (mph) | | | 150 | | | 160 | | | 170 | | | 180 | | | 195 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stud Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 | 2x4 | 2x6 | 2x8 |
| | | | Maximum Allowable Stud Length (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 9 - 9 | 15 - 1 | 19 - 7 | 9 - 4 | 14 - 5 | 18 - 9 | 8 - 11 | 13 - 10 | 17 - 11 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 1 | 12 - 6 | 16 - 4 |
| | DFL | No.1 | 9 - 4 | 14 - 6 | 18 - 10 | 8 - 11 | 13 - 10 | 18 - 0 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 10 | 12 - 1 | 15 - 8 |
| | DFL | No.2 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 10 | 15 - 4 |
| | DFL | No.3/Stud | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 11 | 16 - 10 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 11 | 15 - 3 | - | 11 - 3 | 14 - 0 |
| | DFL | Standard | 8 - 9 | - | - | 8 - 4 | - | - | 7 - 10 | - | - | - | - | - | - | - | - |
| | HF | SS | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 10 | 15 - 4 |
| | HF | No.1 | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 3 | 12 - 8 | 16 - 6 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 7 | 15 - 0 |
| | HF | No.2 | 8 - 6 | 13 - 2 | 17 - 2 | 8 - 2 | 12 - 7 | 16 - 5 | 7 - 10 | 12 - 1 | 15 - 9 | - | 11 - 7 | 15 - 1 | - | 11 - 0 | 14 - 3 |
| | HF | No.3/Stud | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 3 | - | 11 - 4 | 14 - 8 | - | 10 - 8 | 13 - 8 |
| | HF | Standard | 8 - 4 | - | - | 7 - 11 | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 9 - 7 | 14 - 9 | 19 - 3 | 9 - 2 | 14 - 2 | 18 - 4 | 8 - 9 | 13 - 7 | 17 - 7 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 0 | 12 - 4 | 16 - 0 |
| | SP | No.1 | 9 - 2 | 14 - 2 | 18 - 5 | 8 - 9 | 13 - 7 | 17 - 8 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 6 | 16 - 3 | - | 11 - 10 | 15 - 4 |
| | SP | No.2 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 11 | 16 - 10 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 11 | 15 - 6 | - | 11 - 3 | 14 - 8 |
| | SP | No.3 | 8 - 6 | 13 - 2 | 16 - 10 | 8 - 2 | 12 - 7 | 15 - 8 | 7 - 10 | 12 - 0 | 14 - 8 | - | 11 - 3 | 13 - 10 | - | 10 - 4 | 12 - 8 |
| | SP | Stud | 8 - 6 | 13 - 2 | 16 - 10 | 8 - 2 | 12 - 7 | 15 - 8 | 7 - 10 | 12 - 0 | 14 - 8 | - | 11 - 3 | 13 - 10 | - | 10 - 4 | 12 - 8 |
| | SP | Standard | 8 - 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 9 - 0 | 13 - 10 | 18 - 0 | 8 - 7 | 13 - 3 | 17 - 3 | 8 - 3 | 12 - 8 | 16 - 6 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 7 | 15 - 0 |
| | SPF | No.1 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 11 | 16 - 10 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 11 | 15 - 6 | - | 11 - 3 | 14 - 8 |
| | SPF | No.2 | 8 - 9 | 13 - 6 | 17 - 7 | 8 - 4 | 12 - 11 | 16 - 10 | 8 - 0 | 12 - 5 | 16 - 2 | - | 11 - 11 | 15 - 6 | - | 11 - 3 | 14 - 8 |
| | SPF | No.3/Stud | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 3 | - | 11 - 4 | 14 - 8 | - | 10 - 8 | 13 - 8 |
| | SPF | Standard | 8 - 4 | - | - | 7 - 11 | - | - | - | - | - | - | - | - | - | - | - |
| 16 | DFL | SS | 8 - 10 | 13 - 7 | 17 - 9 | 8 - 5 | 13 - 0 | 16 - 11 | 8 - 1 | 12 - 6 | 16 - 3 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 4 | 14 - 9 |
| | DFL | No.1 | 8 - 6 | 13 - 1 | 17 - 0 | 8 - 1 | 12 - 6 | 16 - 3 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 6 | 15 - 0 | - | 10 - 11 | 14 - 2 |
| | DFL | No.2 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 3 | - | 11 - 4 | 14 - 8 | - | 10 - 8 | 13 - 11 |
| | DFL | No.3/Stud | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 14 - 10 | - | 11 - 3 | 13 - 11 | - | 10 - 7 | 13 - 1 | - | 9 - 8 | 12 - 0 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 3 | - | 11 - 4 | 14 - 8 | - | 10 - 8 | 13 - 11 |
| | HF | No.1 | 8 - 1 | 12 - 7 | 16 - 4 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 6 | 14 - 11 | - | 11 - 1 | 14 - 4 | - | 10 - 5 | 13 - 7 |
| | HF | No.2 | - | 11 - 11 | 15 - 6 | - | 11 - 5 | 14 - 10 | - | 10 - 11 | 14 - 3 | - | 10 - 6 | 13 - 8 | - | 9 - 11 | 12 - 11 |
| | HF | No.3/Stud | - | 11 - 7 | 15 - 1 | - | 11 - 1 | 14 - 5 | - | 10 - 8 | 13 - 6 | - | 10 - 3 | 12 - 9 | - | 9 - 5 | 11 - 8 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | 8 - 8 | 13 - 4 | 17 - 5 | 8 - 3 | 12 - 9 | 16 - 7 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 4 | - | 11 - 2 | 14 - 6 |
| | SP | No.1 | 8 - 4 | 12 - 10 | 16 - 8 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 9 | 15 - 3 | - | 11 - 4 | 14 - 8 | - | 10 - 8 | 13 - 11 |
| | SP | No.2 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 15 - 3 | - | 11 - 3 | 14 - 7 | - | 10 - 9 | 14 - 0 | - | 10 - 2 | 13 - 3 |
| | SP | No.3 | - | 11 - 9 | 14 - 5 | - | 10 - 11 | 13 - 5 | - | 10 - 3 | 12 - 7 | - | 9 - 8 | 11 - 10 | - | 8 - 10 | 10 - 11 |
| | SP | Stud | - | 11 - 9 | 14 - 5 | - | 10 - 11 | 13 - 5 | - | 10 - 3 | 12 - 7 | - | 9 - 8 | 11 - 10 | - | 8 - 10 | 10 - 11 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | 8 - 1 | 12 - 7 | 16 - 4 | 7 - 9 | 12 - 0 | 15 - 7 | - | 11 - 6 | 14 - 11 | - | 11 - 1 | 14 - 4 | - | 10 - 5 | 13 - 7 |
| | SPF | No.1 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 15 - 3 | - | 11 - 3 | 14 - 7 | - | 10 - 9 | 14 - 0 | - | 10 - 2 | 13 - 3 |
| | SPF | No.2 | 7 - 11 | 12 - 3 | 15 - 11 | - | 11 - 8 | 15 - 3 | - | 11 - 3 | 14 - 7 | - | 10 - 9 | 14 - 0 | - | 10 - 2 | 13 - 3 |
| | SPF | No.3/Stud | - | 11 - 7 | 15 - 1 | - | 11 - 1 | 14 - 5 | - | 10 - 8 | 13 - 6 | - | 10 - 3 | 12 - 9 | - | 9 - 5 | 11 - 8 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | DFL | SS | - | 11 - 10 | 15 - 4 | - | 11 - 4 | 14 - 8 | - | 10 - 10 | 14 - 1 | - | 10 - 5 | 13 - 6 | - | 9 - 10 | 12 - 10 |
| | DFL | No.1 | - | 11 - 5 | 14 - 9 | - | 10 - 10 | 14 - 2 | - | 10 - 5 | 13 - 7 | - | 10 - 0 | 13 - 0 | - | 9 - 6 | 12 - 4 |
| | DFL | No.2 | - | 11 - 2 | 14 - 6 | - | 10 - 8 | 13 - 10 | - | 10 - 2 | 13 - 3 | - | 9 - 10 | 12 - 9 | - | 9 - 3 | 12 - 1 |
| | DFL | No.3/Stud | - | 10 - 4 | 12 - 9 | - | 9 - 8 | 11 - 11 | - | 9 - 1 | 11 - 2 | - | 8 - 6 | 10 - 6 | - | 7 - 10 | 9 - 8 |
| | DFL | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | HF | SS | - | 11 - 2 | 14 - 6 | - | 10 - 8 | 13 - 10 | - | 10 - 2 | 13 - 3 | - | 9 - 10 | 12 - 9 | - | 9 - 3 | 12 - 1 |
| | HF | No.1 | - | 10 - 11 | 14 - 2 | - | 10 - 5 | 13 - 6 | - | 10 - 0 | 13 - 0 | - | 9 - 7 | 12 - 6 | - | 9 - 1 | 11 - 9 |
| | HF | No.2 | - | 10 - 4 | 13 - 6 | - | 9 - 11 | 12 - 10 | - | 9 - 6 | 12 - 4 | - | 9 - 1 | 11 - 10 | - | 8 - 8 | 11 - 3 |
| | HF | No.3/Stud | - | 10 - 1 | 12 - 5 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 11 | - | 8 - 4 | 10 - 3 | - | - | 9 - 5 |
| | HF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SP | SS | - | 11 - 7 | 15 - 1 | - | 11 - 1 | 14 - 5 | - | 10 - 8 | 13 - 10 | - | 10 - 3 | 13 - 3 | - | 9 - 8 | 12 - 7 |
| | SP | No.1 | - | 11 - 2 | 14 - 6 | - | 10 - 8 | 13 - 10 | - | 10 - 2 | 13 - 3 | - | 9 - 10 | 12 - 9 | - | 9 - 3 | 12 - 1 |
| | SP | No.2 | - | 10 - 8 | 13 - 10 | - | 10 - 2 | 13 - 3 | - | 9 - 9 | 12 - 8 | - | 9 - 4 | 12 - 2 | - | 8 - 10 | 11 - 6 |
| | SP | No.3 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 10 | - | 8 - 3 | 10 - 2 | - | 7 - 9 | 9 - 6 | - | - | 8 - 9 |
| | SP | Stud | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 10 | - | 8 - 3 | 10 - 2 | - | 7 - 9 | 9 - 6 | - | - | 8 - 9 |
| | SP | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | SPF | SS | - | 10 - 11 | 14 - 2 | - | 10 - 5 | 13 - 6 | - | 10 - 0 | 13 - 0 | - | 9 - 7 | 12 - 6 | - | 9 - 1 | 11 - 9 |
| | SPF | No.1 | - | 10 - 8 | 13 - 10 | - | 10 - 2 | 13 - 3 | - | 9 - 9 | 12 - 8 | - | 9 - 4 | 12 - 2 | - | 8 - 10 | 11 - 6 |
| | SPF | No.2 | - | 10 - 8 | 13 - 10 | - | 10 - 2 | 13 - 3 | - | 9 - 9 | 12 - 8 | - | 9 - 4 | 12 - 2 | - | 8 - 10 | 11 - 6 |
| | SPF | No.3/Stud | - | 10 - 1 | 12 - 5 | - | 9 - 5 | 11 - 7 | - | 8 - 10 | 10 - 11 | - | 8 - 4 | 10 - 3 | - | - | 9 - 5 |
| | SPF | Standard | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See Table 3.20B footnotes.

## Table 3.20B Footnotes

† Allowable stud length exceeds 20 feet.

†† Maximum stud length for 2x4's is limited to 14 feet per Table 3.20C.

- Lumber grade not available or allowable stud length is less than 7 ft - 9 in. (for 8 ft wall height).

a Maximum stud lengths in Table 3.20B are based on interior zone loads and assume that all studs are covered on the inside with a minimum of 1/2 inch gypsum wallboard, attached in accordance with minimum building code requirements and sheathed on the exterior side with a minimum of 3/8 inch wood structural panel sheathing with all panel joints occurring over studs or blocking and attached using a minimum 8d common nails spaced a maximum of 6" on center at panel edges and 12" on center at intermediate framing members. To address additional end zone loading requirements, end zone stud spacings shall be multiplied by 0.80 for framing located within 4 feet of corners. The additional bending capacity provided by the reduced stud spacing is assumed to be sufficient to resist the additional end zone loading requirements.

1 Exterior studs shall be limited to a height between horizontal supports per Table 3.20C. DFL = Douglas Fir-Larch, HF = Hem-Fir, SP = Southern Pine, SPF = Spruce-Pine-Fir.

## Table 3.20C Size, Height, and Spacing Limits for Wood Studs[1, 2]

| | 2x3 | 2x4 | 2x5 | 2x6 | 2x8 |
|---|---|---|---|---|---|
| **Loadbearing Studs Supporting** | **Maximum Unsupported Stud Length (ft)** | | | | |
| | - | 10 | 10 | 10 | 10 |
| | **Maximum Stud Spacing (in. o.c.)** | | | | |
| **Roof & Ceiling Only** | - | 24 | 24 | 24 | 24 |
| **1 Floor Only** | - | 24 | 24 | 24 | 24 |
| **Roof, Ceiling, & 1 Floor Only** | - | 16 | 16 | 24 | 24 |
| **2 Floors Only** | - | 16 | 16 | 24 | 24 |
| **Roof, Ceiling, & 2 Floors** | - | - | - | 16 | 24 |
| **Non-loadbearing Studs** | **Maximum Unsupported Stud Length (ft)** | | | | |
| | 10 | 14 | 16 | 20 | 20 |
| | **Maximum Stud Spacing (in. o.c.)** | | | | |
| | 16 | 24 | 24 | 24 | 24 |

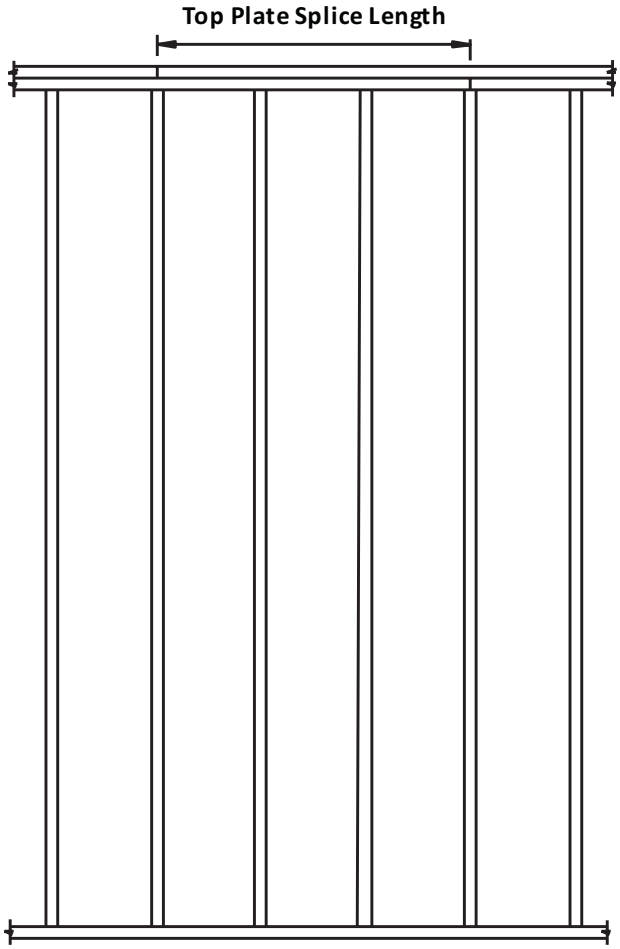
1 Maximum stud lengths in Tables 3.20A and B are based on wind loads. For dead and live loads, stud lengths shall be limited to the requirements in this table.

2 Habitable attics shall be considered an additional floor for purposes of determining gravity and seismic loads in accordance with Section 3.1.3.1.

## Table 3.21 Top Plate Requirements for Wind Exposures B & C

| Building Dimension of Wall Containing Top Plate Splice (ft) | Numer of 16d Common Nails per Each Side of Splice[1,2,3] |
|---|---|
| **12** | 5 |
| **16** | 6 |
| **20** | 8 |
| **24** | 10 |
| **28** | 11 |
| **32** | 13 |
| **36** | 14 |
| **40** | 16 |
| **50** | 20 |
| **60** | 24 |
| **70** | 28 |
| **80** | 32 |

1 Tabulated splice top plate to top plate connection shall not have more than 2-16d nails per 6".
2 Tabulated splice assume a building located in Exposure B or C.
3 Top plates shall be a minimum of stud grade material.



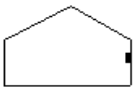
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## Table 3.22A1 Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls

# Dropped Exterior

(Supporting a Roof and Ceiling)

Dead Load Assumptions: Roof/Ceiling Assembly = 20 psf, $L/\Delta_{LL}$=240

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof and Ceiling  | 1-2x6 | 4 - 4 | 3 - 4 | 2 - 9 | 3 - 11 | 3 - 0 | 2 - 6 | 3 - 4 | 2 - 7 | 2 - 2 | 3 - 0 | 2 - 3 | 1 - 11 |
| | 1-2x8 | 5 - 3 | 4 - 1 | 3 - 6 | 4 - 10 | 3 - 9 | 3 - 2 | 4 - 2 | 3 - 3 | 2 - 8 | 3 - 9 | 2 - 10 | 2 - 5 |
| | 1-2x10 | 5 - 11 | 4 - 9 | 4 - 0 | 5 - 7 | 4 - 4 | 3 - 8 | 4 - 10 | 3 - 9 | 3 - 2 | 4 - 4 | 3 - 4 | 2 - 10 |
| | 1-2x12 | 6 - 6 | 5 - 3 | 4 - 7 | 6 - 2 | 4 - 11 | 4 - 3 | 5 - 5 | 4 - 4 | 3 - 8 | 4 - 11 | 3 - 10 | 3 - 3 |
| | 2-2x4 | 4 - 4 | 3 - 3 | 2 - 9 | 3 - 11 | 3 - 0 | 2 - 6 | 3 - 4 | 2 - 6 | 2 - 2 | 3 - 0 | 2 - 3 | 1 - 11 |
| | 2-2x6 | 6 - 2 | 4 - 10 | 4 - 1 | 5 - 8 | 4 - 4 | 3 - 8 | 4 - 11 | 3 - 9 | 3 - 2 | 4 - 5 | 3 - 4 | 2 - 10 |
| | 2-2x8 | 7 - 2 | 5 - 9 | 4 - 11 | 6 - 9 | 5 - 4 | 4 - 6 | 5 - 11 | 4 - 7 | 3 - 11 | 5 - 4 | 4 - 2 | 3 - 6 |
| | 2-2x10 | 7 - 10 | 6 - 4 | 5 - 6 | 7 - 6 | 6 - 0 | 5 - 2 | 6 - 7 | 5 - 3 | 4 - 6 | 6 - 0 | 4 - 9 | 4 - 1 |
| | 2-2x12 | 8 - 5 | 6 - 10 | 6 - 0 | 8 - 0 | 6 - 6 | 5 - 9 | 7 - 2 | 5 - 10 | 5 - 1 | 6 - 6 | 5 - 4 | 4 - 7 |
| | 3-2x8 | 8 - 5 | 6 - 10 | 5 - 11 | 8 - 0 | 6 - 5 | 5 - 6 | 7 - 1 | 5 - 7 | 4 - 10 | 6 - 5 | 5 - 1 | 4 - 4 |
| | 3-2x10 | 9 - 2 | 7 - 5 | 6 - 6 | 8 - 9 | 7 - 1 | 6 - 2 | 7 - 9 | 6 - 3 | 5 - 5 | 7 - 1 | 5 - 8 | 4 - 11 |
| | 3-2x12 | 9 - 9 | 8 - 0 | 7 - 0 | 9 - 4 | 7 - 7 | 6 - 8 | 8 - 4 | 6 - 9 | 5 - 11 | 7 - 7 | 6 - 2 | 5 - 5 |
| | 4-2x8 | 9 - 4 | 7 - 7 | 6 - 8 | 8 - 10 | 7 - 2 | 6 - 3 | 7 - 11 | 6 - 4 | 5 - 5 | 7 - 2 | 5 - 9 | 4 - 11 |
| | 4-2x10 | 10 - 2 | 8 - 3 | 7 - 3 | 9 - 8 | 7 - 11 | 6 - 11 | 8 - 8 | 7 - 0 | 6 - 1 | 7 - 11 | 6 - 5 | 5 - 6 |
| | 4-2x12 | 10 - 10 | 8 - 10 | 7 - 9 | 10 - 4 | 8 - 5 | 7 - 5 | 9 - 3 | 7 - 6 | 6 - 7 | 8 - 6 | 6 - 11 | 6 - 0 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 8 - 5 | 6 - 10 | 5 - 8 | 8 - 1 | 6 - 2 | 5 - 2 | 6 - 11 | 5 - 3 | 4 - 5 | 6 - 2 | 4 - 8 | 3 - 11 |
| | 3.125x6.875 | 10 - 7 | 8 - 5 | 7 - 1 | 10 - 1 | 7 - 8 | 6 - 5 | 8 - 7 | 6 - 6 | 5 - 6 | 7 - 8 | 5 - 10 | 4 - 10 |
| | 3.125x8.250 | 12 - 8 | 10 - 1 | 8 - 5 | 11 - 11 | 9 - 1 | 7 - 8 | 10 - 3 | 7 - 10 | 6 - 7 | 9 - 2 | 6 - 11 | 5 - 10 |
| | 3.125x9.625 | 14 - 9 | 11 - 6 | 9 - 9 | 13 - 8 | 10 - 6 | 8 - 10 | 11 - 10 | 9 - 0 | 7 - 7 | 10 - 6 | 8 - 0 | 6 - 9 |
| | 3.125x11.000 | 16 - 1 | 12 - 10 | 10 - 11 | 15 - 1 | 11 - 9 | 10 - 0 | 13 - 2 | 10 - 2 | 8 - 7 | 11 - 10 | 9 - 1 | 7 - 8 |
| | 3.125x12.375 | 17 - 1 | 13 - 9 | 11 - 11 | 16 - 2 | 12 - 10 | 11 - 0 | 14 - 3 | 11 - 2 | 9 - 6 | 12 - 11 | 10 - 1 | 8 - 6 |
| | 3.125x13.750 | 17 - 10 | 14 - 7 | 12 - 8 | 17 - 0 | 13 - 9 | 11 - 10 | 15 - 1 | 12 - 1 | 10 - 4 | 13 - 9 | 10 - 10 | 9 - 3 |
| | 3.125x15.125 | 18 - 7 | 15 - 2 | 13 - 3 | 17 - 9 | 14 - 4 | 12 - 6 | 15 - 9 | 12 - 9 | 11 - 0 | 14 - 5 | 11 - 6 | 9 - 11 |
| | 3.125x16.500 | 19 - 2 | 15 - 8 | 13 - 9 | 18 - 4 | 14 - 11 | 13 - 0 | 16 - 4 | 13 - 3 | 11 - 6 | 14 - 11 | 12 - 1 | 10 - 6 |
| | 3.125x17.875 | 19 - 8 | 16 - 2 | 14 - 2 | 18 - 10 | 15 - 4 | 13 - 6 | 16 - 10 | 13 - 8 | 11 - 11 | 15 - 5 | 12 - 6 | 10 - 11 |
| | 3.125x19.250 | 20-0† | 16 - 7 | 14 - 6 | 19 - 4 | 15 - 9 | 13 - 10 | 17 - 3 | 14 - 1 | 12 - 4 | 15 - 10 | 12 - 10 | 11 - 3 |
| | 3.125x20.625 | 20-0† | 16 - 11 | 14 - 11 | 19 - 9 | 16 - 2 | 14 - 2 | 17 - 8 | 14 - 5 | 12 - 8 | 16 - 2 | 13 - 2 | 11 - 7 |
| | 3.125x22.000 | 20-0† | 17 - 3 | 15 - 2 | 20-0† | 16 - 6 | 14 - 6 | 18 - 0 | 14 - 9 | 12 - 11 | 16 - 6 | 13 - 6 | 11 - 11 |
| | 3.125x23.375 | 20-0† | 17 - 7 | 15 - 6 | 20-0† | 16 - 10 | 14 - 10 | 18 - 5 | 15 - 0 | 13 - 3 | 16 - 10 | 13 - 9 | 12 - 2 |
| | 3.125x24.750 | 20-0† | 17 - 11 | 15 - 9 | 20-0† | 17 - 2 | 15 - 1 | 18 - 9 | 15 - 4 | 13 - 6 | 17 - 2 | 14 - 1 | 12 - 5 |
| | 5.125x5.500 | 9 - 11 | 8 - 3 | 7 - 4 | 9 - 7 | 7 - 11 | 6 - 7 | 8 - 7 | 6 - 9 | 5 - 8 | 7 - 11 | 6 - 0 | 5 - 0 |
| | 5.125x6.875 | 12 - 5 | 10 - 4 | 9 - 2 | 11 - 11 | 9 - 10 | 8 - 3 | 10 - 9 | 8 - 5 | 7 - 1 | 9 - 10 | 7 - 6 | 6 - 3 |
| | 5.125x8.250 | 14 - 11 | 12 - 5 | 10 - 11 | 14 - 4 | 11 - 10 | 9 - 11 | 12 - 11 | 10 - 1 | 8 - 5 | 11 - 10 | 8 - 11 | 7 - 6 |
| | 5.125x9.625 | 17 - 5 | 14 - 5 | 12 - 9 | 16 - 9 | 13 - 9 | 11 - 6 | 15 - 1 | 11 - 9 | 9 - 10 | 13 - 9 | 10 - 5 | 8 - 9 |
| | 5.125x11.000 | 19 - 11 | 16 - 6 | 14 - 6 | 19 - 1 | 15 - 7 | 13 - 1 | 17 - 2 | 13 - 4 | 11 - 3 | 15 - 8 | 11 - 11 | 9 - 11 |
| | 5.125x12.375 | 20-0† | 18 - 7 | 16 - 2 | 20-0† | 17 - 6 | 14 - 8 | 19 - 4 | 15 - 0 | 12 - 7 | 17 - 6 | 13 - 4 | 11 - 2 |
| | 5.125x13.750 | 20-0† | 20-0† | 17 - 10 | 20-0† | 19 - 3 | 16 - 3 | 20-0† | 16 - 7 | 13 - 11 | 19 - 4 | 14 - 9 | 12 - 4 |
| | 5.125x15.125 | 20-0† | 20-0† | 19 - 5 | 20-0† | 20-0† | 17 - 9 | 20-0† | 18 - 1 | 15 - 3 | 20-0† | 16 - 1 | 13 - 7 |
| | 5.125x16.500 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 2 | 20-0† | 19 - 6 | 16 - 6 | 20-0† | 17 - 5 | 14 - 8 |
| | 5.125x17.875 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 17 - 8 | 20-0† | 18 - 8 | 15 - 9 |
| | 5.125x19.250 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 9 | 20-0† | 19 - 9 | 16 - 10 |
| | 5.125x20.625 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 9 | 20-0† | 20-0† | 17 - 9 |
| | 5.125x22.000 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 7 |
| | 5.125x23.375 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 4 |
| | 5.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20 - 0 |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22A2 Laterally Supported (Raised) Header Spans for Exterior Loadbearing Walls

(Supporting a Roof and Ceiling)

Dead Load Assumptions: Roof/Ceiling Assembly = 20 psf, $L/\Delta_{LL}$=240

**Raised Exterior**

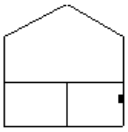
| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof and Ceiling | 1-2x6 | 4 - 5 | 3 - 4 | 2 - 10 | 4 - 0 | 3 - 0 | 2 - 6 | 3 - 5 | 2 - 7 | 2 - 2 | 3 - 0 | 2 - 4 | 1 - 11 |
| | 1-2x8 | 5 - 8 | 4 - 3 | 3 - 7 | 5 - 1 | 3 - 10 | 3 - 3 | 4 - 4 | 3 - 3 | 2 - 9 | 3 - 10 | 2 - 11 | 2 - 5 |
| | 1-2x10 | 6 - 8 | 5 - 1 | 4 - 3 | 6 - 0 | 4 - 7 | 3 - 10 | 5 - 2 | 3 - 11 | 3 - 3 | 4 - 7 | 3 - 5 | 2 - 11 |
| | 1-2x12 | 7 - 10 | 5 - 11 | 5 - 0 | 7 - 1 | 5 - 4 | 4 - 6 | 6 - 1 | 4 - 7 | 3 - 10 | 5 - 4 | 4 - 1 | 3 - 5 |
| | 2-2x4 | 4 - 5 | 3 - 4 | 2 - 9 | 4 - 0 | 3 - 0 | 2 - 6 | 3 - 5 | 2 - 7 | 2 - 2 | 3 - 0 | 2 - 3 | 1 - 11 |
| | 2-2x6 | 6 - 7 | 5 - 0 | 4 - 2 | 5 - 11 | 4 - 6 | 3 - 9 | 5 - 1 | 3 - 10 | 3 - 2 | 4 - 6 | 3 - 5 | 2 - 10 |
| | 2-2x8 | 8 - 4 | 6 - 4 | 5 - 3 | 7 - 6 | 5 - 8 | 4 - 9 | 6 - 5 | 4 - 10 | 4 - 1 | 5 - 8 | 4 - 4 | 3 - 7 |
| | 2-2x10 | 9 - 11 | 7 - 6 | 6 - 3 | 8 - 11 | 6 - 9 | 5 - 8 | 7 - 8 | 5 - 9 | 4 - 10 | 6 - 9 | 5 - 1 | 4 - 3 |
| | 2-2x12 | 11 - 8 | 8 - 10 | 7 - 4 | 10 - 6 | 7 - 11 | 6 - 8 | 9 - 0 | 6 - 9 | 5 - 8 | 8 - 0 | 6 - 0 | 5 - 0 |
| | 3-2x8 | 10 - 5 | 7 - 11 | 6 - 7 | 9 - 5 | 7 - 2 | 6 - 0 | 8 - 1 | 6 - 1 | 5 - 1 | 7 - 2 | 5 - 5 | 4 - 6 |
| | 3-2x10 | 12 - 5 | 9 - 4 | 7 - 10 | 11 - 2 | 8 - 5 | 7 - 1 | 9 - 7 | 7 - 3 | 6 - 1 | 8 - 6 | 6 - 5 | 5 - 4 |
| | 3-2x12 | 14 - 7 | 11 - 0 | 9 - 3 | 13 - 2 | 10 - 0 | 8 - 4 | 11 - 3 | 8 - 6 | 7 - 1 | 10 - 0 | 7 - 7 | 6 - 4 |
| | 4-2x8 | 12 - 1 | 9 - 1 | 7 - 8 | 10 - 11 | 8 - 3 | 6 - 11 | 9 - 4 | 7 - 0 | 5 - 11 | 8 - 3 | 6 - 3 | 5 - 3 |
| | 4-2x10 | 14 - 4 | 10 - 10 | 9 - 1 | 12 - 11 | 9 - 9 | 8 - 2 | 11 - 0 | 8 - 4 | 7 - 0 | 9 - 9 | 7 - 5 | 6 - 2 |
| | 4-2x12 | 16 - 10 | 12 - 9 | 10 - 8 | 15 - 3 | 11 - 6 | 9 - 7 | 13 - 0 | 9 - 10 | 8 - 3 | 11 - 6 | 8 - 9 | 7 - 3 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 8 - 5 | 6 - 10 | 5 - 9 | 8 - 1 | 6 - 2 | 5 - 2 | 7 - 0 | 5 - 3 | 4 - 5 | 6 - 2 | 4 - 8 | 3 - 11 |
| | 3.125x6.875 | 10 - 7 | 8 - 7 | 7 - 2 | 10 - 2 | 7 - 9 | 6 - 6 | 8 - 9 | 6 - 7 | 5 - 6 | 7 - 9 | 5 - 10 | 4 - 11 |
| | 3.125x8.250 | 12 - 8 | 10 - 3 | 8 - 7 | 12 - 2 | 9 - 3 | 7 - 9 | 10 - 6 | 7 - 11 | 6 - 7 | 9 - 3 | 7 - 0 | 5 - 10 |
| | 3.125x9.625 | 14 - 9 | 12 - 0 | 10 - 0 | 14 - 2 | 10 - 10 | 9 - 1 | 12 - 3 | 9 - 3 | 7 - 9 | 10 - 10 | 8 - 2 | 6 - 10 |
| | 3.125x11.000 | 16 - 11 | 13 - 8 | 11 - 6 | 16 - 3 | 12 - 4 | 10 - 4 | 13 - 11 | 10 - 7 | 8 - 10 | 12 - 5 | 9 - 4 | 7 - 10 |
| | 3.125x12.375 | 19 - 0 | 15 - 5 | 12 - 11 | 18 - 3 | 13 - 11 | 11 - 8 | 15 - 8 | 11 - 10 | 9 - 11 | 13 - 11 | 10 - 6 | 8 - 10 |
| | 3.125x13.750 | 20-0† | 17 - 1 | 14 - 4 | 20-0† | 15 - 5 | 12 - 11 | 17 - 5 | 13 - 2 | 11 - 0 | 15 - 6 | 11 - 8 | 9 - 9 |
| | 3.125x15.125 | 20-0† | 18 - 10 | 15 - 9 | 20-0† | 17 - 0 | 14 - 3 | 19 - 2 | 14 - 6 | 12 - 2 | 17 - 0 | 12 - 10 | 10 - 9 |
| | 3.125x16.500 | 20-0† | 20-0† | 17 - 2 | 20-0† | 18 - 6 | 15 - 6 | 20-0† | 15 - 10 | 13 - 3 | 18 - 7 | 14 - 0 | 11 - 9 |
| | 3.125x17.875 | 20-0† | 20-0† | 18 - 7 | 20-0† | 20-0† | 16 - 10 | 20-0† | 17 - 2 | 14 - 4 | 20-0† | 15 - 3 | 12 - 9 |
| | 3.125x19.250 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 1 | 20-0† | 18 - 6 | 15 - 5 | 20-0† | 16 - 5 | 13 - 8 |
| | 3.125x20.625 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 5 | 20-0† | 19 - 9 | 16 - 7 | 20-0† | 17 - 7 | 14 - 8 |
| | 3.125x22.000 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 17 - 8 | 20-0† | 18 - 8 | 15 - 8 |
| | 3.125x23.375 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 8 | 20-0† | 19 - 9 | 16 - 8 |
| | 3.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 20-0† | 20-0† | 17 - 7 |
| | 5.125x5.500 | 9 - 11 | 8 - 3 | 7 - 4 | 9 - 7 | 7 - 11 | 6 - 7 | 8 - 7 | 6 - 9 | 5 - 8 | 7 - 11 | 6 - 0 | 5 - 0 |
| | 5.125x6.875 | 12 - 5 | 10 - 4 | 9 - 2 | 11 - 11 | 9 - 11 | 8 - 3 | 10 - 9 | 8 - 5 | 7 - 1 | 9 - 11 | 7 - 6 | 6 - 3 |
| | 5.125x8.250 | 14 - 11 | 12 - 5 | 11 - 0 | 14 - 4 | 11 - 10 | 9 - 11 | 12 - 11 | 10 - 2 | 8 - 6 | 11 - 11 | 9 - 0 | 7 - 6 |
| | 5.125x9.625 | 17 - 5 | 14 - 5 | 12 - 10 | 16 - 9 | 13 - 10 | 11 - 7 | 15 - 1 | 11 - 10 | 9 - 11 | 13 - 10 | 10 - 6 | 8 - 9 |
| | 5.125x11.000 | 19 - 11 | 16 - 6 | 14 - 8 | 19 - 1 | 15 - 10 | 13 - 3 | 17 - 2 | 13 - 6 | 11 - 4 | 15 - 10 | 12 - 0 | 10 - 0 |
| | 5.125x12.375 | 20-0† | 18 - 7 | 16 - 6 | 20-0† | 17 - 10 | 14 - 11 | 19 - 4 | 15 - 2 | 12 - 9 | 17 - 10 | 13 - 6 | 11 - 3 |
| | 5.125x13.750 | 20-0† | 20-0† | 18 - 4 | 20-0† | 19 - 8 | 16 - 7 | 20-0† | 16 - 11 | 14 - 2 | 19 - 9 | 15 - 0 | 12 - 6 |
| | 5.125x15.125 | 20-0† | 20-0† | 20 - 0 | 20-0† | 20-0† | 18 - 1 | 20-0† | 18 - 6 | 15 - 7 | 20-0† | 16 - 6 | 13 - 9 |
| | 5.125x16.500 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 7 | 20-0† | 20 - 0 | 16 - 10 | 20-0† | 17 - 10 | 15 - 0 |
| | 5.125x17.875 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 1 | 20-0† | 19 - 2 | 16 - 2 |
| | 5.125x19.250 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 4 | 20-0† | 20-0† | 17 - 3 |
| | 5.125x20.625 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 5 |
| | 5.125x22.000 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 6 |
| | 5.125x23.375 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† |
| | 5.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22B1 Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls

**Dropped Exterior**

(Supporting a Roof, Ceiling, and One Center Bearing Floor) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof, Ceiling, and One Center Bearing Floor | 1-2x6 | 3 - 5 | 2 - 8 | 2 - 3 | 3 - 2 | 2 - 6 | 2 - 2 | 2 - 11 | 2 - 4 | 1 - 11 | 2 - 8 | 2 - 2 | 1 - 10 |
| | 1-2x8 | 4 - 3 | 3 - 4 | 2 - 10 | 4 - 0 | 3 - 2 | 2 - 8 | 3 - 8 | 2 - 11 | 2 - 5 | 3 - 5 | 2 - 8 | 2 - 3 |
| | 1-2x10 | 4 - 10 | 3 - 11 | 3 - 4 | 4 - 7 | 3 - 8 | 3 - 2 | 4 - 3 | 3 - 5 | 2 - 11 | 3 - 11 | 3 - 2 | 2 - 8 |
| | 1-2x12 | 5 - 5 | 4 - 5 | 3 - 10 | 5 - 3 | 4 - 3 | 3 - 8 | 4 - 10 | 3 - 11 | 3 - 4 | 4 - 6 | 3 - 8 | 3 - 1 |
| | 2-2x4 | 3 - 4 | 2 - 8 | 2 - 3 | 3 - 2 | 2 - 6 | 2 - 1 | 2 - 11 | 2 - 3 | 1 - 11 | 2 - 8 | 2 - 1 | 1 - 9 |
| | 2-2x6 | 4 - 11 | 3 - 11 | 3 - 4 | 4 - 8 | 3 - 8 | 3 - 2 | 4 - 4 | 3 - 4 | 2 - 10 | 3 - 11 | 3 - 2 | 2 - 8 |
|  | 2-2x8 | 5 - 11 | 4 - 10 | 4 - 2 | 5 - 8 | 4 - 6 | 3 - 11 | 5 - 3 | 4 - 2 | 3 - 7 | 4 - 10 | 3 - 11 | 3 - 4 |
| | 2-2x10 | 6 - 7 | 5 - 5 | 4 - 9 | 6 - 4 | 5 - 2 | 4 - 6 | 5 - 11 | 4 - 10 | 4 - 2 | 5 - 6 | 4 - 6 | 3 - 10 |
| | 2-2x12 | 7 - 1 | 5 - 11 | 5 - 3 | 6 - 10 | 5 - 9 | 5 - 0 | 6 - 5 | 5 - 4 | 4 - 8 | 6 - 1 | 5 - 0 | 4 - 5 |
| | 3-2x8 | 7 - 0 | 5 - 9 | 5 - 0 | 6 - 9 | 5 - 6 | 4 - 9 | 6 - 4 | 5 - 1 | 4 - 5 | 5 - 11 | 4 - 9 | 4 - 1 |
| | 3-2x10 | 7 - 8 | 6 - 4 | 5 - 7 | 7 - 5 | 6 - 2 | 5 - 5 | 7 - 0 | 5 - 9 | 5 - 0 | 6 - 6 | 5 - 5 | 4 - 8 |
| | 3-2x12 | 8 - 2 | 6 - 10 | 6 - 1 | 8 - 0 | 6 - 8 | 5 - 11 | 7 - 6 | 6 - 3 | 5 - 6 | 7 - 0 | 5 - 11 | 5 - 2 |
| | 4-2x8 | 7 - 10 | 6 - 6 | 5 - 8 | 7 - 7 | 6 - 3 | 5 - 5 | 7 - 1 | 5 - 9 | 5 - 0 | 6 - 7 | 5 - 5 | 4 - 8 |
| | 4-2x10 | 8 - 6 | 7 - 1 | 6 - 3 | 8 - 4 | 6 - 11 | 6 - 1 | 7 - 9 | 6 - 5 | 5 - 7 | 7 - 4 | 6 - 1 | 5 - 3 |
| | 4-2x12 | 9 - 1 | 7 - 7 | 6 - 9 | 8 - 11 | 7 - 5 | 6 - 7 | 8 - 4 | 6 - 11 | 6 - 2 | 7 - 10 | 6 - 7 | 5 - 10 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 6 - 11 | 5 - 5 | 4 - 8 | 6 - 7 | 5 - 2 | 4 - 4 | 6 - 1 | 4 - 8 | 4 - 0 | 5 - 7 | 4 - 4 | 3 - 8 |
| | 3.125x6.875 | 8 - 8 | 6 - 10 | 5 - 9 | 8 - 2 | 6 - 5 | 5 - 5 | 7 - 6 | 5 - 10 | 5 - 0 | 6 - 11 | 5 - 5 | 4 - 7 |
| | 3.125x8.250 | 10 - 4 | 8 - 1 | 6 - 11 | 9 - 9 | 7 - 8 | 6 - 6 | 9 - 0 | 7 - 0 | 5 - 11 | 8 - 3 | 6 - 6 | 5 - 6 |
| | 3.125x9.625 | 11 - 11 | 9 - 5 | 8 - 0 | 11 - 3 | 8 - 10 | 7 - 6 | 10 - 4 | 8 - 1 | 6 - 11 | 9 - 6 | 7 - 6 | 6 - 5 |
| | 3.125x11.000 | 13 - 2 | 10 - 7 | 9 - 1 | 12 - 6 | 10 - 0 | 8 - 6 | 11 - 7 | 9 - 2 | 7 - 10 | 10 - 9 | 8 - 6 | 7 - 3 |
| | 3.125x12.375 | 14 - 2 | 11 - 7 | 10 - 0 | 13 - 8 | 11 - 0 | 9 - 5 | 12 - 8 | 10 - 2 | 8 - 8 | 11 - 9 | 9 - 5 | 8 - 1 |
| | 3.125x13.750 | 14 - 11 | 12 - 4 | 10 - 9 | 14 - 6 | 11 - 10 | 10 - 3 | 13 - 6 | 11 - 0 | 9 - 5 | 12 - 7 | 10 - 3 | 8 - 10 |
| | 3.125x15.125 | 15 - 7 | 12 - 11 | 11 - 5 | 15 - 2 | 12 - 6 | 10 - 11 | 14 - 2 | 11 - 8 | 10 - 1 | 13 - 3 | 10 - 11 | 9 - 6 |
| | 3.125x16.500 | 16 - 1 | 13 - 5 | 11 - 10 | 15 - 8 | 13 - 0 | 11 - 5 | 14 - 9 | 12 - 2 | 10 - 8 | 13 - 10 | 11 - 6 | 10 - 0 |
| | 3.125x17.875 | 16 - 7 | 13 - 10 | 12 - 3 | 16 - 2 | 13 - 6 | 11 - 11 | 15 - 2 | 12 - 7 | 11 - 1 | 14 - 3 | 11 - 11 | 10 - 5 |
| | 3.125x19.250 | 17 - 0 | 14 - 3 | 12 - 7 | 16 - 7 | 13 - 10 | 12 - 3 | 15 - 7 | 13 - 0 | 11 - 5 | 14 - 8 | 12 - 3 | 10 - 10 |
| | 3.125x20.625 | 17 - 4 | 14 - 7 | 12 - 11 | 17 - 0 | 14 - 2 | 12 - 7 | 16 - 0 | 13 - 3 | 11 - 9 | 15 - 0 | 12 - 7 | 11 - 2 |
| | 3.125x22.000 | 17 - 9 | 14 - 10 | 13 - 2 | 17 - 4 | 14 - 6 | 12 - 10 | 16 - 4 | 13 - 7 | 12 - 1 | 15 - 4 | 12 - 10 | 11 - 5 |
| | 3.125x23.375 | 18 - 1 | 15 - 2 | 13 - 6 | 17 - 8 | 14 - 10 | 13 - 2 | 16 - 8 | 13 - 10 | 12 - 4 | 15 - 8 | 13 - 2 | 11 - 8 |
| | 3.125x24.750 | 18 - 5 | 15 - 5 | 13 - 9 | 18 - 0 | 15 - 1 | 13 - 5 | 16 - 11 | 14 - 2 | 12 - 7 | 15 - 11 | 13 - 5 | 12 - 0 |
| | 5.125x5.500 | 8 - 6 | 7 - 0 | 5 - 11 | 8 - 4 | 6 - 7 | 5 - 7 | 7 - 9 | 6 - 0 | 5 - 1 | 7 - 0 | 5 - 7 | 4 - 9 |
| | 5.125x6.875 | 10 - 7 | 8 - 9 | 7 - 5 | 10 - 5 | 8 - 3 | 7 - 0 | 9 - 8 | 7 - 6 | 6 - 5 | 8 - 9 | 7 - 0 | 5 - 11 |
| | 5.125x8.250 | 12 - 8 | 10 - 6 | 8 - 11 | 12 - 5 | 9 - 10 | 8 - 5 | 11 - 7 | 9 - 0 | 7 - 8 | 10 - 5 | 8 - 5 | 7 - 1 |
| | 5.125x9.625 | 14 - 10 | 12 - 2 | 10 - 4 | 14 - 6 | 11 - 6 | 9 - 9 | 13 - 6 | 10 - 6 | 8 - 11 | 12 - 2 | 9 - 9 | 8 - 3 |
| | 5.125x11.000 | 16 - 11 | 13 - 11 | 11 - 10 | 16 - 7 | 13 - 1 | 11 - 2 | 15 - 5 | 12 - 0 | 10 - 2 | 13 - 11 | 11 - 2 | 9 - 5 |
| | 5.125x12.375 | 19 - 1 | 15 - 7 | 13 - 3 | 18 - 8 | 14 - 8 | 12 - 6 | 17 - 3 | 13 - 5 | 11 - 5 | 15 - 8 | 12 - 6 | 10 - 7 |
| | 5.125x13.750 | 20-0† | 17 - 3 | 14 - 8 | 20-0† | 16 - 3 | 13 - 10 | 19 - 0 | 14 - 10 | 12 - 7 | 17 - 5 | 13 - 10 | 11 - 8 |
| | 5.125x15.125 | 20-0† | 18 - 10 | 16 - 1 | 20-0† | 17 - 8 | 15 - 1 | 20-0† | 16 - 3 | 13 - 10 | 19 - 0 | 15 - 1 | 12 - 10 |
| | 5.125x16.500 | 20-0† | 20-0† | 17 - 5 | 20-0† | 19 - 1 | 16 - 4 | 20-0† | 17 - 7 | 15 - 0 | 20-0† | 16 - 4 | 13 - 11 |
| | 5.125x17.875 | 20-0† | 20-0† | 18 - 8 | 20-0† | 20-0† | 17 - 7 | 20-0† | 18 - 10 | 16 - 1 | 20-0† | 17 - 7 | 15 - 0 |
| | 5.125x19.250 | 20-0† | 20-0† | 19 - 8 | 20-0† | 20-0† | 18 - 8 | 20-0† | 19 - 11 | 17 - 2 | 20-0† | 18 - 8 | 16 - 0 |
| | 5.125x20.625 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 20-0† | 20-0† | 18 - 1 | 20-0† | 19 - 8 | 16 - 11 |
| | 5.125x22.000 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 11 | 20-0† | 20-0† | 17 - 9 |
| | 5.125x23.375 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 20-0† | 20-0† | 18 - 6 |
| | 5.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 1 |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22B2 Laterally Supported (Raised) Header Spans for Exterior Loadbearing Walls

**Raised Exterior**

(Supporting a Roof, Ceiling, and One Center Bearing Floor) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof, Ceiling, and One Center Bearing Floor | 1-2x6 | 3 - 5 | 2 - 8 | 2 - 3 | 3 - 3 | 2 - 6 | 2 - 2 | 3 - 0 | 2 - 4 | 2 - 0 | 2 - 9 | 2 - 2 | 1 - 10 |
| | 1-2x8 | 4 - 4 | 3 - 5 | 2 - 11 | 4 - 1 | 3 - 2 | 2 - 9 | 3 - 9 | 2 - 11 | 2 - 6 | 3 - 6 | 2 - 9 | 2 - 4 |
| | 1-2x10 | 5 - 2 | 4 - 0 | 3 - 5 | 4 - 10 | 3 - 10 | 3 - 3 | 4 - 6 | 3 - 6 | 2 - 11 | 4 - 1 | 3 - 3 | 2 - 9 |
| | 1-2x12 | 6 - 1 | 4 - 9 | 4 - 0 | 5 - 9 | 4 - 6 | 3 - 10 | 5 - 3 | 4 - 1 | 3 - 6 | 4 - 10 | 3 - 10 | 3 - 3 |
| | 2-2x4 | 3 - 5 | 2 - 8 | 2 - 3 | 3 - 2 | 2 - 6 | 2 - 1 | 2 - 11 | 2 - 3 | 1 - 11 | 2 - 8 | 2 - 1 | 1 - 10 |
| | 2-2x6 | 5 - 1 | 4 - 0 | 3 - 5 | 4 - 10 | 3 - 9 | 3 - 2 | 4 - 5 | 3 - 5 | 2 - 11 | 4 - 1 | 3 - 2 | 2 - 8 |
| | 2-2x8 | 6 - 5 | 5 - 1 | 4 - 3 | 6 - 1 | 4 - 9 | 4 - 0 | 5 - 7 | 4 - 4 | 3 - 8 | 5 - 2 | 4 - 0 | 3 - 5 |
| | 2-2x10 | 7 - 8 | 6 - 0 | 5 - 1 | 7 - 3 | 5 - 8 | 4 - 9 | 6 - 8 | 5 - 2 | 4 - 4 | 6 - 1 | 4 - 9 | 4 - 1 |
| | 2-2x12 | 9 - 0 | 7 - 1 | 6 - 0 | 8 - 6 | 6 - 8 | 5 - 8 | 7 - 10 | 6 - 1 | 5 - 2 | 7 - 2 | 5 - 8 | 4 - 9 |
| | 3-2x8 | 8 - 1 | 6 - 4 | 5 - 4 | 7 - 8 | 5 - 11 | 5 - 1 | 7 - 0 | 5 - 5 | 4 - 7 | 6 - 5 | 5 - 1 | 4 - 3 |
| | 3-2x10 | 9 - 7 | 7 - 6 | 6 - 4 | 9 - 1 | 7 - 1 | 6 - 0 | 8 - 4 | 6 - 6 | 5 - 6 | 7 - 8 | 6 - 0 | 5 - 1 |
| | 3-2x12 | 11 - 3 | 8 - 10 | 7 - 6 | 10 - 8 | 8 - 4 | 7 - 1 | 9 - 10 | 7 - 7 | 6 - 5 | 9 - 0 | 7 - 1 | 6 - 0 |
| | 4-2x8 | 9 - 4 | 7 - 4 | 6 - 2 | 8 - 10 | 6 - 11 | 5 - 10 | 8 - 1 | 6 - 4 | 5 - 4 | 7 - 5 | 5 - 10 | 4 - 11 |
| | 4-2x10 | 11 - 0 | 8 - 8 | 7 - 4 | 10 - 5 | 8 - 2 | 6 - 11 | 9 - 7 | 7 - 6 | 6 - 4 | 8 - 10 | 6 - 11 | 5 - 10 |
| | 4-2x12 | 13 - 0 | 10 - 2 | 8 - 8 | 12 - 4 | 9 - 7 | 8 - 2 | 11 - 4 | 8 - 10 | 7 - 5 | 10 - 4 | 8 - 2 | 6 - 11 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 7 - 0 | 5 - 6 | 4 - 8 | 6 - 7 | 5 - 2 | 4 - 5 | 6 - 1 | 4 - 9 | 4 - 0 | 5 - 7 | 4 - 5 | 3 - 8 |
| | 3.125x6.875 | 8 - 9 | 6 - 10 | 5 - 10 | 8 - 3 | 6 - 5 | 5 - 6 | 7 - 7 | 5 - 11 | 5 - 0 | 7 - 0 | 5 - 6 | 4 - 8 |
| | 3.125x8.250 | 10 - 6 | 8 - 3 | 7 - 0 | 9 - 11 | 7 - 9 | 6 - 7 | 9 - 1 | 7 - 1 | 6 - 0 | 8 - 4 | 6 - 7 | 5 - 7 |
| | 3.125x9.625 | 12 - 3 | 9 - 7 | 8 - 2 | 11 - 7 | 9 - 0 | 7 - 8 | 10 - 8 | 8 - 3 | 7 - 0 | 9 - 9 | 7 - 8 | 6 - 6 |
| | 3.125x11.000 | 14 - 0 | 10 - 11 | 9 - 4 | 13 - 3 | 10 - 4 | 8 - 9 | 12 - 2 | 9 - 5 | 8 - 0 | 11 - 2 | 8 - 9 | 7 - 5 |
| | 3.125x12.375 | 15 - 8 | 12 - 4 | 10 - 6 | 14 - 11 | 11 - 7 | 9 - 10 | 13 - 8 | 10 - 8 | 9 - 0 | 12 - 6 | 9 - 10 | 8 - 4 |
| | 3.125x13.750 | 17 - 5 | 13 - 8 | 11 - 8 | 16 - 6 | 12 - 11 | 10 - 11 | 15 - 2 | 11 - 10 | 10 - 0 | 13 - 11 | 10 - 11 | 9 - 3 |
| | 3.125x15.125 | 19 - 2 | 15 - 1 | 12 - 9 | 18 - 2 | 14 - 2 | 12 - 1 | 16 - 9 | 13 - 0 | 11 - 0 | 15 - 4 | 12 - 1 | 10 - 2 |
| | 3.125x16.500 | 20-0† | 16 - 5 | 13 - 11 | 19 - 10 | 15 - 6 | 13 - 2 | 18 - 3 | 14 - 2 | 12 - 0 | 16 - 9 | 13 - 2 | 11 - 1 |
| | 3.125x17.875 | 20-0† | 17 - 9 | 15 - 1 | 20-0† | 16 - 9 | 14 - 3 | 19 - 9 | 15 - 4 | 13 - 0 | 18 - 1 | 14 - 3 | 12 - 0 |
| | 3.125x19.250 | 20-0† | 19 - 2 | 16 - 3 | 20-0† | 18 - 1 | 15 - 4 | 20-0† | 16 - 6 | 14 - 0 | 19 - 6 | 15 - 4 | 12 - 11 |
| | 3.125x20.625 | 20-0† | 20-0† | 17 - 5 | 20-0† | 19 - 4 | 16 - 5 | 20-0† | 17 - 9 | 15 - 0 | 20-0† | 16 - 5 | 13 - 11 |
| | 3.125x22.000 | 20-0† | 20-0† | 18 - 7 | 20-0† | 20-0† | 17 - 6 | 20-0† | 18 - 11 | 16 - 0 | 20-0† | 17 - 6 | 14 - 10 |
| | 3.125x23.375 | 20-0† | 20-0† | 19 - 8 | 20-0† | 20-0† | 18 - 7 | 20-0† | 19 - 11 | 17 - 0 | 20-0† | 18 - 7 | 15 - 9 |
| | 3.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 7 | 20-0† | 20-0† | 17 - 11 | 20-0† | 19 - 7 | 16 - 8 |
| | 5.125x5.500 | 8 - 6 | 7 - 0 | 5 - 11 | 8 - 4 | 6 - 7 | 5 - 7 | 7 - 9 | 6 - 1 | 5 - 1 | 7 - 0 | 5 - 7 | 4 - 9 |
| | 5.125x6.875 | 10 - 7 | 8 - 9 | 7 - 5 | 10 - 5 | 8 - 3 | 7 - 0 | 9 - 8 | 7 - 7 | 6 - 5 | 8 - 9 | 7 - 0 | 5 - 11 |
| | 5.125x8.250 | 12 - 8 | 10 - 6 | 8 - 11 | 12 - 5 | 9 - 11 | 8 - 5 | 11 - 7 | 9 - 1 | 7 - 8 | 10 - 5 | 8 - 5 | 7 - 1 |
| | 5.125x9.625 | 14 - 10 | 12 - 3 | 10 - 5 | 14 - 6 | 11 - 7 | 9 - 10 | 13 - 6 | 10 - 7 | 9 - 0 | 12 - 2 | 9 - 10 | 8 - 4 |
| | 5.125x11.000 | 16 - 11 | 14 - 0 | 11 - 11 | 16 - 7 | 13 - 3 | 11 - 3 | 15 - 5 | 12 - 1 | 10 - 3 | 13 - 11 | 11 - 3 | 9 - 6 |
| | 5.125x12.375 | 19 - 1 | 15 - 9 | 13 - 5 | 18 - 8 | 14 - 11 | 12 - 7 | 17 - 5 | 13 - 7 | 11 - 6 | 15 - 8 | 12 - 7 | 10 - 8 |
| | 5.125x13.750 | 20-0† | 17 - 6 | 14 - 11 | 20-0† | 16 - 6 | 14 - 0 | 19 - 4 | 15 - 2 | 12 - 10 | 17 - 5 | 14 - 0 | 11 - 10 |
| | 5.125x15.125 | 20-0† | 19 - 2 | 16 - 5 | 20-0† | 18 - 1 | 15 - 5 | 20-0† | 16 - 8 | 14 - 1 | 19 - 2 | 15 - 5 | 13 - 0 |
| | 5.125x16.500 | 20-0† | 20-0† | 17 - 9 | 20-0† | 19 - 7 | 16 - 9 | 20-0† | 18 - 0 | 15 - 4 | 20-0† | 16 - 9 | 14 - 3 |
| | 5.125x17.875 | 20-0† | 20-0† | 19 - 1 | 20-0† | 20-0† | 18 - 0 | 20-0† | 19 - 4 | 16 - 6 | 20-0† | 18 - 0 | 15 - 4 |
| | 5.125x19.250 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 3 | 20-0† | 20-0† | 17 - 8 | 20-0† | 19 - 3 | 16 - 5 |
| | 5.125x20.625 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 9 | 20-0† | 20-0† | 17 - 5 |
| | 5.125x22.000 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 11 | 20-0† | 20-0† | 18 - 6 |
| | 5.125x23.375 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 6 |
| | 5.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† |

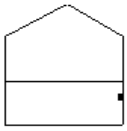
† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22C1 Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls

**Dropped Exterior**

(Supporting a Roof, Ceiling, and One Clear Span Floor) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof, Ceiling, and One Clear Span Floor | 1-2x6 | 2 - 11 | 2 - 3 | 1 - 10 | 2 - 11 | 2 - 3 | 1 - 10 | 2 - 8 | 2 - 1 | 1 - 9 | 2 - 7 | 1 - 11 | 1 - 8 |
| | 1-2x8 | 3 - 8 | 2 - 10 | 2 - 4 | 3 - 8 | 2 - 10 | 2 - 4 | 3 - 5 | 2 - 7 | 2 - 2 | 3 - 2 | 2 - 6 | 2 - 1 |
| | 1-2x10 | 4 - 3 | 3 - 4 | 2 - 9 | 4 - 3 | 3 - 4 | 2 - 9 | 4 - 0 | 3 - 1 | 2 - 7 | 3 - 9 | 2 - 11 | 2 - 5 |
| | 1-2x12 | 4 - 11 | 3 - 10 | 3 - 3 | 4 - 10 | 3 - 10 | 3 - 3 | 4 - 6 | 3 - 7 | 3 - 0 | 4 - 4 | 3 - 4 | 2 - 10 |
| | 2-2x4 | 2 - 11 | 2 - 3 | 1 - 10 | 2 - 11 | 2 - 3 | 1 - 10 | 2 - 8 | 2 - 1 | 1 - 9 | 2 - 6 | 1 - 11 | 1 - 7 |
| | 2-2x6 | 4 - 3 | 3 - 3 | 2 - 9 | 4 - 3 | 3 - 3 | 2 - 9 | 4 - 0 | 3 - 1 | 2 - 7 | 3 - 9 | 2 - 10 | 2 - 5 |
| | 2-2x8 | 5 - 3 | 4 - 1 | 3 - 6 | 5 - 2 | 4 - 1 | 3 - 6 | 4 - 10 | 3 - 10 | 3 - 3 | 4 - 7 | 3 - 7 | 3 - 0 |
| | 2-2x10 | 6 - 0 | 4 - 9 | 4 - 1 | 5 - 10 | 4 - 8 | 4 - 0 | 5 - 6 | 4 - 5 | 3 - 9 | 5 - 3 | 4 - 2 | 3 - 7 |
| | 2-2x12 | 6 - 6 | 5 - 4 | 4 - 8 | 6 - 4 | 5 - 3 | 4 - 7 | 6 - 1 | 4 - 11 | 4 - 3 | 5 - 9 | 4 - 8 | 4 - 1 |
| | 3-2x8 | 6 - 5 | 5 - 0 | 4 - 3 | 6 - 3 | 5 - 0 | 4 - 3 | 5 - 11 | 4 - 8 | 4 - 0 | 5 - 7 | 4 - 5 | 3 - 9 |
| | 3-2x10 | 7 - 1 | 5 - 9 | 4 - 11 | 6 - 11 | 5 - 7 | 4 - 10 | 6 - 7 | 5 - 3 | 4 - 7 | 6 - 3 | 5 - 0 | 4 - 4 |
| | 3-2x12 | 7 - 7 | 6 - 3 | 5 - 6 | 7 - 5 | 6 - 1 | 5 - 5 | 7 - 1 | 5 - 10 | 5 - 1 | 6 - 9 | 5 - 6 | 4 - 10 |
| | 4-2x8 | 7 - 3 | 5 - 9 | 4 - 11 | 7 - 0 | 5 - 8 | 4 - 10 | 6 - 8 | 5 - 4 | 4 - 6 | 6 - 4 | 5 - 0 | 4 - 3 |
| | 4-2x10 | 7 - 11 | 6 - 6 | 5 - 7 | 7 - 8 | 6 - 3 | 5 - 6 | 7 - 4 | 5 - 11 | 5 - 2 | 7 - 0 | 5 - 8 | 4 - 11 |
| | 4-2x12 | 8 - 5 | 6 - 11 | 6 - 2 | 8 - 3 | 6 - 9 | 6 - 0 | 7 - 10 | 6 - 5 | 5 - 8 | 7 - 6 | 6 - 2 | 5 - 5 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 6 - 0 | 4 - 7 | 3 - 10 | 6 - 0 | 4 - 7 | 3 - 10 | 5 - 7 | 4 - 3 | 3 - 7 | 5 - 3 | 4 - 0 | 3 - 4 |
| | 3.125x6.875 | 7 - 5 | 5 - 8 | 4 - 9 | 7 - 5 | 5 - 8 | 4 - 9 | 6 - 11 | 5 - 4 | 4 - 6 | 6 - 6 | 5 - 0 | 4 - 2 |
| | 3.125x8.250 | 8 - 11 | 6 - 10 | 5 - 9 | 8 - 10 | 6 - 10 | 5 - 9 | 8 - 3 | 6 - 4 | 5 - 4 | 7 - 9 | 6 - 0 | 5 - 0 |
| | 3.125x9.625 | 10 - 4 | 7 - 11 | 6 - 8 | 10 - 3 | 7 - 11 | 6 - 8 | 9 - 7 | 7 - 4 | 6 - 2 | 9 - 0 | 6 - 11 | 5 - 10 |
| | 3.125x11.000 | 11 - 7 | 9 - 0 | 7 - 7 | 11 - 6 | 8 - 11 | 7 - 7 | 10 - 9 | 8 - 4 | 7 - 1 | 10 - 2 | 7 - 10 | 6 - 7 |
| | 3.125x12.375 | 12 - 10 | 10 - 0 | 8 - 5 | 12 - 6 | 9 - 10 | 8 - 5 | 11 - 10 | 9 - 3 | 7 - 10 | 11 - 2 | 8 - 9 | 7 - 5 |
| | 3.125x13.750 | 13 - 10 | 10 - 10 | 9 - 3 | 13 - 5 | 10 - 8 | 9 - 2 | 12 - 8 | 10 - 1 | 8 - 7 | 12 - 0 | 9 - 6 | 8 - 1 |
| | 3.125x15.125 | 14 - 5 | 11 - 8 | 10 - 0 | 14 - 0 | 11 - 4 | 9 - 10 | 13 - 4 | 10 - 8 | 9 - 3 | 12 - 8 | 10 - 2 | 8 - 9 |
| | 3.125x16.500 | 14 - 11 | 12 - 3 | 10 - 7 | 14 - 7 | 11 - 11 | 10 - 4 | 13 - 10 | 11 - 3 | 9 - 9 | 13 - 2 | 10 - 8 | 9 - 3 |
| | 3.125x17.875 | 15 - 4 | 12 - 8 | 11 - 1 | 15 - 0 | 12 - 4 | 10 - 9 | 14 - 3 | 11 - 8 | 10 - 2 | 13 - 8 | 11 - 1 | 9 - 8 |
| | 3.125x19.250 | 15 - 9 | 13 - 0 | 11 - 5 | 15 - 5 | 12 - 8 | 11 - 2 | 14 - 8 | 12 - 0 | 10 - 7 | 14 - 0 | 11 - 6 | 10 - 1 |
| | 3.125x20.625 | 16 - 1 | 13 - 4 | 11 - 9 | 15 - 10 | 13 - 0 | 11 - 6 | 15 - 0 | 12 - 4 | 10 - 11 | 14 - 5 | 11 - 9 | 10 - 5 |
| | 3.125x22.000 | 16 - 6 | 13 - 7 | 12 - 0 | 16 - 2 | 13 - 4 | 11 - 9 | 15 - 4 | 12 - 8 | 11 - 2 | 14 - 8 | 12 - 1 | 10 - 8 |
| | 3.125x23.375 | 16 - 9 | 13 - 10 | 12 - 4 | 16 - 6 | 13 - 7 | 12 - 1 | 15 - 8 | 12 - 11 | 11 - 6 | 15 - 0 | 12 - 5 | 11 - 0 |
| | 3.125x24.750 | 17 - 1 | 14 - 1 | 12 - 7 | 16 - 9 | 13 - 10 | 12 - 4 | 15 - 11 | 13 - 2 | 11 - 9 | 15 - 3 | 12 - 8 | 11 - 3 |
| | 5.125x5.500 | 7 - 8 | 5 - 10 | 4 - 11 | 7 - 8 | 5 - 10 | 4 - 11 | 7 - 2 | 5 - 6 | 4 - 7 | 6 - 8 | 5 - 2 | 4 - 4 |
| | 5.125x6.875 | 9 - 7 | 7 - 4 | 6 - 2 | 9 - 7 | 7 - 4 | 6 - 2 | 8 - 11 | 6 - 10 | 5 - 9 | 8 - 4 | 6 - 5 | 5 - 5 |
| | 5.125x8.250 | 11 - 6 | 8 - 9 | 7 - 4 | 11 - 5 | 8 - 9 | 7 - 4 | 10 - 8 | 8 - 2 | 6 - 11 | 10 - 0 | 7 - 8 | 6 - 6 |
| | 5.125x9.625 | 13 - 5 | 10 - 3 | 8 - 7 | 13 - 4 | 10 - 3 | 8 - 7 | 12 - 5 | 9 - 6 | 8 - 0 | 11 - 8 | 8 - 11 | 7 - 6 |
| | 5.125x11.000 | 15 - 3 | 11 - 8 | 9 - 9 | 15 - 2 | 11 - 8 | 9 - 9 | 14 - 2 | 10 - 10 | 9 - 2 | 13 - 4 | 10 - 2 | 8 - 7 |
| | 5.125x12.375 | 17 - 1 | 13 - 1 | 11 - 0 | 17 - 0 | 13 - 1 | 11 - 0 | 15 - 10 | 12 - 2 | 10 - 3 | 14 - 11 | 11 - 5 | 9 - 8 |
| | 5.125x13.750 | 18 - 10 | 14 - 6 | 12 - 2 | 18 - 9 | 14 - 6 | 12 - 2 | 17 - 6 | 13 - 6 | 11 - 4 | 16 - 6 | 12 - 8 | 10 - 8 |
| | 5.125x15.125 | 20-0† | 15 - 10 | 13 - 4 | 20-0† | 15 - 10 | 13 - 4 | 19 - 1 | 14 - 9 | 12 - 5 | 18 - 0 | 13 - 11 | 11 - 8 |
| | 5.125x16.500 | 20-0† | 17 - 2 | 14 - 6 | 20-0† | 17 - 1 | 14 - 6 | 20-0† | 16 - 0 | 13 - 6 | 19 - 5 | 15 - 1 | 12 - 9 |
| | 5.125x17.875 | 20-0† | 18 - 6 | 15 - 7 | 20-0† | 18 - 4 | 15 - 7 | 20-0† | 17 - 2 | 14 - 7 | 20-0† | 16 - 2 | 13 - 8 |
| | 5.125x19.250 | 20-0† | 19 - 8 | 16 - 8 | 20-0† | 19 - 5 | 16 - 7 | 20-0† | 18 - 3 | 15 - 6 | 20-0† | 17 - 3 | 14 - 7 |
| | 5.125x20.625 | 20-0† | 20-0† | 17 - 9 | 20-0† | 20-0† | 17 - 7 | 20-0† | 19 - 3 | 16 - 5 | 20-0† | 18 - 2 | 15 - 6 |
| | 5.125x22.000 | 20-0† | 20-0† | 18 - 8 | 20-0† | 20-0† | 18 - 5 | 20-0† | 20-0† | 17 - 3 | 20-0† | 19 - 0 | 16 - 4 |
| | 5.125x23.375 | 20-0† | 20-0† | 19 - 6 | 20-0† | 20-0† | 19 - 2 | 20-0† | 20-0† | 18 - 0 | 20-0† | 19 - 9 | 17 - 1 |
| | 5.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 9 | 20-0† | 20-0† | 18 - 8 | 20-0† | 20-0† | 17 - 8 |



† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22C2 Laterally Supported (Raised) Header Spans for Exterior Loadbearing Walls

**Raised Exterior**

(Supporting a Roof, Ceiling, and One Clear Span Floor) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

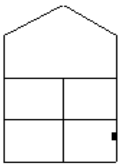
| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof, Ceiling, and One Clear Span Floor | 1-2x6 | 2 - 11 | 2 - 3 | 1 - 11 | 2 - 11 | 2 - 3 | 1 - 11 | 2 - 9 | 2 - 1 | 1 - 9 | 2 - 7 | 2 - 0 | 1 - 8 |
| | 1-2x8 | 3 - 9 | 2 - 10 | 2 - 5 | 3 - 9 | 2 - 10 | 2 - 5 | 3 - 6 | 2 - 8 | 2 - 3 | 3 - 3 | 2 - 6 | 2 - 1 |
| | 1-2x10 | 4 - 5 | 3 - 5 | 2 - 10 | 4 - 5 | 3 - 5 | 2 - 10 | 4 - 1 | 3 - 2 | 2 - 8 | 3 - 10 | 3 - 0 | 2 - 6 |
| | 1-2x12 | 5 - 3 | 4 - 0 | 3 - 4 | 5 - 2 | 4 - 0 | 3 - 4 | 4 - 10 | 3 - 9 | 3 - 1 | 4 - 7 | 3 - 6 | 2 - 11 |
| | 2-2x4 | 2 - 11 | 2 - 3 | 1 - 10 | 2 - 11 | 2 - 3 | 1 - 10 | 2 - 9 | 2 - 1 | 1 - 9 | 2 - 7 | 1 - 11 | 1 - 7 |
| | 2-2x6 | 4 - 4 | 3 - 4 | 2 - 10 | 4 - 4 | 3 - 4 | 2 - 10 | 4 - 1 | 3 - 1 | 2 - 7 | 3 - 10 | 2 - 11 | 2 - 5 |
| | 2-2x8 | 5 - 6 | 4 - 3 | 3 - 7 | 5 - 6 | 4 - 3 | 3 - 7 | 5 - 2 | 3 - 11 | 3 - 4 | 4 - 10 | 3 - 8 | 3 - 1 |
| | 2-2x10 | 6 - 7 | 5 - 0 | 4 - 2 | 6 - 7 | 5 - 0 | 4 - 2 | 6 - 1 | 4 - 8 | 3 - 11 | 5 - 9 | 4 - 5 | 3 - 8 |
| | 2-2x12 | 7 - 9 | 5 - 11 | 4 - 11 | 7 - 9 | 5 - 11 | 4 - 11 | 7 - 2 | 5 - 6 | 4 - 8 | 6 - 9 | 5 - 2 | 4 - 4 |
| | 3-2x8 | 6 - 11 | 5 - 3 | 4 - 5 | 6 - 11 | 5 - 3 | 4 - 5 | 6 - 5 | 4 - 11 | 4 - 2 | 6 - 1 | 4 - 8 | 3 - 11 |
| | 3-2x10 | 8 - 3 | 6 - 3 | 5 - 3 | 8 - 2 | 6 - 3 | 5 - 3 | 7 - 8 | 5 - 10 | 4 - 11 | 7 - 2 | 5 - 6 | 4 - 7 |
| | 3-2x12 | 9 - 8 | 7 - 5 | 6 - 2 | 9 - 8 | 7 - 5 | 6 - 2 | 9 - 0 | 6 - 11 | 5 - 10 | 8 - 6 | 6 - 6 | 5 - 5 |
| | 4-2x8 | 8 - 0 | 6 - 1 | 5 - 1 | 8 - 0 | 6 - 1 | 5 - 1 | 7 - 5 | 5 - 8 | 4 - 9 | 7 - 0 | 5 - 4 | 4 - 6 |
| | 4-2x10 | 9 - 6 | 7 - 3 | 6 - 1 | 9 - 6 | 7 - 3 | 6 - 1 | 8 - 10 | 6 - 9 | 5 - 8 | 8 - 4 | 6 - 4 | 5 - 4 |
| | 4-2x12 | 11 - 2 | 8 - 6 | 7 - 2 | 11 - 2 | 8 - 6 | 7 - 2 | 10 - 5 | 7 - 11 | 6 - 8 | 9 - 9 | 7 - 6 | 6 - 3 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 6 - 0 | 4 - 7 | 3 - 10 | 6 - 0 | 4 - 7 | 3 - 10 | 5 - 7 | 4 - 3 | 3 - 7 | 5 - 3 | 4 - 0 | 3 - 4 |
| | 3.125x6.875 | 7 - 6 | 5 - 9 | 4 - 10 | 7 - 6 | 5 - 9 | 4 - 10 | 7 - 0 | 5 - 4 | 4 - 6 | 6 - 7 | 5 - 0 | 4 - 3 |
| | 3.125x8.250 | 9 - 0 | 6 - 10 | 5 - 9 | 9 - 0 | 6 - 10 | 5 - 9 | 8 - 5 | 6 - 5 | 5 - 5 | 7 - 11 | 6 - 0 | 5 - 1 |
| | 3.125x9.625 | 10 - 6 | 8 - 0 | 6 - 9 | 10 - 6 | 8 - 0 | 6 - 9 | 9 - 9 | 7 - 6 | 6 - 3 | 9 - 2 | 7 - 0 | 5 - 11 |
| | 3.125x11.000 | 12 - 0 | 9 - 2 | 7 - 8 | 12 - 0 | 9 - 2 | 7 - 8 | 11 - 2 | 8 - 7 | 7 - 2 | 10 - 6 | 8 - 0 | 6 - 9 |
| | 3.125x12.375 | 13 - 6 | 10 - 4 | 8 - 8 | 13 - 6 | 10 - 4 | 8 - 8 | 12 - 7 | 9 - 7 | 8 - 1 | 11 - 10 | 9 - 0 | 7 - 7 |
| | 3.125x13.750 | 15 - 0 | 11 - 5 | 9 - 7 | 15 - 0 | 11 - 5 | 9 - 7 | 14 - 0 | 10 - 8 | 9 - 0 | 13 - 2 | 10 - 0 | 8 - 5 |
| | 3.125x15.125 | 16 - 6 | 12 - 7 | 10 - 7 | 16 - 6 | 12 - 7 | 10 - 7 | 15 - 4 | 11 - 9 | 9 - 11 | 14 - 6 | 11 - 1 | 9 - 3 |
| | 3.125x16.500 | 18 - 0 | 13 - 9 | 11 - 6 | 18 - 0 | 13 - 9 | 11 - 6 | 16 - 9 | 12 - 10 | 10 - 9 | 15 - 9 | 12 - 1 | 10 - 1 |
| | 3.125x17.875 | 19 - 7 | 14 - 11 | 12 - 6 | 19 - 6 | 14 - 11 | 12 - 6 | 18 - 2 | 13 - 11 | 11 - 8 | 17 - 1 | 13 - 1 | 11 - 0 |
| | 3.125x19.250 | 20-0† | 16 - 0 | 13 - 5 | 20-0† | 16 - 0 | 13 - 5 | 19 - 7 | 15 - 0 | 12 - 7 | 18 - 5 | 14 - 1 | 11 - 10 |
| | 3.125x20.625 | 20-0† | 17 - 2 | 14 - 5 | 20-0† | 17 - 2 | 14 - 5 | 20-0† | 16 - 0 | 13 - 6 | 19 - 9 | 15 - 1 | 12 - 8 |
| | 3.125x22.000 | 20-0† | 18 - 4 | 15 - 5 | 20-0† | 18 - 4 | 15 - 5 | 20-0† | 17 - 1 | 14 - 4 | 20-0† | 16 - 1 | 13 - 6 |
| | 3.125x23.375 | 20-0† | 19 - 5 | 16 - 4 | 20-0† | 19 - 5 | 16 - 4 | 20-0† | 18 - 2 | 15 - 3 | 20-0† | 17 - 1 | 14 - 4 |
| | 3.125x24.750 | 20-0† | 20-0† | 17 - 3 | 20-0† | 20-0† | 17 - 3 | 20-0† | 19 - 1 | 16 - 2 | 20-0† | 18 - 0 | 15 - 2 |
| | 5.125x5.500 | 7 - 8 | 5 - 10 | 4 - 11 | 7 - 8 | 5 - 10 | 4 - 11 | 7 - 2 | 5 - 6 | 4 - 7 | 6 - 8 | 5 - 2 | 4 - 4 |
| | 5.125x6.875 | 9 - 8 | 7 - 4 | 6 - 2 | 9 - 7 | 7 - 4 | 6 - 2 | 8 - 11 | 6 - 10 | 5 - 9 | 8 - 4 | 6 - 5 | 5 - 5 |
| | 5.125x8.250 | 11 - 7 | 8 - 10 | 7 - 5 | 11 - 6 | 8 - 10 | 7 - 5 | 10 - 9 | 8 - 3 | 6 - 11 | 10 - 0 | 7 - 9 | 6 - 6 |
| | 5.125x9.625 | 13 - 6 | 10 - 3 | 8 - 7 | 13 - 5 | 10 - 3 | 8 - 7 | 12 - 6 | 9 - 7 | 8 - 1 | 11 - 8 | 9 - 0 | 7 - 7 |
| | 5.125x11.000 | 15 - 5 | 11 - 9 | 9 - 10 | 15 - 4 | 11 - 9 | 9 - 10 | 14 - 4 | 10 - 11 | 9 - 2 | 13 - 4 | 10 - 3 | 8 - 8 |
| | 5.125x12.375 | 17 - 4 | 13 - 2 | 11 - 1 | 17 - 3 | 13 - 2 | 11 - 1 | 16 - 1 | 12 - 4 | 10 - 4 | 15 - 0 | 11 - 7 | 9 - 9 |
| | 5.125x13.750 | 19 - 2 | 14 - 8 | 12 - 4 | 19 - 2 | 14 - 8 | 12 - 4 | 17 - 10 | 13 - 8 | 11 - 6 | 16 - 8 | 12 - 10 | 10 - 10 |
| | 5.125x15.125 | 20-0† | 16 - 2 | 13 - 6 | 20-0† | 16 - 2 | 13 - 6 | 19 - 6 | 15 - 1 | 12 - 8 | 18 - 4 | 14 - 2 | 11 - 11 |
| | 5.125x16.500 | 20-0† | 17 - 6 | 14 - 9 | 20-0† | 17 - 6 | 14 - 9 | 20-0† | 16 - 4 | 13 - 10 | 19 - 11 | 15 - 5 | 13 - 0 |
| | 5.125x17.875 | 20-0† | 18 - 10 | 15 - 11 | 20-0† | 18 - 10 | 15 - 11 | 20-0† | 17 - 7 | 14 - 11 | 20-0† | 16 - 7 | 14 - 0 |
| | 5.125x19.250 | 20-0† | 20-0† | 17 - 0 | 20-0† | 20-0† | 17 - 0 | 20-0† | 18 - 10 | 15 - 11 | 20-0† | 17 - 9 | 15 - 0 |
| | 5.125x20.625 | 20-0† | 20-0† | 18 - 1 | 20-0† | 20-0† | 18 - 1 | 20-0† | 20-0† | 17 - 0 | 20-0† | 18 - 10 | 16 - 0 |
| | 5.125x22.000 | 20-0† | 20-0† | 19 - 2 | 20-0† | 20-0† | 19 - 2 | 20-0† | 20-0† | 18 - 0 | 20-0† | 20 - 0 | 16 - 11 |
| | 5.125x23.375 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 0 | 20-0† | 20-0† | 17 - 11 |
| | 5.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 10 |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22D1 Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls

**Dropped Exterior**

(Supporting a Roof, Ceiling, and Two Center Bearing Floors) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| **Headers Supporting** | **Size** | **Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5]** | | | | | | | | | | | |
| **Roof, Ceiling, and Two Center Bearing Floors** | **1-2x6** | 2 - 8 | 2 - 1 | 1 - 10 | 2 - 8 | 2 - 1 | 1 - 10 | 2 - 6 | 2 - 0 | 1 - 8 | 2 - 5 | 1 - 11 | 1 - 7 |
| | **1-2x8** | 3 - 4 | 2 - 8 | 2 - 3 | 3 - 4 | 2 - 8 | 2 - 3 | 3 - 2 | 2 - 6 | 2 - 2 | 3 - 0 | 2 - 4 | 2 - 0 |
| | **1-2x10** | 3 - 11 | 3 - 2 | 2 - 8 | 3 - 11 | 3 - 2 | 2 - 8 | 3 - 8 | 2 - 11 | 2 - 6 | 3 - 6 | 2 - 9 | 2 - 5 |
| | **1-2x12** | 4 - 6 | 3 - 8 | 3 - 2 | 4 - 6 | 3 - 8 | 3 - 2 | 4 - 3 | 3 - 5 | 2 - 11 | 4 - 1 | 3 - 3 | 2 - 9 |
| | **2-2x4** | 2 - 8 | 2 - 1 | 1 - 9 | 2 - 8 | 2 - 1 | 1 - 9 | 2 - 6 | 2 - 0 | 1 - 8 | 2 - 4 | 1 - 10 | 1 - 7 |
| | **2-2x6** | 3 - 11 | 3 - 1 | 2 - 8 | 3 - 11 | 3 - 1 | 2 - 8 | 3 - 8 | 2 - 11 | 2 - 6 | 3 - 6 | 2 - 9 | 2 - 4 |
|  | **2-2x8** | 4 - 10 | 3 - 11 | 3 - 4 | 4 - 10 | 3 - 11 | 3 - 4 | 4 - 7 | 3 - 8 | 3 - 2 | 4 - 4 | 3 - 5 | 2 - 11 |
| | **2-2x10** | 5 - 7 | 4 - 6 | 3 - 11 | 5 - 6 | 4 - 6 | 3 - 11 | 5 - 2 | 4 - 3 | 3 - 8 | 5 - 0 | 4 - 0 | 3 - 6 |
| | **2-2x12** | 6 - 2 | 5 - 1 | 4 - 6 | 6 - 0 | 5 - 0 | 4 - 5 | 5 - 9 | 4 - 9 | 4 - 2 | 5 - 6 | 4 - 7 | 4 - 0 |
| | **3-2x8** | 5 - 11 | 4 - 9 | 4 - 1 | 5 - 10 | 4 - 9 | 4 - 1 | 5 - 6 | 4 - 6 | 3 - 10 | 5 - 3 | 4 - 3 | 3 - 8 |
| | **3-2x10** | 6 - 8 | 5 - 6 | 4 - 9 | 6 - 6 | 5 - 4 | 4 - 9 | 6 - 2 | 5 - 1 | 4 - 5 | 5 - 11 | 4 - 10 | 4 - 3 |
| | **3-2x12** | 7 - 2 | 6 - 0 | 5 - 4 | 7 - 0 | 5 - 11 | 5 - 3 | 6 - 8 | 5 - 7 | 5 - 0 | 6 - 5 | 5 - 5 | 4 - 9 |
| | **4-2x8** | 6 - 8 | 5 - 5 | 4 - 9 | 6 - 7 | 5 - 5 | 4 - 8 | 6 - 3 | 5 - 1 | 4 - 5 | 6 - 0 | 4 - 10 | 4 - 2 |
| | **4-2x10** | 7 - 5 | 6 - 2 | 5 - 5 | 7 - 3 | 6 - 0 | 5 - 4 | 6 - 11 | 5 - 9 | 5 - 0 | 6 - 8 | 5 - 6 | 4 - 9 |
| | **4-2x12** | 7 - 11 | 6 - 8 | 6 - 0 | 7 - 9 | 6 - 6 | 5 - 10 | 7 - 5 | 6 - 3 | 5 - 6 | 7 - 2 | 6 - 0 | 5 - 4 |
| | **Size** | **Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5]** | | | | | | | | | | | |
| | **3.125x5.500** | 5 - 5 | 4 - 4 | 3 - 8 | 5 - 5 | 4 - 4 | 3 - 8 | 5 - 2 | 4 - 1 | 3 - 6 | 4 - 11 | 3 - 10 | 3 - 3 |
| | **3.125x6.875** | 6 - 9 | 5 - 5 | 4 - 7 | 6 - 9 | 5 - 5 | 4 - 7 | 6 - 5 | 5 - 1 | 4 - 4 | 6 - 1 | 4 - 10 | 4 - 1 |
| | **3.125x8.250** | 8 - 1 | 6 - 5 | 5 - 6 | 8 - 1 | 6 - 5 | 5 - 6 | 7 - 8 | 6 - 1 | 5 - 2 | 7 - 4 | 5 - 9 | 4 - 11 |
| | **3.125x9.625** | 9 - 5 | 7 - 6 | 6 - 5 | 9 - 5 | 7 - 6 | 6 - 5 | 8 - 11 | 7 - 1 | 6 - 0 | 8 - 5 | 6 - 8 | 5 - 8 |
| | **3.125x11.000** | 10 - 8 | 8 - 6 | 7 - 3 | 10 - 7 | 8 - 6 | 7 - 3 | 10 - 0 | 8 - 0 | 6 - 10 | 9 - 7 | 7 - 7 | 6 - 5 |
| | **3.125x12.375** | 11 - 9 | 9 - 5 | 8 - 1 | 11 - 8 | 9 - 5 | 8 - 1 | 11 - 1 | 8 - 10 | 7 - 7 | 10 - 6 | 8 - 5 | 7 - 2 |
| | **3.125x13.750** | 12 - 9 | 10 - 4 | 8 - 11 | 12 - 6 | 10 - 3 | 8 - 10 | 11 - 11 | 9 - 8 | 8 - 4 | 11 - 4 | 9 - 2 | 7 - 11 |
| | **3.125x15.125** | 13 - 6 | 11 - 1 | 9 - 7 | 13 - 2 | 10 - 11 | 9 - 6 | 12 - 7 | 10 - 4 | 9 - 0 | 12 - 0 | 9 - 10 | 8 - 6 |
| | **3.125x16.500** | 14 - 0 | 11 - 9 | 10 - 3 | 13 - 8 | 11 - 5 | 10 - 1 | 13 - 1 | 10 - 10 | 9 - 6 | 12 - 7 | 10 - 4 | 9 - 1 |
| | **3.125x17.875** | 14 - 5 | 12 - 2 | 10 - 9 | 14 - 2 | 11 - 10 | 10 - 6 | 13 - 6 | 11 - 3 | 9 - 11 | 13 - 0 | 10 - 9 | 9 - 6 |
| | **3.125x19.250** | 14 - 10 | 12 - 6 | 11 - 1 | 14 - 6 | 12 - 3 | 10 - 10 | 13 - 11 | 11 - 8 | 10 - 4 | 13 - 4 | 11 - 2 | 9 - 11 |
| | **3.125x20.625** | 15 - 2 | 12 - 9 | 11 - 5 | 14 - 11 | 12 - 6 | 11 - 2 | 14 - 3 | 11 - 11 | 10 - 8 | 13 - 8 | 11 - 6 | 10 - 2 |
| | **3.125x22.000** | 15 - 6 | 13 - 1 | 11 - 8 | 15 - 3 | 12 - 10 | 11 - 6 | 14 - 7 | 12 - 3 | 10 - 11 | 14 - 0 | 11 - 9 | 10 - 6 |
| | **3.125x23.375** | 15 - 9 | 13 - 4 | 12 - 0 | 15 - 6 | 13 - 1 | 11 - 9 | 14 - 10 | 12 - 7 | 11 - 3 | 14 - 4 | 12 - 1 | 10 - 9 |
| | **3.125x24.750** | 16 - 1 | 13 - 7 | 12 - 3 | 15 - 10 | 13 - 5 | 12 - 0 | 15 - 2 | 12 - 10 | 11 - 6 | 14 - 7 | 12 - 4 | 11 - 0 |
| | **5.125x5.500** | 7 - 0 | 5 - 6 | 4 - 9 | 7 - 0 | 5 - 6 | 4 - 9 | 6 - 8 | 5 - 3 | 4 - 5 | 6 - 4 | 4 - 11 | 4 - 2 |
| | **5.125x6.875** | 8 - 9 | 6 - 11 | 5 - 11 | 8 - 9 | 6 - 11 | 5 - 11 | 8 - 4 | 6 - 6 | 5 - 7 | 7 - 10 | 6 - 2 | 5 - 3 |
| | **5.125x8.250** | 10 - 6 | 8 - 3 | 7 - 1 | 10 - 6 | 8 - 3 | 7 - 1 | 9 - 11 | 7 - 10 | 6 - 8 | 9 - 5 | 7 - 5 | 6 - 3 |
| | **5.125x9.625** | 12 - 2 | 9 - 8 | 8 - 3 | 12 - 2 | 9 - 8 | 8 - 3 | 11 - 7 | 9 - 1 | 7 - 9 | 11 - 0 | 8 - 7 | 7 - 4 |
| | **5.125x11.000** | 13 - 11 | 11 - 0 | 9 - 5 | 13 - 11 | 11 - 0 | 9 - 5 | 13 - 2 | 10 - 5 | 8 - 10 | 12 - 6 | 9 - 10 | 8 - 4 |
| | **5.125x12.375** | 15 - 7 | 12 - 4 | 10 - 7 | 15 - 7 | 12 - 4 | 10 - 7 | 14 - 9 | 11 - 8 | 9 - 11 | 14 - 0 | 11 - 0 | 9 - 5 |
| | **5.125x13.750** | 17 - 3 | 13 - 8 | 11 - 8 | 17 - 3 | 13 - 8 | 11 - 8 | 16 - 4 | 12 - 11 | 11 - 0 | 15 - 6 | 12 - 2 | 10 - 5 |
| | **5.125x15.125** | 18 - 10 | 15 - 0 | 12 - 10 | 18 - 10 | 15 - 0 | 12 - 10 | 17 - 10 | 14 - 2 | 12 - 1 | 16 - 11 | 13 - 4 | 11 - 5 |
| | **5.125x16.500** | 20-0† | 16 - 3 | 13 - 11 | 20-0† | 16 - 3 | 13 - 11 | 19 - 3 | 15 - 4 | 13 - 1 | 18 - 4 | 14 - 6 | 12 - 4 |
| | **5.125x17.875** | 20-0† | 17 - 6 | 15 - 0 | 20-0† | 17 - 6 | 15 - 0 | 20-0† | 16 - 5 | 14 - 1 | 19 - 7 | 15 - 7 | 13 - 4 |
| | **5.125x19.250** | 20-0† | 18 - 8 | 16 - 1 | 20-0† | 18 - 7 | 16 - 1 | 20-0† | 17 - 6 | 15 - 1 | 20-0† | 16 - 7 | 14 - 3 |
| | **5.125x20.625** | 20-0† | 19 - 9 | 17 - 1 | 20-0† | 19 - 7 | 17 - 0 | 20-0† | 18 - 6 | 16 - 0 | 20-0† | 17 - 7 | 15 - 1 |
| | **5.125x22.000** | 20-0† | 20-0† | 18 - 0 | 20-0† | 20-0† | 17 - 10 | 20-0† | 19 - 4 | 16 - 10 | 20-0† | 18 - 5 | 15 - 11 |
| | **5.125x23.375** | 20-0† | 20-0† | 18 - 10 | 20-0† | 20-0† | 18 - 7 | 20-0† | 20-0† | 17 - 6 | 20-0† | 19 - 2 | 16 - 8 |
| | **5.125x24.750** | 20-0† | 20-0† | 19 - 7 | 20-0† | 20-0† | 19 - 2 | 20-0† | 20-0† | 18 - 2 | 20-0† | 19 - 9 | 17 - 3 |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22D2 Laterally Supported (Raised) Header Spans for Exterior Loadbearing Walls

**Raised Exterior**

(Supporting a Roof, Ceiling, and Two Center Bearing Floors) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof, Ceiling, and Two Center Bearing Floors | 1-2x6 | 2 - 8 | 2 - 1 | 1 - 10 | 2 - 8 | 2 - 1 | 1 - 10 | 2 - 7 | 2 - 0 | 1 - 8 | 2 - 5 | 1 - 11 | 1 - 7 |
| | 1-2x8 | 3 - 5 | 2 - 8 | 2 - 4 | 3 - 5 | 2 - 8 | 2 - 4 | 3 - 3 | 2 - 6 | 2 - 2 | 3 - 1 | 2 - 5 | 2 - 0 |
| | 1-2x10 | 4 - 0 | 3 - 2 | 2 - 9 | 4 - 0 | 3 - 2 | 2 - 9 | 3 - 10 | 3 - 0 | 2 - 7 | 3 - 8 | 2 - 10 | 2 - 5 |
| | 1-2x12 | 4 - 9 | 3 - 9 | 3 - 2 | 4 - 9 | 3 - 9 | 3 - 2 | 4 - 6 | 3 - 7 | 3 - 0 | 4 - 3 | 3 - 4 | 2 - 10 |
| | 2-2x4 | 2 - 8 | 2 - 1 | 1 - 9 | 2 - 8 | 2 - 1 | 1 - 9 | 2 - 6 | 2 - 0 | 1 - 8 | 2 - 5 | 1 - 10 | 1 - 7 |
| | 2-2x6 | 4 - 0 | 3 - 2 | 2 - 8 | 4 - 0 | 3 - 2 | 2 - 8 | 3 - 9 | 3 - 0 | 2 - 6 | 3 - 7 | 2 - 10 | 2 - 5 |
| | 2-2x8 | 5 - 0 | 4 - 0 | 3 - 5 | 5 - 0 | 4 - 0 | 3 - 5 | 4 - 9 | 3 - 9 | 3 - 2 | 4 - 6 | 3 - 7 | 3 - 0 |
| | 2-2x10 | 6 - 0 | 4 - 9 | 4 - 0 | 6 - 0 | 4 - 9 | 4 - 0 | 5 - 8 | 4 - 6 | 3 - 10 | 5 - 5 | 4 - 3 | 3 - 7 |
| | 2-2x12 | 7 - 0 | 5 - 7 | 4 - 9 | 7 - 0 | 5 - 7 | 4 - 9 | 6 - 8 | 5 - 3 | 4 - 6 | 6 - 4 | 5 - 0 | 4 - 3 |
| | 3-2x8 | 6 - 4 | 5 - 0 | 4 - 3 | 6 - 4 | 5 - 0 | 4 - 3 | 6 - 0 | 4 - 9 | 4 - 0 | 5 - 8 | 4 - 5 | 3 - 9 |
| | 3-2x10 | 7 - 6 | 5 - 11 | 5 - 1 | 7 - 6 | 5 - 11 | 5 - 1 | 7 - 1 | 5 - 7 | 4 - 9 | 6 - 9 | 5 - 3 | 4 - 6 |
| | 3-2x12 | 8 - 10 | 7 - 0 | 5 - 11 | 8 - 10 | 7 - 0 | 5 - 11 | 8 - 5 | 6 - 7 | 5 - 7 | 7 - 11 | 6 - 3 | 5 - 3 |
| | 4-2x8 | 7 - 3 | 5 - 9 | 4 - 11 | 7 - 3 | 5 - 9 | 4 - 11 | 6 - 11 | 5 - 5 | 4 - 8 | 6 - 7 | 5 - 2 | 4 - 4 |
| | 4-2x10 | 8 - 8 | 6 - 10 | 5 - 10 | 8 - 8 | 6 - 10 | 5 - 10 | 8 - 3 | 6 - 6 | 5 - 6 | 7 - 9 | 6 - 1 | 5 - 2 |
| | 4-2x12 | 10 - 2 | 8 - 1 | 6 - 10 | 10 - 2 | 8 - 1 | 6 - 10 | 9 - 8 | 7 - 7 | 6 - 6 | 9 - 2 | 7 - 2 | 6 - 1 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 5 - 6 | 4 - 4 | 3 - 8 | 5 - 6 | 4 - 4 | 3 - 8 | 5 - 2 | 4 - 1 | 3 - 6 | 4 - 11 | 3 - 10 | 3 - 3 |
| | 3.125x6.875 | 6 - 10 | 5 - 5 | 4 - 7 | 6 - 10 | 5 - 5 | 4 - 7 | 6 - 6 | 5 - 1 | 4 - 4 | 6 - 2 | 4 - 10 | 4 - 1 |
| | 3.125x8.250 | 8 - 2 | 6 - 6 | 5 - 6 | 8 - 2 | 6 - 6 | 5 - 6 | 7 - 10 | 6 - 2 | 5 - 3 | 7 - 5 | 5 - 10 | 4 - 11 |
| | 3.125x9.625 | 9 - 7 | 7 - 7 | 6 - 6 | 9 - 7 | 7 - 7 | 6 - 6 | 9 - 1 | 7 - 2 | 6 - 1 | 8 - 7 | 6 - 9 | 5 - 9 |
| | 3.125x11.000 | 10 - 11 | 8 - 8 | 7 - 5 | 10 - 11 | 8 - 8 | 7 - 5 | 10 - 5 | 8 - 2 | 7 - 0 | 9 - 10 | 7 - 9 | 6 - 7 |
| | 3.125x12.375 | 12 - 4 | 9 - 9 | 8 - 4 | 12 - 4 | 9 - 9 | 8 - 4 | 11 - 8 | 9 - 2 | 7 - 10 | 11 - 1 | 8 - 8 | 7 - 5 |
| | 3.125x13.750 | 13 - 8 | 10 - 10 | 9 - 3 | 13 - 8 | 10 - 10 | 9 - 3 | 13 - 0 | 10 - 3 | 8 - 8 | 12 - 4 | 9 - 8 | 8 - 2 |
| | 3.125x15.125 | 15 - 1 | 11 - 11 | 10 - 2 | 15 - 1 | 11 - 11 | 10 - 2 | 14 - 4 | 11 - 3 | 9 - 7 | 13 - 7 | 10 - 7 | 9 - 0 |
| | 3.125x16.500 | 16 - 5 | 13 - 0 | 11 - 1 | 16 - 5 | 13 - 0 | 11 - 1 | 15 - 7 | 12 - 3 | 10 - 5 | 14 - 9 | 11 - 7 | 9 - 10 |
| | 3.125x17.875 | 17 - 9 | 14 - 1 | 12 - 0 | 17 - 9 | 14 - 1 | 12 - 0 | 16 - 11 | 13 - 4 | 11 - 4 | 16 - 0 | 12 - 7 | 10 - 8 |
| | 3.125x19.250 | 19 - 2 | 15 - 2 | 12 - 11 | 19 - 2 | 15 - 2 | 12 - 11 | 18 - 2 | 14 - 4 | 12 - 2 | 17 - 3 | 13 - 6 | 11 - 6 |
| | 3.125x20.625 | 20-0† | 16 - 3 | 13 - 10 | 20-0† | 16 - 3 | 13 - 10 | 19 - 6 | 15 - 4 | 13 - 1 | 18 - 6 | 14 - 6 | 12 - 4 |
| | 3.125x22.000 | 20-0† | 17 - 4 | 14 - 9 | 20-0† | 17 - 4 | 14 - 9 | 20-0† | 16 - 4 | 13 - 11 | 19 - 8 | 15 - 5 | 13 - 1 |
| | 3.125x23.375 | 20-0† | 18 - 4 | 15 - 8 | 20-0† | 18 - 4 | 15 - 8 | 20-0† | 17 - 5 | 14 - 10 | 20-0† | 16 - 5 | 13 - 11 |
| | 3.125x24.750 | 20-0† | 19 - 4 | 16 - 7 | 20-0† | 19 - 4 | 16 - 7 | 20-0† | 18 - 4 | 15 - 8 | 20-0† | 17 - 4 | 14 - 9 |
| | 5.125x5.500 | 7 - 0 | 5 - 6 | 4 - 9 | 7 - 0 | 5 - 6 | 4 - 9 | 6 - 8 | 5 - 3 | 4 - 6 | 6 - 4 | 4 - 11 | 4 - 2 |
| | 5.125x6.875 | 8 - 9 | 6 - 11 | 5 - 11 | 8 - 9 | 6 - 11 | 5 - 11 | 8 - 4 | 6 - 7 | 5 - 7 | 7 - 11 | 6 - 2 | 5 - 3 |
| | 5.125x8.250 | 10 - 6 | 8 - 4 | 7 - 1 | 10 - 6 | 8 - 4 | 7 - 1 | 10 - 0 | 7 - 10 | 6 - 8 | 9 - 6 | 7 - 5 | 6 - 4 |
| | 5.125x9.625 | 12 - 3 | 9 - 8 | 8 - 3 | 12 - 3 | 9 - 8 | 8 - 3 | 11 - 8 | 9 - 2 | 7 - 10 | 11 - 1 | 8 - 8 | 7 - 4 |
| | 5.125x11.000 | 14 - 0 | 11 - 1 | 9 - 5 | 14 - 0 | 11 - 1 | 9 - 5 | 13 - 4 | 10 - 6 | 8 - 11 | 12 - 7 | 9 - 11 | 8 - 5 |
| | 5.125x12.375 | 15 - 9 | 12 - 6 | 10 - 8 | 15 - 9 | 12 - 6 | 10 - 8 | 15 - 0 | 11 - 9 | 10 - 0 | 14 - 2 | 11 - 2 | 9 - 5 |
| | 5.125x13.750 | 17 - 6 | 13 - 10 | 11 - 10 | 17 - 6 | 13 - 10 | 11 - 10 | 16 - 8 | 13 - 1 | 11 - 2 | 15 - 9 | 12 - 4 | 10 - 6 |
| | 5.125x15.125 | 19 - 2 | 15 - 3 | 13 - 0 | 19 - 2 | 15 - 3 | 13 - 0 | 18 - 3 | 14 - 5 | 12 - 3 | 17 - 4 | 13 - 7 | 11 - 7 |
| | 5.125x16.500 | 20-0† | 16 - 7 | 14 - 2 | 20-0† | 16 - 7 | 14 - 2 | 19 - 9 | 15 - 8 | 13 - 5 | 18 - 9 | 14 - 10 | 12 - 7 |
| | 5.125x17.875 | 20-0† | 17 - 10 | 15 - 4 | 20-0† | 17 - 10 | 15 - 4 | 20-0† | 16 - 10 | 14 - 6 | 20-0† | 16 - 0 | 13 - 8 |
| | 5.125x19.250 | 20-0† | 19 - 0 | 16 - 4 | 20-0† | 19 - 0 | 16 - 4 | 20-0† | 18 - 0 | 15 - 6 | 20-0† | 17 - 1 | 14 - 7 |
| | 5.125x20.625 | 20-0† | 20-0† | 17 - 5 | 20-0† | 20-0† | 17 - 5 | 20-0† | 19 - 2 | 16 - 6 | 20-0† | 18 - 2 | 15 - 7 |
| | 5.125x22.000 | 20-0† | 20-0† | 18 - 6 | 20-0† | 20-0† | 18 - 6 | 20-0† | 20-0† | 17 - 5 | 20-0† | 19 - 3 | 16 - 6 |
| | 5.125x23.375 | 20-0† | 20-0† | 19 - 6 | 20-0† | 20-0† | 19 - 6 | 20-0† | 20-0† | 18 - 5 | 20-0† | 20-0† | 17 - 5 |
| | 5.125x24.750 | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 5 | 20-0† | 20-0† | 18 - 4 |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22E1 Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls

**Dropped Exterior**

(Supporting a Roof, Ceiling, and Two Clear Span Floors) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof, Ceiling, and Two Clear Span Floors | 1-2x6 | 2 - 3 | 1 - 8 | 1 - 5 | 2 - 3 | 1 - 8 | 1 - 5 | 2 - 3 | 1 - 8 | 1 - 5 | 2 - 2 | 1 - 8 | 1 - 5 |
| | 1-2x8 | 2 - 10 | 2 - 2 | 1 - 10 | 2 - 10 | 2 - 2 | 1 - 10 | 2 - 10 | 2 - 2 | 1 - 10 | 2 - 8 | 2 - 1 | 1 - 9 |
| | 1-2x10 | 3 - 4 | 2 - 6 | 2 - 2 | 3 - 4 | 2 - 6 | 2 - 2 | 3 - 4 | 2 - 6 | 2 - 2 | 3 - 2 | 2 - 6 | 2 - 1 |
| | 1-2x12 | 3 - 10 | 3 - 0 | 2 - 6 | 3 - 10 | 3 - 0 | 2 - 6 | 3 - 10 | 3 - 0 | 2 - 6 | 3 - 8 | 2 - 10 | 2 - 5 |
| | 2-2x4 | 2 - 3 | 1 - 8 | 1 - 4 | 2 - 3 | 1 - 8 | 1 - 4 | 2 - 3 | 1 - 8 | 1 - 4 | 2 - 2 | 1 - 7 | 1 - 4 |
| | 2-2x6 | 3 - 3 | 2 - 6 | 2 - 1 | 3 - 3 | 2 - 6 | 2 - 1 | 3 - 3 | 2 - 6 | 2 - 1 | 3 - 2 | 2 - 5 | 2 - 1 |
| | 2-2x8 | 4 - 1 | 3 - 2 | 2 - 8 | 4 - 1 | 3 - 2 | 2 - 8 | 4 - 1 | 3 - 2 | 2 - 8 | 3 - 11 | 3 - 1 | 2 - 7 |
| | 2-2x10 | 4 - 9 | 3 - 8 | 3 - 2 | 4 - 9 | 3 - 8 | 3 - 2 | 4 - 8 | 3 - 8 | 3 - 2 | 4 - 6 | 3 - 7 | 3 - 0 |
| | 2-2x12 | 5 - 4 | 4 - 3 | 3 - 8 | 5 - 4 | 4 - 3 | 3 - 8 | 5 - 3 | 4 - 3 | 3 - 8 | 5 - 1 | 4 - 1 | 3 - 6 |
| | 3-2x8 | 5 - 0 | 3 - 11 | 3 - 4 | 5 - 0 | 3 - 11 | 3 - 4 | 5 - 0 | 3 - 11 | 3 - 4 | 4 - 10 | 3 - 9 | 3 - 2 |
| | 3-2x10 | 5 - 9 | 4 - 7 | 3 - 10 | 5 - 9 | 4 - 7 | 3 - 10 | 5 - 7 | 4 - 6 | 3 - 10 | 5 - 5 | 4 - 4 | 3 - 9 |
| | 3-2x12 | 6 - 4 | 5 - 2 | 4 - 5 | 6 - 4 | 5 - 2 | 4 - 5 | 6 - 2 | 5 - 0 | 4 - 5 | 5 - 11 | 4 - 10 | 4 - 3 |
| | 4-2x8 | 5 - 9 | 4 - 6 | 3 - 10 | 5 - 9 | 4 - 6 | 3 - 10 | 5 - 8 | 4 - 6 | 3 - 10 | 5 - 5 | 4 - 4 | 3 - 8 |
| | 4-2x10 | 6 - 6 | 5 - 2 | 4 - 5 | 6 - 6 | 5 - 2 | 4 - 5 | 6 - 4 | 5 - 1 | 4 - 5 | 6 - 1 | 4 - 11 | 4 - 3 |
| | 4-2x12 | 7 - 1 | 5 - 9 | 5 - 0 | 7 - 1 | 5 - 9 | 5 - 0 | 6 - 10 | 5 - 7 | 4 - 11 | 6 - 7 | 5 - 5 | 4 - 9 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 4 - 7 | 3 - 6 | 2 - 11 | 4 - 7 | 3 - 6 | 2 - 11 | 4 - 7 | 3 - 6 | 2 - 11 | 4 - 5 | 3 - 5 | 2 - 9 |
| | 3.125x6.875 | 5 - 8 | 4 - 4 | 3 - 7 | 5 - 8 | 4 - 4 | 3 - 7 | 5 - 8 | 4 - 4 | 3 - 7 | 5 - 6 | 4 - 3 | 3 - 6 |
| | 3.125x8.250 | 6 - 10 | 5 - 2 | 4 - 4 | 6 - 10 | 5 - 2 | 4 - 4 | 6 - 10 | 5 - 2 | 4 - 4 | 6 - 7 | 5 - 1 | 4 - 2 |
| | 3.125x9.625 | 7 - 11 | 6 - 1 | 5 - 1 | 7 - 11 | 6 - 1 | 5 - 1 | 7 - 11 | 6 - 1 | 5 - 1 | 7 - 7 | 5 - 10 | 4 - 10 |
| | 3.125x11.000 | 8 - 11 | 6 - 11 | 5 - 9 | 8 - 11 | 6 - 11 | 5 - 9 | 8 - 11 | 6 - 11 | 5 - 9 | 8 - 7 | 6 - 8 | 5 - 7 |
| | 3.125x12.375 | 9 - 11 | 7 - 8 | 6 - 6 | 9 - 11 | 7 - 8 | 6 - 6 | 9 - 11 | 7 - 8 | 6 - 6 | 9 - 6 | 7 - 5 | 6 - 3 |
| | 3.125x13.750 | 10 - 10 | 8 - 5 | 7 - 2 | 10 - 10 | 8 - 5 | 7 - 2 | 10 - 9 | 8 - 5 | 7 - 2 | 10 - 4 | 8 - 2 | 6 - 11 |
| | 3.125x15.125 | 11 - 8 | 9 - 2 | 7 - 9 | 11 - 8 | 9 - 2 | 7 - 9 | 11 - 5 | 9 - 1 | 7 - 9 | 11 - 0 | 8 - 9 | 7 - 6 |
| | 3.125x16.500 | 12 - 3 | 9 - 9 | 8 - 4 | 12 - 3 | 9 - 9 | 8 - 4 | 11 - 11 | 9 - 8 | 8 - 4 | 11 - 7 | 9 - 4 | 8 - 1 |
| | 3.125x17.875 | 12 - 9 | 10 - 3 | 8 - 11 | 12 - 9 | 10 - 3 | 8 - 11 | 12 - 4 | 10 - 1 | 8 - 10 | 12 - 0 | 9 - 9 | 8 - 6 |
| | 3.125x19.250 | 13 - 2 | 10 - 9 | 9 - 4 | 13 - 2 | 10 - 9 | 9 - 4 | 12 - 9 | 10 - 6 | 9 - 2 | 12 - 4 | 10 - 2 | 8 - 11 |
| | 3.125x20.625 | 13 - 7 | 11 - 1 | 9 - 9 | 13 - 6 | 11 - 1 | 9 - 9 | 13 - 1 | 10 - 9 | 9 - 6 | 12 - 8 | 10 - 5 | 9 - 3 |
| | 3.125x22.000 | 13 - 11 | 11 - 5 | 10 - 1 | 13 - 10 | 11 - 5 | 10 - 1 | 13 - 4 | 11 - 1 | 9 - 10 | 12 - 11 | 10 - 9 | 9 - 6 |
| | 3.125x23.375 | 14 - 2 | 11 - 9 | 10 - 4 | 14 - 1 | 11 - 9 | 10 - 4 | 13 - 7 | 11 - 4 | 10 - 1 | 13 - 3 | 11 - 0 | 9 - 9 |
| | 3.125x24.750 | 14 - 6 | 12 - 0 | 10 - 7 | 14 - 4 | 12 - 0 | 10 - 7 | 13 - 11 | 11 - 7 | 10 - 4 | 13 - 6 | 11 - 3 | 10 - 0 |
| | 5.125x5.500 | 5 - 10 | 4 - 6 | 3 - 9 | 5 - 10 | 4 - 6 | 3 - 9 | 5 - 10 | 4 - 6 | 3 - 9 | 5 - 8 | 4 - 4 | 3 - 8 |
| | 5.125x6.875 | 7 - 4 | 5 - 7 | 4 - 8 | 7 - 4 | 5 - 7 | 4 - 8 | 7 - 4 | 5 - 7 | 4 - 8 | 7 - 1 | 5 - 5 | 4 - 7 |
| | 5.125x8.250 | 8 - 9 | 6 - 8 | 5 - 7 | 8 - 9 | 6 - 8 | 5 - 7 | 8 - 9 | 6 - 8 | 5 - 7 | 8 - 6 | 6 - 6 | 5 - 6 |
| | 5.125x9.625 | 10 - 2 | 7 - 10 | 6 - 7 | 10 - 2 | 7 - 10 | 6 - 7 | 10 - 2 | 7 - 10 | 6 - 7 | 9 - 10 | 7 - 7 | 6 - 4 |
| | 5.125x11.000 | 11 - 8 | 8 - 11 | 7 - 6 | 11 - 8 | 8 - 11 | 7 - 6 | 11 - 8 | 8 - 11 | 7 - 6 | 11 - 3 | 8 - 8 | 7 - 3 |
| | 5.125x12.375 | 13 - 1 | 10 - 0 | 8 - 5 | 13 - 1 | 10 - 0 | 8 - 5 | 13 - 1 | 10 - 0 | 8 - 5 | 12 - 7 | 9 - 8 | 8 - 2 |
| | 5.125x13.750 | 14 - 6 | 11 - 1 | 9 - 4 | 14 - 6 | 11 - 1 | 9 - 4 | 14 - 6 | 11 - 1 | 9 - 4 | 13 - 11 | 10 - 9 | 9 - 1 |
| | 5.125x15.125 | 15 - 10 | 12 - 2 | 10 - 3 | 15 - 10 | 12 - 2 | 10 - 3 | 15 - 10 | 12 - 2 | 10 - 3 | 15 - 3 | 11 - 9 | 9 - 11 |
| | 5.125x16.500 | 17 - 2 | 13 - 2 | 11 - 1 | 17 - 2 | 13 - 2 | 11 - 1 | 17 - 2 | 13 - 2 | 11 - 1 | 16 - 6 | 12 - 9 | 10 - 10 |
| | 5.125x17.875 | 18 - 6 | 14 - 3 | 12 - 0 | 18 - 6 | 14 - 3 | 12 - 0 | 18 - 5 | 14 - 3 | 12 - 0 | 17 - 8 | 13 - 9 | 11 - 8 |
| | 5.125x19.250 | 19 - 8 | 15 - 3 | 12 - 10 | 19 - 8 | 15 - 3 | 12 - 10 | 19 - 7 | 15 - 3 | 12 - 10 | 18 - 10 | 14 - 8 | 12 - 6 |
| | 5.125x20.625 | 20-0† | 16 - 2 | 13 - 9 | 20-0† | 16 - 2 | 13 - 9 | 20-0† | 16 - 2 | 13 - 9 | 19 - 10 | 15 - 7 | 13 - 3 |
| | 5.125x22.000 | 20-0† | 17 - 1 | 14 - 6 | 20-0† | 17 - 1 | 14 - 6 | 20-0† | 17 - 1 | 14 - 6 | 20-0† | 16 - 5 | 14 - 0 |
| | 5.125x23.375 | 20-0† | 17 - 11 | 15 - 3 | 20-0† | 17 - 11 | 15 - 3 | 20-0† | 17 - 10 | 15 - 3 | 20-0† | 17 - 2 | 14 - 8 |
| | 5.125x24.750 | 20-0† | 18 - 8 | 16 - 0 | 20-0† | 18 - 8 | 16 - 0 | 20-0† | 18 - 5 | 15 - 11 | 20-0† | 17 - 9 | 15 - 4 |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22E2 Laterally Supported (Raised) Header Spans for Exterior Loadbearing Walls

**Raised Exterior**

(Supporting a Roof, Ceiling, and Two Clear Span Floors) Dead Load Assumptions:
Roof/Ceiling Assembly = 20 psf, Floor Assembly = 10psf, Wall Assembly = 121plf, $L/\Delta_{LL}$=360

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Headers Supporting | Size | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[2,4,5] | | | | | | | | | | | |
| Roof, Ceiling, and Two Clear Span Floors | 1-2x6 | 2 - 3 | 1 - 9 | 1 - 5 | 2 - 3 | 1 - 9 | 1 - 5 | 2 - 3 | 1 - 9 | 1 - 5 | 2 - 2 | 1 - 8 | 1 - 5 |
| | 1-2x8 | 2 - 10 | 2 - 2 | 1 - 10 | 2 - 10 | 2 - 2 | 1 - 10 | 2 - 10 | 2 - 2 | 1 - 10 | 2 - 9 | 2 - 1 | 1 - 9 |
| | 1-2x10 | 3 - 4 | 2 - 7 | 2 - 2 | 3 - 4 | 2 - 7 | 2 - 2 | 3 - 4 | 2 - 7 | 2 - 2 | 3 - 3 | 2 - 6 | 2 - 1 |
| | 1-2x12 | 4 - 0 | 3 - 0 | 2 - 7 | 4 - 0 | 3 - 0 | 2 - 7 | 4 - 0 | 3 - 0 | 2 - 7 | 3 - 10 | 2 - 11 | 2 - 6 |
| | 2-2x4 | 2 - 3 | 1 - 8 | 1 - 4 | 2 - 3 | 1 - 8 | 1 - 4 | 2 - 3 | 1 - 8 | 1 - 4 | 2 - 2 | 1 - 7 | 1 - 4 |
| | 2-2x6 | 3 - 4 | 2 - 6 | 2 - 2 | 3 - 4 | 2 - 6 | 2 - 2 | 3 - 4 | 2 - 6 | 2 - 2 | 3 - 3 | 2 - 6 | 2 - 1 |
| | 2-2x8 | 4 - 3 | 3 - 3 | 2 - 8 | 4 - 3 | 3 - 3 | 2 - 8 | 4 - 3 | 3 - 3 | 2 - 8 | 4 - 1 | 3 - 1 | 2 - 8 |
| | 2-2x10 | 5 - 0 | 3 - 10 | 3 - 2 | 5 - 0 | 3 - 10 | 3 - 2 | 5 - 0 | 3 - 10 | 3 - 2 | 4 - 10 | 3 - 8 | 3 - 1 |
| | 2-2x12 | 5 - 11 | 4 - 6 | 3 - 9 | 5 - 11 | 4 - 6 | 3 - 9 | 5 - 11 | 4 - 6 | 3 - 9 | 5 - 8 | 4 - 4 | 3 - 8 |
| | 3-2x8 | 5 - 3 | 4 - 0 | 3 - 5 | 5 - 3 | 4 - 0 | 3 - 5 | 5 - 3 | 4 - 0 | 3 - 5 | 5 - 1 | 3 - 11 | 3 - 4 |
| | 3-2x10 | 6 - 3 | 4 - 9 | 4 - 0 | 6 - 3 | 4 - 9 | 4 - 0 | 6 - 3 | 4 - 9 | 4 - 0 | 6 - 1 | 4 - 8 | 3 - 11 |
| | 3-2x12 | 7 - 5 | 5 - 8 | 4 - 9 | 7 - 5 | 5 - 8 | 4 - 9 | 7 - 5 | 5 - 8 | 4 - 9 | 7 - 2 | 5 - 6 | 4 - 7 |
| | 4-2x8 | 6 - 1 | 4 - 8 | 3 - 11 | 6 - 1 | 4 - 8 | 3 - 11 | 6 - 1 | 4 - 8 | 3 - 11 | 5 - 11 | 4 - 6 | 3 - 10 |
| | 4-2x10 | 7 - 3 | 5 - 6 | 4 - 8 | 7 - 3 | 5 - 6 | 4 - 8 | 7 - 3 | 5 - 6 | 4 - 8 | 7 - 0 | 5 - 4 | 4 - 6 |
| | 4-2x12 | 8 - 6 | 6 - 6 | 5 - 6 | 8 - 6 | 6 - 6 | 5 - 6 | 8 - 6 | 6 - 6 | 5 - 6 | 8 - 3 | 6 - 4 | 5 - 4 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Beams[3,4,5] | | | | | | | | | | | |
| | 3.125x5.500 | 4 - 7 | 3 - 6 | 2 - 11 | 4 - 7 | 3 - 6 | 2 - 11 | 4 - 7 | 3 - 6 | 2 - 11 | 4 - 5 | 3 - 5 | 2 - 9 |
| | 3.125x6.875 | 5 - 9 | 4 - 4 | 3 - 7 | 5 - 9 | 4 - 4 | 3 - 7 | 5 - 9 | 4 - 4 | 3 - 7 | 5 - 6 | 4 - 3 | 3 - 6 |
| | 3.125x8.250 | 6 - 10 | 5 - 3 | 4 - 4 | 6 - 10 | 5 - 3 | 4 - 4 | 6 - 10 | 5 - 3 | 4 - 4 | 6 - 8 | 5 - 1 | 4 - 2 |
| | 3.125x9.625 | 8 - 0 | 6 - 1 | 5 - 1 | 8 - 0 | 6 - 1 | 5 - 1 | 8 - 0 | 6 - 1 | 5 - 1 | 7 - 9 | 5 - 11 | 4 - 10 |
| | 3.125x11.000 | 9 - 2 | 7 - 0 | 5 - 9 | 9 - 2 | 7 - 0 | 5 - 9 | 9 - 2 | 7 - 0 | 5 - 9 | 8 - 10 | 6 - 9 | 5 - 7 |
| | 3.125x12.375 | 10 - 4 | 7 - 10 | 6 - 6 | 10 - 4 | 7 - 10 | 6 - 6 | 10 - 4 | 7 - 10 | 6 - 6 | 9 - 11 | 7 - 8 | 6 - 3 |
| | 3.125x13.750 | 11 - 5 | 8 - 9 | 7 - 3 | 11 - 5 | 8 - 9 | 7 - 3 | 11 - 5 | 8 - 9 | 7 - 3 | 11 - 1 | 8 - 6 | 7 - 0 |
| | 3.125x15.125 | 12 - 7 | 9 - 7 | 7 - 11 | 12 - 7 | 9 - 7 | 7 - 11 | 12 - 7 | 9 - 7 | 7 - 11 | 12 - 2 | 9 - 4 | 7 - 8 |
| | 3.125x16.500 | 13 - 9 | 10 - 6 | 8 - 8 | 13 - 9 | 10 - 6 | 8 - 8 | 13 - 9 | 10 - 6 | 8 - 8 | 13 - 3 | 10 - 2 | 8 - 4 |
| | 3.125x17.875 | 14 - 11 | 11 - 4 | 9 - 5 | 14 - 11 | 11 - 4 | 9 - 5 | 14 - 11 | 11 - 4 | 9 - 5 | 14 - 5 | 11 - 0 | 9 - 1 |
| | 3.125x19.250 | 16 - 0 | 12 - 3 | 10 - 1 | 16 - 0 | 12 - 3 | 10 - 1 | 16 - 0 | 12 - 3 | 10 - 1 | 15 - 6 | 11 - 10 | 9 - 9 |
| | 3.125x20.625 | 17 - 2 | 13 - 1 | 10 - 10 | 17 - 2 | 13 - 1 | 10 - 10 | 17 - 2 | 13 - 1 | 10 - 10 | 16 - 7 | 12 - 9 | 10 - 5 |
| | 3.125x22.000 | 18 - 4 | 14 - 0 | 11 - 7 | 18 - 4 | 14 - 0 | 11 - 7 | 18 - 4 | 14 - 0 | 11 - 7 | 17 - 8 | 13 - 7 | 11 - 2 |
| | 3.125x23.375 | 19 - 4 | 14 - 10 | 12 - 3 | 19 - 4 | 14 - 10 | 12 - 3 | 19 - 4 | 14 - 10 | 12 - 3 | 18 - 9 | 14 - 5 | 11 - 10 |
| | 3.125x24.750 | 20-0† | 15 - 9 | 13 - 0 | 20-0† | 15 - 9 | 13 - 0 | 20-0† | 15 - 9 | 13 - 0 | 19 - 9 | 15 - 3 | 12 - 6 |
| | 5.125x5.500 | 5 - 10 | 4 - 6 | 3 - 9 | 5 - 10 | 4 - 6 | 3 - 9 | 5 - 10 | 4 - 6 | 3 - 9 | 5 - 8 | 4 - 4 | 3 - 8 |
| | 5.125x6.875 | 7 - 4 | 5 - 7 | 4 - 8 | 7 - 4 | 5 - 7 | 4 - 8 | 7 - 4 | 5 - 7 | 4 - 8 | 7 - 1 | 5 - 5 | 4 - 7 |
| | 5.125x8.250 | 8 - 10 | 6 - 9 | 5 - 8 | 8 - 10 | 6 - 9 | 5 - 8 | 8 - 10 | 6 - 9 | 5 - 8 | 8 - 6 | 6 - 6 | 5 - 6 |
| | 5.125x9.625 | 10 - 3 | 7 - 10 | 6 - 7 | 10 - 3 | 7 - 10 | 6 - 7 | 10 - 3 | 7 - 10 | 6 - 7 | 9 - 11 | 7 - 7 | 6 - 5 |
| | 5.125x11.000 | 11 - 9 | 8 - 11 | 7 - 6 | 11 - 9 | 8 - 11 | 7 - 6 | 11 - 9 | 8 - 11 | 7 - 6 | 11 - 4 | 8 - 8 | 7 - 4 |
| | 5.125x12.375 | 13 - 2 | 10 - 1 | 8 - 5 | 13 - 2 | 10 - 1 | 8 - 5 | 13 - 2 | 10 - 1 | 8 - 5 | 12 - 9 | 9 - 9 | 8 - 3 |
| | 5.125x13.750 | 14 - 8 | 11 - 2 | 9 - 5 | 14 - 8 | 11 - 2 | 9 - 5 | 14 - 8 | 11 - 2 | 9 - 5 | 14 - 2 | 10 - 10 | 9 - 2 |
| | 5.125x15.125 | 16 - 2 | 12 - 4 | 10 - 4 | 16 - 2 | 12 - 4 | 10 - 4 | 16 - 2 | 12 - 4 | 10 - 4 | 15 - 7 | 11 - 11 | 10 - 1 |
| | 5.125x16.500 | 17 - 6 | 13 - 5 | 11 - 3 | 17 - 6 | 13 - 5 | 11 - 3 | 17 - 6 | 13 - 5 | 11 - 3 | 16 - 11 | 13 - 0 | 11 - 0 |
| | 5.125x17.875 | 18 - 9 | 14 - 6 | 12 - 2 | 18 - 9 | 14 - 6 | 12 - 2 | 18 - 9 | 14 - 6 | 12 - 2 | 18 - 2 | 14 - 1 | 11 - 11 |
| | 5.125x19.250 | 20-0† | 15 - 6 | 13 - 2 | 20-0† | 15 - 6 | 13 - 2 | 20-0† | 15 - 6 | 13 - 2 | 19 - 5 | 15 - 1 | 12 - 10 |
| | 5.125x20.625 | 20-0† | 16 - 6 | 14 - 0 | 20-0† | 16 - 6 | 14 - 0 | 20-0† | 16 - 6 | 14 - 0 | 20-0† | 16 - 1 | 13 - 8 |
| | 5.125x22.000 | 20-0† | 17 - 6 | 14 - 10 | 20-0† | 17 - 6 | 14 - 10 | 20-0† | 17 - 6 | 14 - 10 | 20-0† | 17 - 0 | 14 - 5 |
| | 5.125x23.375 | 20-0† | 18 - 6 | 15 - 8 | 20-0† | 18 - 6 | 15 - 8 | 20-0† | 18 - 6 | 15 - 8 | 20-0† | 18 - 0 | 15 - 3 |
| | 5.125x24.750 | 20-0† | 19 - 6 | 16 - 6 | 20-0† | 19 - 6 | 16 - 6 | 20-0† | 19 - 6 | 16 - 6 | 20-0† | 18 - 11 | 16 - 1 |

† Spans are limited to 20 feet in length.
See footnotes 1-5.

## Table 3.22A1 to Table 3.22E2 Footnotes

1 Tabulated spans are calculated using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22 and assume a thermal factor, $C_t$=1.2. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

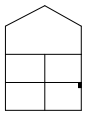
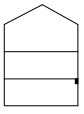
2 Tabulated spans are based on the lowest $F_b$, $F_v$, and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern PIne, and Spruce-Pine-Fir. For #3 Grade lumber, spans shall be multiplied by 0.75.

3 Tabulated spans assume 20F combination glulam with a minimum $F_{bx}$=2,000psi, $F_{vx}$=210psi, and E=1,500,000psi.

4 The number of jack studs required at each end of the header shall be determined from Table 3.22F.

5 Spans checked for live load deflection only.

## Table 3.22F Jack Stud Requirements for Headers in Exterior Loadbearing Walls

| | | Roof Live Load | | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | | 30 psf | | | | 50 psf | | | | 70 psf | | | |
| | | Header Width | | | | | | | | | | | | | | | |
| | | 3" (2-2x) | 4.5" (3-2x) | 5" | 6" (4-2x) | 3" (2-2x) | 4.5" (3-2x) | 5" | 6" (4-2x) | 3" (2-2x) | 4.5" (3-2x) | 5" | 6" (4-2x) | 3" (2-2x) | 4.5" (3-2x) | 5" | 6" (4-2x) |
| Header Supporting | Header Span (ft) | Number of Jack Studs Required at Each End of the Header[2,3,4] | | | | | | | | | | | | | | | |
| Roof and Ceiling | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 1 |
| | 6 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 |
|  | 8 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 4 | 3 | 3 | 2 |
| | 10 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 3 | 3 | 2 | 5 | 3 | 3 | 3 |
| | 12 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 5 | 3 | 3 | 3 | 6 | 4 | 4 | 3 |
| | 14 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 2 | 5 | 4 | 3 | 3 | 7 | 5 | 4 | 4 |
| | 16 | 4 | 3 | 3 | 2 | 4 | 3 | 3 | 2 | 6 | 4 | 4 | 3 | 7 | 5 | 5 | 4 |
| | 18 | 4 | 3 | 3 | 2 | 5 | 3 | 3 | 3 | 7 | 5 | 4 | 4 | 8 | 6 | 5 | 4 |
| | 20 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 3 | 7 | 5 | 5 | 4 | 9 | 6 | 6 | 5 |
| Roof, Ceiling, and One Center Bearing Floor | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 4 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 |
| | 6 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 |
| | 8 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 2 |
| | 10 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 2 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 3 |
|  | 12 | 4 | 3 | 3 | 2 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 3 | 6 | 4 | 4 | 3 |
| | 14 | 5 | 4 | 3 | 3 | 5 | 4 | 3 | 3 | 6 | 4 | 4 | 3 | 7 | 5 | 5 | 4 |
| | 16 | 6 | 4 | 4 | 3 | 6 | 4 | 4 | 3 | 7 | 5 | 4 | 4 | 8 | 6 | 5 | 4 |
| | 18 | 6 | 4 | 4 | 3 | 7 | 5 | 4 | 4 | 8 | 5 | 5 | 4 | 9 | 6 | 6 | 5 |
| | 20 | 7 | 5 | 4 | 4 | 7 | 5 | 5 | 4 | 9 | 6 | 5 | 5 | 10 | 7 | 6 | 5 |
| Roof, Ceiling, and One Clear Span Floor | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| | 4 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 |
| | 6 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 2 |
| | 8 | 4 | 3 | 3 | 2 | 4 | 3 | 3 | 2 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 3 |
| | 10 | 5 | 3 | 3 | 3 | 5 | 3 | 3 | 3 | 6 | 4 | 4 | 3 | 6 | 4 | 4 | 3 |
|  | 12 | 6 | 4 | 4 | 3 | 6 | 4 | 4 | 3 | 7 | 5 | 4 | 4 | 7 | 5 | 5 | 4 |
| | 14 | 6 | 4 | 4 | 3 | 7 | 5 | 4 | 4 | 8 | 5 | 5 | 4 | 9 | 6 | 5 | 5 |
| | 16 | 7 | 5 | 5 | 4 | 8 | 5 | 5 | 4 | 9 | 6 | 5 | 5 | 10 | 7 | 6 | 5 |
| | 18 | 8 | 6 | 5 | 4 | 8 | 6 | 5 | 4 | 10 | 7 | 6 | 5 | 11 | 7 | 7 | 6 |
| | 20 | 9 | 6 | 6 | 5 | 9 | 6 | 6 | 5 | 11 | 7 | 7 | 6 | 12 | 8 | 7 | 6 |
| Roof, Ceiling, and Two Center Bearing Floors | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| | 4 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 |
| | 6 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 2 |
| | 8 | 4 | 3 | 3 | 2 | 4 | 3 | 3 | 2 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 3 |
| | 10 | 5 | 4 | 3 | 3 | 5 | 4 | 3 | 3 | 6 | 4 | 4 | 3 | 7 | 5 | 4 | 4 |
|  | 12 | 6 | 4 | 4 | 3 | 6 | 4 | 4 | 3 | 7 | 5 | 4 | 4 | 8 | 5 | 5 | 4 |
| | 14 | 7 | 5 | 4 | 4 | 7 | 5 | 5 | 4 | 8 | 6 | 5 | 4 | 9 | 6 | 6 | 5 |
| | 16 | 8 | 5 | 5 | 4 | 8 | 6 | 5 | 4 | 9 | 6 | 6 | 5 | 10 | 7 | 6 | 5 |
| | 18 | 9 | 6 | 5 | 5 | 9 | 6 | 6 | 5 | 10 | 7 | 6 | 5 | 12 | 8 | 7 | 6 |
| | 20 | 10 | 7 | 6 | 5 | 10 | 7 | 6 | 5 | 11 | 8 | 7 | 6 | 13 | 9 | 8 | 7 |
| Roof, Ceiling, and Two Clear Span Floors | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 |
| | 4 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 3 | 2 | 2 |
| | 6 | 5 | 3 | 3 | 3 | 5 | 3 | 3 | 3 | 5 | 3 | 3 | 3 | 5 | 4 | 3 | 3 |
| | 8 | 6 | 4 | 4 | 3 | 6 | 4 | 4 | 3 | 6 | 4 | 4 | 3 | 7 | 5 | 4 | 4 |
| | 10 | 7 | 5 | 5 | 4 | 7 | 5 | 5 | 4 | 8 | 5 | 5 | 4 | 9 | 6 | 5 | 5 |
|  | 12 | 9 | 6 | 5 | 5 | 9 | 6 | 5 | 5 | 9 | 6 | 6 | 5 | 10 | 7 | 6 | 5 |
| | 14 | 10 | 7 | 6 | 5 | 10 | 7 | 6 | 5 | 11 | 7 | 7 | 6 | 12 | 8 | 7 | 6 |
| | 16 | 11 | 8 | 7 | 6 | 11 | 8 | 7 | 6 | 12 | 8 | 8 | 6 | 14 | 9 | 8 | 7 |
| | 18 | 13 | 9 | 8 | 7 | 13 | 9 | 8 | 7 | 14 | 9 | 9 | 7 | 15 | 10 | 9 | 8 |
| | 20 | 14 | 9 | 9 | 7 | 14 | 9 | 9 | 7 | 15 | 10 | 9 | 8 | 17 | 11 | 10 | 9 |

1 Jack stud requirements are calculated using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22 and assume a thermal factor, $C_t$=1.2. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

2 Jack stud requirements are based on a roof span (W) of 36 feet. For other roof spans, the tabulated number of jack studs required at each end of the header shall be multiplied by (W + 12)/48.

3 Where the number of jack studs equals 1, the header shall be permitted to be supported by a framing anchor attached to the full-height wall stud.

4 An equivalent number of full height studs are permitted to replace jack studs, when adequate gravity connections are provided.

## Table 3.23A Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls Resisting Wind Loads

# Exposure B Dropped

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[1,2,3,5]** | | | | | | | | | | | | | |
| **1-2x6** | 6 - 11 | 6 - 6 | 6 - 3 | 5 - 11 | 5 - 8 | 5 - 5 | 5 - 2 | 4 - 9 | 4 - 5 | 4 - 2 | 3 - 11 | 3 - 8 | 3 - 5 | 3 - 2 |
| **1-2x8** | 7 - 7 | 7 - 3 | 6 - 10 | 6 - 6 | 6 - 3 | 6 - 0 | 5 - 9 | 5 - 3 | 4 - 11 | 4 - 7 | 4 - 3 | 4 - 0 | 3 - 10 | 3 - 6 |
| **1-2x10** | 8 - 2 | 7 - 9 | 7 - 4 | 7 - 0 | 6 - 8 | 6 - 5 | 6 - 2 | 5 - 8 | 5 - 3 | 4 - 11 | 4 - 7 | 4 - 4 | 4 - 1 | 3 - 9 |
| **1-2x12** | 8 - 9 | 8 - 3 | 7 - 10 | 7 - 6 | 7 - 2 | 6 - 10 | 6 - 7 | 6 - 1 | 5 - 7 | 5 - 3 | 4 - 11 | 4 - 7 | 4 - 4 | 4 - 0 |
| **2-2x4** | 8 - 0 | 7 - 7 | 7 - 2 | 6 - 10 | 6 - 6 | 6 - 3 | 6 - 0 | 5 - 6 | 5 - 2 | 4 - 9 | 4 - 6 | 4 - 3 | 4 - 0 | 3 - 8 |
| **2-2x6** | 9 - 9 | 9 - 3 | 8 - 9 | 8 - 4 | 8 - 0 | 7 - 8 | 7 - 4 | 6 - 9 | 6 - 3 | 5 - 10 | 5 - 6 | 5 - 2 | 4 - 11 | 4 - 6 |
| **2-2x8** | 10 - 9 | 10 - 3 | 9 - 8 | 9 - 3 | 8 - 10 | 8 - 5 | 8 - 1 | 7 - 6 | 6 - 11 | 6 - 6 | 6 - 1 | 5 - 8 | 5 - 5 | 5 - 0 |
| **2-2x10** | 11 - 7 | 10 - 11 | 10 - 5 | 9 - 11 | 9 - 6 | 9 - 1 | 8 - 8 | 8 - 0 | 7 - 5 | 6 - 11 | 6 - 6 | 6 - 1 | 5 - 9 | 5 - 4 |
| **2-2x12** | 12 - 4 | 11 - 8 | 11 - 1 | 10 - 7 | 10 - 1 | 9 - 8 | 9 - 3 | 8 - 7 | 7 - 11 | 7 - 5 | 6 - 11 | 6 - 6 | 6 - 2 | 5 - 8 |
| **3-2x8** | 13 - 2 | 12 - 6 | 11 - 11 | 11 - 4 | 10 - 10 | 10 - 4 | 9 - 11 | 9 - 2 | 8 - 6 | 7 - 11 | 7 - 5 | 7 - 0 | 6 - 7 | 6 - 1 |
| **3-2x10** | 14 - 2 | 13 - 5 | 12 - 9 | 12 - 2 | 11 - 7 | 11 - 1 | 10 - 7 | 9 - 10 | 9 - 1 | 8 - 6 | 8 - 0 | 7 - 6 | 7 - 1 | 6 - 6 |
| **3-2x12** | 15 - 1 | 14 - 4 | 13 - 7 | 13 - 0 | 12 - 4 | 11 - 10 | 11 - 4 | 10 - 6 | 9 - 9 | 9 - 1 | 8 - 6 | 8 - 0 | 7 - 7 | 7 - 0 |
| **4-2x8** | 15 - 3 | 14 - 5 | 13 - 9 | 13 - 1 | 12 - 6 | 11 - 11 | 11 - 5 | 10 - 7 | 9 - 10 | 9 - 2 | 8 - 7 | 8 - 1 | 7 - 7 | 7 - 0 |
| **4-2x10** | 16 - 4 | 15 - 6 | 14 - 9 | 14 - 0 | 13 - 5 | 12 - 10 | 12 - 3 | 11 - 4 | 10 - 6 | 9 - 10 | 9 - 2 | 8 - 8 | 8 - 2 | 7 - 7 |
| **4-2x12** | 17 - 6 | 16 - 7 | 15 - 9 | 15 - 0 | 14 - 3 | 13 - 8 | 13 - 1 | 12 - 1 | 11 - 3 | 10 - 6 | 9 - 10 | 9 - 3 | 8 - 9 | 8 - 1 |
| **Size** | **Maximum Header/Girder Spans (ft-in.) for Glued Laminated Timber Beams[1,2,4,5]** | | | | | | | | | | | | | |
| **3.125x5.500** | 12 - 11 | 12 - 3 | 11 - 7 | 11 - 1 | 10 - 7 | 10 - 1 | 9 - 8 | 8 - 11 | 8 - 4 | 7 - 9 | 7 - 3 | 6 - 10 | 6 - 5 | 6 - 0 |
| **3.125x6.875** | 14 - 5 | 13 - 8 | 13 - 0 | 12 - 5 | 11 - 10 | 11 - 4 | 10 - 10 | 10 - 0 | 9 - 3 | 8 - 8 | 8 - 1 | 7 - 8 | 7 - 3 | 6 - 8 |
| **3.125x8.250** | 15 - 10 | 15 - 0 | 14 - 3 | 13 - 7 | 12 - 11 | 12 - 5 | 11 - 10 | 10 - 11 | 10 - 2 | 9 - 6 | 8 - 11 | 8 - 4 | 7 - 11 | 7 - 4 |
| **3.125x9.625** | 17 - 1 | 16 - 2 | 15 - 5 | 14 - 8 | 14 - 0 | 13 - 4 | 12 - 10 | 11 - 10 | 11 - 0 | 10 - 3 | 9 - 7 | 9 - 1 | 8 - 7 | 7 - 11 |
| **3.125x11.000** | 18 - 3 | 17 - 4 | 16 - 5 | 15 - 8 | 14 - 11 | 14 - 4 | 13 - 8 | 12 - 8 | 11 - 9 | 11 - 0 | 10 - 3 | 9 - 8 | 9 - 2 | 8 - 5 |
| **3.125x12.375** | 19 - 4 | 18 - 4 | 17 - 5 | 16 - 7 | 15 - 10 | 15 - 2 | 14 - 6 | 13 - 5 | 12 - 5 | 11 - 7 | 10 - 11 | 10 - 3 | 9 - 8 | 8 - 11 |
| **3.125x13.750** | 20-0† | 19 - 4 | 18 - 5 | 17 - 6 | 16 - 8 | 16 - 0 | 15 - 4 | 14 - 2 | 13 - 2 | 12 - 3 | 11 - 6 | 10 - 10 | 10 - 3 | 9 - 5 |
| **3.125x15.125** | 20-0† | 20-0† | 19 - 3 | 18 - 4 | 17 - 6 | 16 - 9 | 16 - 1 | 14 - 10 | 13 - 9 | 12 - 10 | 12 - 1 | 11 - 4 | 10 - 9 | 9 - 11 |
| **3.125x16.500** | 20-0† | 20-0† | 20-0† | 19 - 2 | 18 - 4 | 17 - 6 | 16 - 9 | 15 - 6 | 14 - 5 | 13 - 5 | 12 - 7 | 11 - 10 | 11 - 2 | 10 - 4 |
| **3.125x17.875** | 20-0† | 20-0† | 20-0† | 19 - 11 | 19 - 1 | 18 - 3 | 17 - 6 | 16 - 1 | 15 - 0 | 14 - 0 | 13 - 1 | 12 - 4 | 11 - 8 | 10 - 9 |
| **3.125x19.250** | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 9 | 18 - 11 | 18 - 1 | 16 - 9 | 15 - 6 | 14 - 6 | 13 - 7 | 12 - 10 | 12 - 1 | 11 - 2 |
| **3.125x20.625** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 7 | 18 - 9 | 17 - 4 | 16 - 1 | 15 - 0 | 14 - 1 | 13 - 3 | 12 - 6 | 11 - 7 |
| **3.125x22.000** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 4 | 17 - 11 | 16 - 7 | 15 - 6 | 14 - 6 | 13 - 8 | 12 - 11 | 11 - 11 |
| **3.125x23.375** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20 - 0 | 18 - 5 | 17 - 1 | 16 - 0 | 15 - 0 | 14 - 1 | 13 - 4 | 12 - 3 |
| **3.125x24.750** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 0 | 17 - 7 | 16 - 5 | 15 - 5 | 14 - 6 | 13 - 8 | 12 - 8 |
| **5.125x5.500** | 20-0† | 19 - 6 | 18 - 7 | 17 - 8 | 16 - 11 | 16 - 2 | 15 - 6 | 14 - 3 | 13 - 3 | 12 - 5 | 11 - 7 | 10 - 11 | 10 - 4 | 9 - 6 |
| **5.125x6.875** | 20-0† | 20-0† | 20-0† | 19 - 9 | 18 - 10 | 18 - 1 | 17 - 4 | 16 - 0 | 14 - 10 | 13 - 10 | 13 - 0 | 12 - 3 | 11 - 6 | 10 - 8 |
| **5.125x8.250** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 9 | 18 - 11 | 17 - 6 | 16 - 3 | 15 - 2 | 14 - 3 | 13 - 4 | 12 - 8 | 11 - 8 |
| **5.125x9.625** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 11 | 17 - 6 | 16 - 4 | 15 - 4 | 14 - 5 | 13 - 8 | 12 - 7 |
| **5.125x11.000** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 9 | 17 - 6 | 16 - 5 | 15 - 5 | 14 - 7 | 13 - 6 |
| **5.125x12.375** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 11 | 18 - 7 | 17 - 5 | 16 - 5 | 15 - 6 | 14 - 3 |
| **5.125x13.750** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 7 | 18 - 4 | 17 - 3 | 16 - 4 | 15 - 1 |
| **5.125x15.125** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 3 | 18 - 1 | 17 - 1 | 15 - 9 |
| **5.125x16.500** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 11 | 17 - 10 | 16 - 6 |
| **5.125x17.875** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 18 - 7 | 17 - 2 |
| **5.125x19.250** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 4 | 17 - 10 |
| **5.125x20.625** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20 - 0 | 18 - 5 |
| **5.125x22.000** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 0 |
| **5.125x23.375** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 |
| **5.125x24.750** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† |

† Spans are limited to 20 feet in length.

1 Tabulated header spans shall be permitted to be divided by 0.96, for framing not located within 8 feet of building corners.

2 The number of jack studs required at each end of the header shall be determined from Table 3.22F.

3 Tabulated spans are based on the lowest $F_b$ and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern PIne, and Spruce-Pine-Fir.

4 Tabulated spans assume 20F combination glulam with a minimum $F_{bV}$ = 800 psi.

5 The number of full height studs required at each end of the header shall be determined in accordance with Table 3.23C.

## Table 3.23A Laterally Unsupported (Dropped) Header Spans for Exterior Loadbearing Walls Resisting Wind Loads

# Exposure C Dropped

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Size** | **Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[1,2,3,5]** | | | | | | | | | | | | | |
| **1-2x6** | 5 - 10 | 5 - 7 | 5 - 3 | 5 - 0 | 4 - 9 | 4 - 7 | 4 - 5 | 4 - 1 | 3 - 9 | 3 - 6 | 3 - 4 | 3 - 1 | 2 - 11 | 2 - 8 |
| **1-2x8** | 6 - 6 | 6 - 2 | 5 - 10 | 5 - 7 | 5 - 3 | 5 - 1 | 4 - 10 | 4 - 6 | 4 - 2 | 3 - 11 | 3 - 8 | 3 - 5 | 3 - 3 | 3 - 0 |
| **1-2x10** | 6 - 11 | 6 - 7 | 6 - 3 | 5 - 11 | 5 - 8 | 5 - 5 | 5 - 2 | 4 - 10 | 4 - 6 | 4 - 2 | 3 - 11 | 3 - 8 | 3 - 6 | 3 - 2 |
| **1-2x12** | 7 - 5 | 7 - 0 | 6 - 8 | 6 - 4 | 6 - 1 | 5 - 10 | 5 - 7 | 5 - 2 | 4 - 9 | 4 - 5 | 4 - 2 | 3 - 11 | 3 - 8 | 3 - 5 |
| **2-2x4** | 6 - 9 | 6 - 5 | 6 - 1 | 5 - 10 | 5 - 7 | 5 - 4 | 5 - 1 | 4 - 8 | 4 - 4 | 4 - 1 | 3 - 10 | 3 - 7 | 3 - 5 | 3 - 2 |
| **2-2x6** | 8 - 3 | 7 - 10 | 7 - 5 | 7 - 1 | 6 - 9 | 6 - 6 | 6 - 3 | 5 - 9 | 5 - 4 | 5 - 0 | 4 - 8 | 4 - 5 | 4 - 2 | 3 - 10 |
| **2-2x8** | 9 - 2 | 8 - 8 | 8 - 3 | 7 - 10 | 7 - 6 | 7 - 2 | 6 - 10 | 6 - 4 | 5 - 11 | 5 - 6 | 5 - 2 | 4 - 10 | 4 - 7 | 4 - 3 |
| **2-2x10** | 9 - 10 | 9 - 4 | 8 - 10 | 8 - 5 | 8 - 0 | 7 - 8 | 7 - 4 | 6 - 10 | 6 - 4 | 5 - 11 | 5 - 6 | 5 - 2 | 4 - 11 | 4 - 6 |
| **2-2x12** | 10 - 6 | 9 - 11 | 9 - 5 | 9 - 0 | 8 - 7 | 8 - 2 | 7 - 10 | 7 - 3 | 6 - 9 | 6 - 3 | 5 - 11 | 5 - 7 | 5 - 3 | 4 - 10 |
| **3-2x8** | 11 - 2 | 10 - 7 | 10 - 1 | 9 - 7 | 9 - 2 | 8 - 9 | 8 - 5 | 7 - 9 | 7 - 2 | 6 - 9 | 6 - 4 | 5 - 11 | 5 - 7 | 5 - 2 |
| **3-2x10** | 12 - 0 | 11 - 5 | 10 - 10 | 10 - 4 | 9 - 10 | 9 - 5 | 9 - 0 | 8 - 4 | 7 - 9 | 7 - 3 | 6 - 9 | 6 - 4 | 6 - 0 | 5 - 7 |
| **3-2x12** | 12 - 10 | 12 - 2 | 11 - 7 | 11 - 0 | 10 - 6 | 10 - 1 | 9 - 7 | 8 - 11 | 8 - 3 | 7 - 8 | 7 - 3 | 6 - 10 | 6 - 5 | 5 - 11 |
| **4-2x8** | 12 - 11 | 12 - 3 | 11 - 8 | 11 - 1 | 10 - 7 | 10 - 1 | 9 - 8 | 9 - 0 | 8 - 4 | 7 - 9 | 7 - 3 | 6 - 10 | 6 - 6 | 6 - 0 |
| **4-2x10** | 13 - 11 | 13 - 2 | 12 - 6 | 11 - 11 | 11 - 4 | 10 - 10 | 10 - 5 | 9 - 7 | 8 - 11 | 8 - 4 | 7 - 10 | 7 - 4 | 6 - 11 | 6 - 5 |
| **4-2x12** | 14 - 10 | 14 - 0 | 13 - 4 | 12 - 8 | 12 - 1 | 11 - 7 | 11 - 1 | 10 - 3 | 9 - 6 | 8 - 11 | 8 - 4 | 7 - 10 | 7 - 5 | 6 - 10 |
| **Size** | **Maximum Header/Girder Spans (ft-in.) for Glued Laminated Timber Beams[1,2,4,5]** | | | | | | | | | | | | | |
| **3.125x5.500** | 11 - 0 | 10 - 5 | 9 - 10 | 9 - 5 | 9 - 0 | 8 - 7 | 8 - 3 | 7 - 7 | 7 - 1 | 6 - 7 | 6 - 2 | 5 - 10 | 5 - 6 | 5 - 1 |
| **3.125x6.875** | 12 - 3 | 11 - 7 | 11 - 0 | 10 - 6 | 10 - 0 | 9 - 7 | 9 - 2 | 8 - 6 | 7 - 11 | 7 - 4 | 6 - 11 | 6 - 6 | 6 - 2 | 5 - 8 |
| **3.125x8.250** | 13 - 5 | 12 - 9 | 12 - 1 | 11 - 6 | 11 - 0 | 10 - 6 | 10 - 1 | 9 - 4 | 8 - 8 | 8 - 1 | 7 - 7 | 7 - 1 | 6 - 9 | 6 - 2 |
| **3.125x9.625** | 14 - 6 | 13 - 9 | 13 - 1 | 12 - 5 | 11 - 10 | 11 - 4 | 10 - 10 | 10 - 0 | 9 - 4 | 8 - 8 | 8 - 2 | 7 - 8 | 7 - 3 | 6 - 8 |
| **3.125x11.000** | 15 - 6 | 14 - 8 | 13 - 11 | 13 - 3 | 12 - 8 | 12 - 2 | 11 - 7 | 10 - 9 | 10 - 0 | 9 - 4 | 8 - 9 | 8 - 2 | 7 - 9 | 7 - 2 |
| **3.125x12.375** | 16 - 5 | 15 - 7 | 14 - 10 | 14 - 1 | 13 - 5 | 12 - 10 | 12 - 4 | 11 - 5 | 10 - 7 | 9 - 10 | 9 - 3 | 8 - 8 | 8 - 3 | 7 - 7 |
| **3.125x13.750** | 17 - 4 | 16 - 5 | 15 - 7 | 14 - 10 | 14 - 2 | 13 - 7 | 13 - 0 | 12 - 0 | 11 - 2 | 10 - 5 | 9 - 9 | 9 - 2 | 8 - 8 | 8 - 0 |
| **3.125x15.125** | 18 - 2 | 17 - 3 | 16 - 4 | 15 - 7 | 14 - 10 | 14 - 3 | 13 - 8 | 12 - 7 | 11 - 8 | 10 - 11 | 10 - 3 | 9 - 7 | 9 - 1 | 8 - 5 |
| **3.125x16.500** | 19 - 0 | 18 - 0 | 17 - 1 | 16 - 3 | 15 - 6 | 14 - 10 | 14 - 3 | 13 - 2 | 12 - 2 | 11 - 5 | 10 - 8 | 10 - 1 | 9 - 6 | 8 - 9 |
| **3.125x17.875** | 19 - 9 | 18 - 9 | 17 - 9 | 16 - 11 | 16 - 2 | 15 - 6 | 14 - 10 | 13 - 8 | 12 - 8 | 11 - 10 | 11 - 1 | 10 - 6 | 9 - 11 | 9 - 1 |
| **3.125x19.250** | 20-0† | 19 - 5 | 18 - 5 | 17 - 7 | 16 - 9 | 16 - 1 | 15 - 5 | 14 - 2 | 13 - 2 | 12 - 4 | 11 - 6 | 10 - 10 | 10 - 3 | 9 - 6 |
| **3.125x20.625** | 20-0† | 20-0† | 19 - 1 | 18 - 2 | 17 - 4 | 16 - 7 | 15 - 11 | 14 - 8 | 13 - 8 | 12 - 9 | 11 - 11 | 11 - 3 | 10 - 7 | 9 - 10 |
| **3.125x22.000** | 20-0† | 20-0† | 19 - 9 | 18 - 9 | 17 - 11 | 17 - 2 | 16 - 5 | 15 - 2 | 14 - 1 | 13 - 2 | 12 - 4 | 11 - 7 | 11 - 0 | 10 - 1 |
| **3.125x23.375** | 20-0† | 20-0† | 20-0† | 19 - 4 | 18 - 6 | 17 - 8 | 16 - 11 | 15 - 8 | 14 - 6 | 13 - 7 | 12 - 8 | 12 - 0 | 11 - 4 | 10 - 5 |
| **3.125x24.750** | 20-0† | 20-0† | 20-0† | 19 - 11 | 19 - 0 | 18 - 2 | 17 - 5 | 16 - 1 | 14 - 11 | 13 - 11 | 13 - 1 | 12 - 4 | 11 - 7 | 10 - 9 |
| **5.125x5.500** | 17 - 6 | 16 - 7 | 15 - 9 | 15 - 0 | 14 - 4 | 13 - 8 | 13 - 2 | 12 - 1 | 11 - 3 | 10 - 6 | 9 - 10 | 9 - 3 | 8 - 9 | 8 - 1 |
| **5.125x6.875** | 19 - 7 | 18 - 6 | 17 - 7 | 16 - 9 | 16 - 0 | 15 - 4 | 14 - 8 | 13 - 7 | 12 - 7 | 11 - 9 | 11 - 0 | 10 - 4 | 9 - 9 | 9 - 0 |
| **5.125x8.250** | 20-0† | 20-0† | 19 - 4 | 18 - 4 | 17 - 6 | 16 - 9 | 16 - 1 | 14 - 10 | 13 - 9 | 12 - 10 | 12 - 1 | 11 - 4 | 10 - 9 | 9 - 11 |
| **5.125x9.625** | 20-0† | 20-0† | 20-0† | 19 - 10 | 18 - 11 | 18 - 1 | 17 - 4 | 16 - 0 | 14 - 11 | 13 - 11 | 13 - 0 | 12 - 3 | 11 - 7 | 10 - 8 |
| **5.125x11.000** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 4 | 18 - 7 | 17 - 2 | 15 - 11 | 14 - 10 | 13 - 11 | 13 - 1 | 12 - 5 | 11 - 5 |
| **5.125x12.375** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 18 - 2 | 16 - 11 | 15 - 9 | 14 - 9 | 13 - 11 | 13 - 2 | 12 - 1 |
| **5.125x13.750** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 2 | 17 - 9 | 16 - 7 | 15 - 7 | 14 - 8 | 13 - 10 | 12 - 9 |
| **5.125x15.125** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 8 | 17 - 5 | 16 - 4 | 15 - 4 | 14 - 6 | 13 - 5 |
| **5.125x16.500** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 6 | 18 - 2 | 17 - 1 | 16 - 1 | 15 - 2 | 14 - 0 |
| **5.125x17.875** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 18 - 11 | 17 - 9 | 16 - 8 | 15 - 9 | 14 - 7 |
| **5.125x19.250** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 18 - 5 | 17 - 4 | 16 - 4 | 15 - 1 |
| **5.125x20.625** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 1 | 17 - 11 | 16 - 11 | 15 - 8 |
| **5.125x22.000** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 18 - 6 | 17 - 6 | 16 - 2 |
| **5.125x23.375** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 1 | 18 - 0 | 16 - 8 |
| **5.125x24.750** | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 20-0† | 19 - 8 | 18 - 7 | 17 - 2 |

† Spans are limited to 20 feet in length.

1 Tabulated header spans shall be permitted to be divided by 0.96, for framing not located within 8 feet of building corners. The

2 number of jack studs required at each end of the header shall be determined from Table 3.22F.

3 Tabulated spans are based on the lowest $F_b$ and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern PIne, and Spruce-Pine-Fir.

4 Tabulated spans assume 20F combination glulam with a minimum $F_{by}$ = 800 psi.

5 The number of full height studs required at each end of the header shall be determined in accordance with Table 3.23C.

## Table 3.23B Laterally Unsupported (Dropped) Header Spans for Exterior Non-Loadbearing Walls and Window Sill Plate Spans Resisting Wind Loads — Exposure B

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Maximum Header/Girder Spans for Common Lumber Species[1,2,3,4] | | | | | | | | | | | | | |
| **Size** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** |
| **1-2x4 (flat)** | 8 - 3 | 7 - 9 | 7 - 5 | 7 - 1 | 6 - 9 | 6 - 5 | 6 - 2 | 5 - 8 | 5 - 3 | 4 - 11 | 4 - 8 | 4 - 4 | 4 - 1 | 3 - 10 |
| **1-2x6 (flat)** | 12 - 4 | 11 - 8 | 11 - 1 | 10 - 7 | 10 - 1 | 9 - 8 | 9 - 3 | 8 - 6 | 7 - 11 | 7 - 5 | 6 - 11 | 6 - 6 | 6 - 2 | 5 - 8 |
| **2-2x4 (flat)** | 12 - 2 | 11 - 7 | 11 - 0 | 10 - 5 | 10 - 0 | 9 - 7 | 9 - 2 | 8 - 5 | 7 - 10 | 7 - 4 | 6 - 10 | 6 - 5 | 6 - 1 | 5 - 8 |
| **2-2x6 (flat)** | 16 - 0* | 16 - 0* | 16 - 0* | 15 - 8 | 14 - 11 | 14 - 4 | 13 - 8 | 12 - 8 | 11 - 9 | 11 - 0 | 10 - 3 | 9 - 8 | 9 - 2 | 8 - 5 |

1 Tabulated header spans shall be permitted to be divided by 0.96, for framing not located within 8 feet of building corners.

2 Tabulated header spans are based on 10 foot wall heights. For other wall heights, H, the tabulated header spans shall be divided by $(H/10)^{1/2}$.

3 Tabulated spans are based on the lowest $F_b$ and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir.

4 The number of full height studs required at each end of the header shall be determined in accordance with Table 3.23C.

* Maximum span limited to 16 ft.

## Table 3.23B Laterally Unsupported (Dropped) Header Spans for Exterior Non-Loadbearing Walls and Window Sill Plate Spans Resisting Wind Loads — Exposure C

| Wind Speed 3-second gust (mph) | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Maximum Header/Girder Spans for Common Lumber Species[1,2,3,4] | | | | | | | | | | | | | |
| **Size** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** | **(ft-in.)** |
| **1-2x4 (flat)** | 7 - 0 | 6 - 7 | 6 - 3 | 6 - 0 | 5 - 9 | 5 - 6 | 5 - 3 | 4 - 10 | 4 - 6 | 4 - 2 | 3 - 11 | 3 - 8 | 3 - 6 | 3 - 3 |
| **1-2x6 (flat)** | 10 - 5 | 9 - 11 | 9 - 5 | 9 - 0 | 8 - 7 | 8 - 2 | 7 - 10 | 7 - 3 | 6 - 9 | 6 - 3 | 5 - 11 | 5 - 6 | 5 - 3 | 4 - 10 |
| **2-2x4 (flat)** | 10 - 4 | 9 - 10 | 9 - 4 | 8 - 10 | 8 - 6 | 8 - 1 | 7 - 9 | 7 - 2 | 6 - 8 | 6 - 3 | 5 - 10 | 5 - 6 | 5 - 2 | 4 - 9 |
| **2-2x6 (flat)** | 15 - 6 | 14 - 8 | 13 - 11 | 13 - 4 | 12 - 8 | 12 - 2 | 11 - 8 | 10 - 9 | 10 - 0 | 9 - 4 | 8 - 9 | 8 - 3 | 7 - 9 | 7 - 2 |

1 Tabulated header spans shall be permitted to be divided by 0.96, for framing not located within 8 feet of building corners.

2 Tabulated header spans are based on 10 foot wall heights. For other wall heights, H, the tabulated header spans shall be divided by $(H/10)^{1/2}$.

3 Tabulated spans are based on the lowest $F_b$ and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir.

4 The number of full height studs required at each end of the header shall be determined in accordance with Table 3.23C.

## Table 3.23C Full Height Stud Requirements for Headers or Window Sill Plates in Exterior Walls Resisting Wind Loads

**Exposures B & C**

| Header Span (ft) | Wall Stud Spacing (in.) | | |
|---|---|---|---|
| | 12 | 16 | 24 |
| | Number of Full Height Stud Required at Each End of the Header[1] | | |
| **2** | 1 | 1 | 1 |
| **4** | 2 | 2 | 1 |
| **6** | 3 | 3 | 2 |
| **8** | 4 | 3 | 2 |
| **10** | 5 | 4 | 3 |
| **12** | 6 | 5 | 3 |
| **14** | 7 | 6 | 4 |
| **16** | 8 | 6 | 4 |
| **18** | 9 | 7 | 5 |
| **20** | 10 | 8 | 5 |

1 The number of full height studs required at each end of the header shall be permitted to be reduced in accordance with the requirements of Section 3.4.1.4.2 and Table 3.23D.

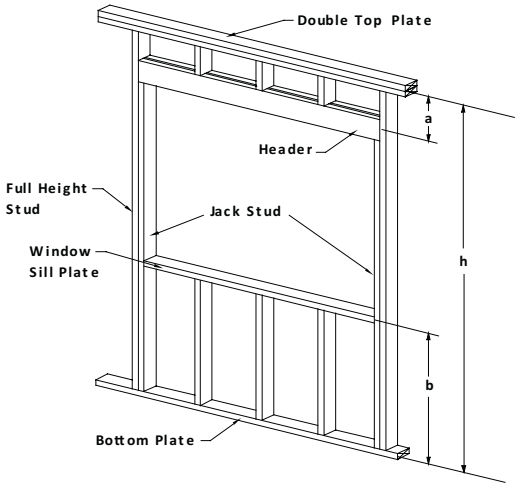
## Table 3.23D Reduced Full Height Stud Requirements for Headers or Window Sill Plates in Exterior Walls Resisting Wind Loads

# Exposures B & C

| Wall Stud Spacing (in.) | Header Span (ft) | Distance from Top Plate Down to Header (a) or Distance from Bottom Plate Up to Window Sill Plate (b) to Wall Height (x/h), where x is the larger of a or b | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| | | Number of Full Height Stud Required at Each End of the Header[1] | | | | | | | | | | |
| 12 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 4 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| | 6 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 |
| | 8 | 1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 1 |
| | 10 | 1 | 2 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 2 | 1 |
| | 12 | 1 | 3 | 4 | 6 | 6 | 6 | 6 | 6 | 4 | 3 | 1 |
| | 14 | 1 | 3 | 5 | 6 | 7 | 7 | 7 | 6 | 5 | 3 | 1 |
| | 16 | 1 | 3 | 6 | 7 | 8 | 8 | 8 | 7 | 6 | 3 | 1 |
| | 18 | 1 | 4 | 6 | 8 | 9 | 9 | 9 | 8 | 6 | 4 | 1 |
| | 20 | 1 | 4 | 7 | 9 | 10 | 10 | 10 | 9 | 7 | 4 | 1 |
| 16 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 4 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| | 6 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 1 | 1 |
| | 8 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 |
| | 10 | 1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 1 |
| | 12 | 1 | 2 | 3 | 4 | 5 | 5 | 5 | 4 | 3 | 2 | 1 |
| | 14 | 1 | 2 | 4 | 5 | 6 | 6 | 6 | 5 | 4 | 2 | 1 |
| | 16 | 1 | 3 | 4 | 6 | 6 | 6 | 6 | 6 | 4 | 3 | 1 |
| | 18 | 1 | 3 | 5 | 6 | 7 | 7 | 7 | 6 | 5 | 3 | 1 |
| | 20 | 1 | 3 | 5 | 7 | 8 | 8 | 8 | 7 | 5 | 3 | 1 |
| 24 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 6 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| | 8 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| | 10 | 1 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 1 |
| | 12 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 |
| | 14 | 1 | 2 | 3 | 3 | 4 | 4 | 4 | 3 | 3 | 2 | 1 |
| | 16 | 1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 1 |
| | 18 | 1 | 2 | 3 | 4 | 5 | 5 | 5 | 4 | 3 | 2 | 1 |
| | 20 | 1 | 2 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 2 | 1 |

1 The capacity of the connection of the top or bottom plate to each full height stud shall be equal to the unit lateral load (w) given on Table 3.5 times half of the header span (L/2) divided by the required number of full height studs (NFH) selected from 3.23D.

Top or Bottom Plate to Each Full Height Stud Connection = w*(L/2)/NFH

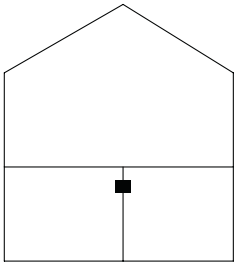


## Table 3.24A1 Laterally Unsupported (Dropped) Header Spans for Interior Loadbearing Walls

(Supporting One Center Bearing Floor)

Floor Live Load = 40 psf, $L/\Delta_{LL}$=360, Floor Assembly Dead Load = 10 psf

**Dropped Interior**



| Headers Supporting | Size | Building Width (ft) 12 | 24 | 36 |
|---|---|---|---|---|
| | | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[1,3,4,5] | | |
| One Floor Only (Center Bearing) | **1-2x6** | 4 - 0 | 2 - 10 | 2 - 4 |
| | **1-2x8** | 5 - 0 | 3 - 7 | 2 - 11 |
| | **1-2x10** | 5 - 10 | 4 - 3 | 3 - 6 |
| | **1-2x12** | 6 - 6 | 4 - 10 | 4 - 0 |
| | **2-2x4** | 4 - 0 | 2 - 10 | 2 - 4 |
| | **2-2x6** | 5 - 11 | 4 - 3 | 3 - 5 |
| | **2-2x8** | 7 - 1 | 5 - 2 | 4 - 4 |
| | **2-2x10** | 7 - 11 | 5 - 11 | 5 - 0 |
| | **2-2x12** | 8 - 6 | 6 - 7 | 5 - 7 |
| | **3-2x8** | 8 - 5 | 6 - 4 | 5 - 3 |
| | **3-2x10** | 9 - 3 | 7 - 1 | 6 - 0 |
| | **3-2x12** | 9 - 11 | 7 - 8 | 6 - 7 |
| | **4-2x8** | 9 - 5 | 7 - 2 | 6 - 0 |
| | **4-2x10** | 10 - 3 | 7 - 11 | 6 - 9 |
| | **4-2x12** | 11 - 0 | 8 - 7 | 7 - 4 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Timber Beams[2,3,4,5] | | |
| | **3.125x5.500** | 7 - 5 | 5 - 10 | 4 - 10 |
| | **3.125x6.875** | 9 - 3 | 7 - 4 | 6 - 0 |
| | **3.125x8.250** | 11 - 1 | 8 - 9 | 7 - 2 |
| | **3.125x9.625** | 12 - 11 | 10 - 2 | 8 - 4 |
| | **3.125x11.000** | 14 - 9 | 11 - 5 | 9 - 5 |
| | **3.125x12.375** | 16 - 7 | 12 - 7 | 10 - 6 |
| | **3.125x13.750** | 17 - 11 | 13 - 7 | 11 - 5 |
| | **3.125x15.125** | 18 - 9 | 14 - 5 | 12 - 2 |
| | **3.125x16.500** | 19 - 5 | 15 - 0 | 12 - 10 |
| | **3.125x17.875** | 20-0† | 15 - 7 | 13 - 4 |
| | **3.125x19.250** | 20-0† | 16 - 0 | 13 - 9 |
| | **3.125x20.625** | 20-0† | 16 - 5 | 14 - 2 |
| | **3.125x22.000** | 20-0† | 16 - 9 | 14 - 6 |
| | **3.125x23.375** | 20-0† | 17 - 1 | 14 - 9 |
| | **3.125x24.750** | 20-0† | 17 - 5 | 15 - 1 |
| | **5.125x5.500** | 8 - 8 | 6 - 11 | 6 - 0 |
| | **5.125x6.875** | 10 - 10 | 8 - 8 | 7 - 6 |
| | **5.125x8.250** | 13 - 1 | 10 - 4 | 9 - 1 |
| | **5.125x9.625** | 15 - 3 | 12 - 1 | 10 - 7 |
| | **5.125x11.000** | 17 - 5 | 13 - 10 | 12 - 1 |
| | **5.125x12.375** | 19 - 7 | 15 - 6 | 13 - 7 |
| | **5.125x13.750** | 20-0† | 17 - 3 | 15 - 1 |
| | **5.125x15.125** | 20-0† | 19 - 0 | 16 - 7 |
| | **5.125x16.5** | 20-0† | 20-0† | 18 - 1 |
| | **5.125x17.875** | 20-0† | 20-0† | 19 - 5 |

† Spans are limited to 20 feet in length.

1 Tabulated spans are based on the lowest $F_b$, $F_v$, and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir. For #3 Grade lumber, spans shall be multiplied by 0.75.

2 Tabulated spans assume 20F combination glulam with a minimum $F_{bx}$=2,000psi, $F_{vx}$=210psi, and E=1,500,000psi.

3 Tabulated spans assume headers supporting single span floor joists. For headers supporting continuous two span floor joists, tabulated spans shall be multiplied by 0.89.

4 The number of jack studs required at each end of the header shall be determined from Table 3.24C.

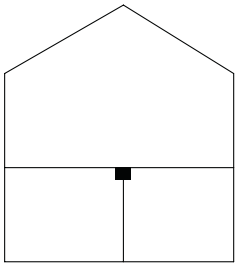
5 Spans checked for live load deflection only.

## Table 3.24A2 Laterally Supported (Raised) Header Spans for Interior Loadbearing Walls

(Supporting One Center Bearing Floor)

Floor Live Load = 40 psf, $L/\Delta_{LL}$=360, Floor Assembly Dead Load = 10 psf

**Raised Interior**



| Headers Supporting | Size | Building Width (ft) 12 | 24 | 36 |
|---|---|---|---|---|
| | | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[1,3,4,5] | | |
| One Floor Only (Center Bearing) | 1-2x6 | 4 - 1 | 2 - 11 | 2 - 4 |
| | 1-2x8 | 5 - 2 | 3 - 8 | 3 - 0 |
| | 1-2x10 | 6 - 2 | 4 - 4 | 3 - 7 |
| | 1-2x12 | 7 - 3 | 5 - 2 | 4 - 2 |
| | 2-2x4 | 4 - 1 | 2 - 10 | 2 - 4 |
| | 2-2x6 | 6 - 1 | 4 - 4 | 3 - 6 |
| | 2-2x8 | 7 - 9 | 5 - 5 | 4 - 5 |
| | 2-2x10 | 9 - 2 | 6 - 6 | 5 - 3 |
| | 2-2x12 | 10 - 9 | 7 - 7 | 6 - 3 |
| | 3-2x8 | 9 - 8 | 6 - 10 | 5 - 7 |
| | 3-2x10 | 11 - 5 | 8 - 1 | 6 - 7 |
| | 3-2x12 | 13 - 6 | 9 - 6 | 7 - 9 |
| | 4-2x8 | 11 - 2 | 7 - 11 | 6 - 5 |
| | 4-2x10 | 13 - 3 | 9 - 4 | 7 - 8 |
| | 4-2x12 | 15 - 7 | 11 - 0 | 9 - 0 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Timber Beams[2,3,4,5] | | |
| | 3.125x5.500 | 7 - 5 | 5 - 10 | 4 - 10 |
| | 3.125x6.875 | 9 - 3 | 7 - 4 | 6 - 0 |
| | 3.125x8.250 | 11 - 1 | 8 - 9 | 7 - 3 |
| | 3.125x9.625 | 12 - 11 | 10 - 3 | 8 - 5 |
| | 3.125x11.000 | 14 - 9 | 11 - 8 | 9 - 8 |
| | 3.125x12.375 | 16 - 7 | 13 - 2 | 10 - 10 |
| | 3.125x13.750 | 18 - 5 | 14 - 8 | 12 - 1 |
| | 3.125x15.125 | 20-0† | 16 - 1 | 13 - 3 |
| | 3.125x16.500 | 20-0† | 17 - 7 | 14 - 6 |
| | 3.125x17.875 | 20-0† | 19 - 0 | 15 - 8 |
| | 3.125x19.250 | 20-0† | 20-0† | 16 - 11 |
| | 3.125x20.625 | 20-0† | 20-0† | 18 - 1 |
| | 5.125x5.500 | 8 - 8 | 6 - 11 | 6 - 0 |
| | 5.125x6.875 | 10 - 10 | 8 - 8 | 7 - 6 |
| | 5.125x8.25 | 13 - 1 | 10 - 4 | 9 - 1 |
| | 5.125x9.625 | 15 - 3 | 12 - 1 | 10 - 7 |
| | 5.125x11.000 | 17 - 5 | 13 - 10 | 12 - 1 |
| | 5.125x12.375 | 19 - 7 | 15 - 6 | 13 - 7 |
| | 5.125x13.750 | 20-0† | 17 - 3 | 15 - 1 |
| | 5.125x15.125 | 20-0† | 19 - 0 | 16 - 7 |
| | 5.125x16.500 | 20-0† | 20-0† | 18 - 1 |
| | 5.125x17.875 | 20-0† | 20-0† | 19 - 7 |

† Spans are limited to 20 feet in length.

1 Tabulated spans are based on the lowest $F_b$, $F_v$, and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir. For #3 Grade lumber, spans shall be multiplied by 0.75.

2 Tabulated spans assume 20F combination glulam with a minimum $F_{bx}$=2,000psi, $F_{vx}$=210psi, and E=1,500,000psi.

3 Tabulated spans assume headers supporting single span floor joists. For headers supporting continuous two span floor joists, tabulated spans shall be multiplied by 0.89.

4 The number of jack studs required at each end of the header shall be determined from Table 3.24C.

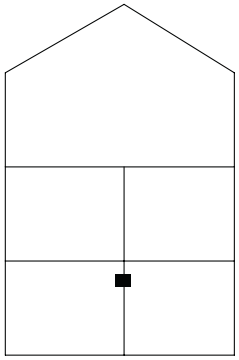
5 Spans checked for live load deflection only.

## Table 3.24B1 Laterally Unsupported (Dropped) Header Spans for Interior Loadbearing Walls

(Supporting Two Center Bearing Floors)

Floor Live Load = 40 psf, $L/\Delta_{LL}$=360, Floor Assembly Dead Load = 10 psf

**Dropped Interior**



| Headers Supporting | Size | Building Width (ft) 12 | 24 | 36 |
|---|---|---|---|---|
| | | Maximum Header/Girder Spans (ft-in.) for Common Lumber Species[1,3,4,5] | | |
| Two Floors Only (Center Bearing) | **1-2x6** | 2 - 7 | 1 - 11 | 1 - 7 |
| | **1-2x8** | 3 - 4 | 2 - 5 | 2 - 0 |
| | **1-2x10** | 3 - 10 | 2 - 11 | 2 - 5 |
| | **1-2x12** | 4 - 6 | 3 - 4 | 2 - 10 |
| | **2-2x4** | 2 - 7 | 1 - 11 | 1 - 7 |
| | **2-2x6** | 3 - 10 | 2 - 10 | 2 - 5 |
| | **2-2x8** | 4 - 9 | 3 - 7 | 3 - 0 |
| | **2-2x10** | 5 - 6 | 4 - 2 | 3 - 6 |
| | **2-2x12** | 6 - 1 | 4 - 9 | 4 - 1 |
| | **3-2x8** | 5 - 10 | 4 - 5 | 3 - 9 |
| | **3-2x10** | 6 - 7 | 5 - 1 | 4 - 4 |
| | **3-2x12** | 7 - 2 | 5 - 8 | 4 - 11 |
| | **4-2x8** | 6 - 7 | 5 - 1 | 4 - 3 |
| | **4-2x10** | 7 - 5 | 5 - 9 | 4 - 11 |
| | **4-2x12** | 8 - 0 | 6 - 4 | 5 - 6 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Timber Beams[2,3,4,5] | | |
| | **3.125x5.500** | 5 - 4 | 4 - 0 | 3 - 4 |
| | **3.125x6.875** | 6 - 8 | 5 - 0 | 4 - 1 |
| | **3.125x8.250** | 8 - 0 | 5 - 11 | 4 - 11 |
| | **3.125x9.625** | 9 - 3 | 6 - 11 | 5 - 9 |
| | **3.125x11.000** | 10 - 6 | 7 - 10 | 6 - 6 |
| | **3.125x12.375** | 11 - 7 | 8 - 9 | 7 - 3 |
| | **3.125x13.750** | 12 - 7 | 9 - 7 | 8 - 0 |
| | **3.125x15.125** | 13 - 4 | 10 - 4 | 8 - 8 |
| | **3.125x16.500** | 14 - 0 | 10 - 11 | 9 - 4 |
| | **3.125x17.875** | 14 - 6 | 11 - 5 | 9 - 10 |
| | **3.125x19.250** | 14 - 11 | 11 - 10 | 10 - 3 |
| | **3.125x20.625** | 15 - 4 | 12 - 3 | 10 - 8 |
| | **3.125x22.000** | 15 - 8 | 12 - 7 | 11 - 0 |
| | **3.125x23.375** | 16 - 0 | 12 - 10 | 11 - 3 |
| | **3.125x24.750** | 16 - 4 | 13 - 2 | 11 - 7 |
| | **5.125x5.500** | 6 - 11 | 5 - 1 | 4 - 3 |
| | **5.125x6.875** | 8 - 7 | 6 - 4 | 5 - 3 |
| | **5.125x8.250** | 10 - 4 | 7 - 8 | 6 - 4 |
| | **5.125x9.625** | 12 - 0 | 8 - 11 | 7 - 5 |
| | **5.125x11.000** | 13 - 8 | 10 - 2 | 8 - 5 |
| | **5.125x12.375** | 15 - 4 | 11 - 5 | 9 - 6 |
| | **5.125x13.750** | 17 - 0 | 12 - 7 | 10 - 6 |
| | **5.125x15.125** | 18 - 7 | 13 - 10 | 11 - 6 |
| | **5.125x16.5** | 20-0† | 15 - 0 | 12 - 6 |
| | **5.125x17.875** | 20-0† | 16 - 2 | 13 - 6 |
| | **5.125x19.250** | 20-0† | 17 - 3 | 14 - 5 |
| | **5.125x20.625** | 20-0† | 18 - 4 | 15 - 5 |
| | **5.125x22.000** | 20-0† | 19 - 4 | 16 - 3 |
| | **5.125x23.375** | 20-0† | 20-0† | 17 - 1 |
| | **5.125x24.75** | 20-0† | 20-0† | 17 - 10 |

† Spans are limited to 20 feet in length.

1 Tabulated spans are based on the lowest $F_b$, $F_v$, and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir. For #3 Grade lumber, spans shall be multiplied by 0.75.

2 Tabulated spans assume 20F combination glulam with a minimum $F_{bx}$=2,000psi, $F_{vx}$=210psi, and E=1,500,000psi.

3 Tabulated spans assume headers supporting single span floor joists. For headers supporting continuous two span floor joists, tabulated spans shall be multiplied by 0.89.

4 The number of jack studs required at each end of the header shall be determined from Table 3.24C.

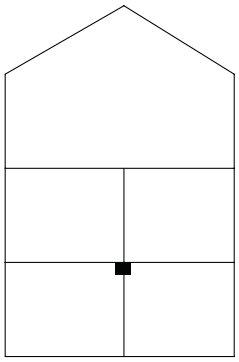
5 Spans checked for live load deflection only.

## Table 3.24B2 Laterally Supported (Raised) Header Spans for Interior Loadbearing Walls

(Supporting Two Center Bearing Floors)

Floor Live Load = 40 psf, $L/\Delta_{LL}$=360, Floor Assembly Dead Load = 10 psf

**Raised Interior**



| Headers Supporting | Size | Building Width (ft) 12 | 24 | 36 |
|---|---|---|---|---|
| | | Maximum Header/Girder Spans (ft.-in.) for Common Lumber Species[1,3,4,5] | | |
| Two Floors Only (Center Bearing) | 1-2x6 | 2 - 8 | 1 - 11 | 1 - 7 |
| | 1-2x8 | 3 - 4 | 2 - 6 | 2 - 1 |
| | 1-2x10 | 4 - 0 | 2 - 11 | 2 - 5 |
| | 1-2x12 | 4 - 8 | 3 - 6 | 2 - 10 |
| | 2-2x4 | 2 - 7 | 1 - 11 | 1 - 7 |
| | 2-2x6 | 3 - 11 | 2 - 11 | 2 - 5 |
| | 2-2x8 | 5 - 0 | 3 - 8 | 3 - 1 |
| | 2-2x10 | 5 - 11 | 4 - 4 | 3 - 7 |
| | 2-2x12 | 6 - 11 | 5 - 2 | 4 - 3 |
| | 3-2x8 | 6 - 3 | 4 - 7 | 3 - 10 |
| | 3-2x10 | 7 - 5 | 5 - 6 | 4 - 6 |
| | 3-2x12 | 8 - 8 | 6 - 5 | 5 - 4 |
| | 4-2x8 | 7 - 2 | 5 - 4 | 4 - 5 |
| | 4-2x10 | 8 - 6 | 6 - 4 | 5 - 3 |
| | 4-2x12 | 10 - 1 | 7 - 5 | 6 - 2 |
| | Size | Maximum Header/Girder Spans (ft-in.) for Glued Laminated Timber Beams[2,3,4,5] | | |
| | 3.125x5.500 | 5 - 5 | 4 - 0 | 3 - 4 |
| | 3.125x6.875 | 6 - 9 | 5 - 0 | 4 - 2 |
| | 3.125x8.250 | 8 - 1 | 6 - 0 | 5 - 0 |
| | 3.125x9.625 | 9 - 5 | 7 - 0 | 5 - 9 |
| | 3.125x11.000 | 10 - 10 | 8 - 0 | 6 - 7 |
| | 3.125x12.375 | 12 - 2 | 9 - 0 | 7 - 5 |
| | 3.125x13.750 | 13 - 6 | 10 - 0 | 8 - 3 |
| | 3.125x15.125 | 14 - 10 | 11 - 0 | 9 - 1 |
| | 3.125x16.500 | 16 - 2 | 12 - 0 | 9 - 11 |
| | 3.125x17.875 | 17 - 7 | 13 - 0 | 10 - 9 |
| | 3.125x19.250 | 18 - 11 | 13 - 11 | 11 - 7 |
| | 3.125x20.625 | 20-0† | 14 - 11 | 12 - 5 |
| | 3.125x22.000 | 20-0† | 15 - 11 | 13 - 3 |
| | 3.125x23.375 | 20-0† | 16 - 11 | 14 - 1 |
| | 3.125x24.750 | 20-0† | 17 - 11 | 14 - 11 |
| | 5.125x5.500 | 6 - 11 | 5 - 1 | 4 - 3 |
| | 5.125x6.875 | 8 - 8 | 6 - 5 | 5 - 4 |
| | 5.125x8.25 | 10 - 4 | 7 - 8 | 6 - 4 |
| | 5.125x9.625 | 12 - 1 | 8 - 11 | 7 - 5 |
| | 5.125x11.000 | 13 - 10 | 10 - 3 | 8 - 6 |
| | 5.125x12.375 | 15 - 6 | 11 - 6 | 9 - 6 |
| | 5.125x13.750 | 17 - 3 | 12 - 9 | 10 - 7 |
| | 5.125x15.125 | 18 - 11 | 14 - 1 | 11 - 8 |
| | 5.125x16.500 | 20-0† | 15 - 4 | 12 - 8 |
| | 5.125x17.875 | 20-0† | 16 - 6 | 13 - 9 |
| | 5.125x19.250 | 20-0† | 17 - 7 | 14 - 9 |
| | 5.125x20.625 | 20-0† | 18 - 9 | 15 - 8 |
| | 5.125x22.000 | 20-0† | 19 - 10 | 16 - 8 |
| | 5.125x23.375 | 20-0† | 20-0† | 17 - 7 |

† Spans are limited to 20 feet in length.

1 Tabulated spans are based on the lowest $F_b$, $F_v$, and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir. For #3 Grade lumber, spans shall be multiplied by 0.75.

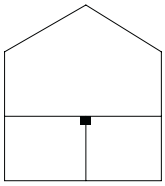
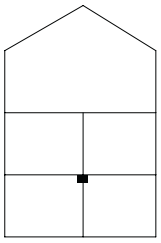
2 Tabulated spans assume 20F combination glulam with a minimum $F_{bx}$=2,000psi, $F_{vx}$=210psi, and E=1,500,000psi.

3 Tabulated spans assume headers supporting single span floor joists. For headers supporting continuous two span floor joists, tabulated spans shall be multiplied by 0.89.

4 The number of jack studs required at each end of the header shall be determined from Table 3.24C.

5 Spans checked for live load deflection only.

## Table 3.24C Jack Stud Requirements for Headers in Interior Loadbearing Walls

| | | Roof Span (ft) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12 | | | | 24 | | | | 36 | | | |
| | | Header Width | | | | | | | | | | | |
| | | 3" (2-2x) | 4.5" (3-2x) | 5" | 6" (4-2x) | 3" (2-2x) | 4.5" (3-2x) | 5" | 6" (4-2x) | 3" (2-2x) | 4.5" (3-2x) | 5" | 6" (4-2x) |
| Header Supporting | Header Span (ft) | Number of Jack Studs Required at Each End of the Header[1,2] | | | | | | | | | | | |
| One Floor Only (Center Bearing)  | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| | 8 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 1 |
| | 10 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 3 | 2 | 2 | 2 |
| | 12 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 |
| | 14 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 4 | 3 | 3 | 2 |
| | 16 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 4 | 3 | 3 | 2 |
| | 18 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 5 | 3 | 3 | 3 |
| | 20 | 2 | 2 | 1 | 1 | 4 | 3 | 2 | 2 | 5 | 4 | 3 | 3 |
| Two Floors (Center Bearing)  | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 |
| | 6 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 4 | 3 | 2 | 2 |
| | 8 | 2 | 2 | 1 | 1 | 3 | 2 | 2 | 2 | 5 | 3 | 3 | 3 |
| | 10 | 2 | 2 | 2 | 1 | 4 | 3 | 3 | 2 | 6 | 4 | 4 | 3 |
| | 12 | 3 | 2 | 2 | 2 | 5 | 3 | 3 | 3 | 7 | 5 | 4 | 4 |
| | 14 | 3 | 2 | 2 | 2 | 6 | 4 | 4 | 3 | 8 | 5 | 5 | 4 |
| | 16 | 4 | 3 | 2 | 2 | 6 | 4 | 4 | 3 | 9 | 6 | 6 | 5 |
| | 18 | 4 | 3 | 3 | 2 | 7 | 5 | 4 | 4 | 10 | 7 | 6 | 5 |
| | 20 | 4 | 3 | 3 | 2 | 8 | 5 | 5 | 4 | 11 | 8 | 7 | 6 |

1 Where the number of jack studs equals 1, the header shall be permitted to be supported by a framing anchor attached to the full-height wall stud.

2 An equivalent number of full height studs are permitted to replace jack studs, when adequate gravity connections are provided.

## Table 3.25A1 Ceiling Joist Spans for Common Lumber Species

(Uninhabitable Attics Without Storage) Live Load = 10 psf, $L/\Delta_{LL}$=240, Dead Load = 5 psf, Flexible Finish (including gypsum board)

**LL = 10 psf**
**$L/\Delta_{LL}$ = 240**

| | | | 2x4 | 2x6 | 2x8 | 2x10 |
|---|---|---|---|---|---|---|
| | | | Maximum Ceiling Joist Spans[1,2] | | | |
| Joist Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 13 - 2 | 20 - 8 | 26 - 0 | 26 - 0 |
| | Douglas Fir-Larch | No.1 | 12 - 8 | 19 - 11 | 26 - 0 | 26 - 0 |
| | Douglas Fir-Larch | No.2 | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0 |
| | Douglas Fir-Larch | No.3 | 11 - 1 | 16 - 3 | 20 - 7 | 25 - 2 |
| | Hem-Fir | SS | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0 |
| | Hem-Fir | No.1 | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0 |
| | Hem-Fir | No.2 | 11 - 7 | 18 - 2 | 24 - 0 | 26 - 0 |
| | Hem-Fir | No.3 | 10 - 10 | 15 - 10 | 20 - 1 | 24 - 6 |
| | Southern Pine | SS | 12 - 11 | 20 - 3 | 26 - 0 | 26 - 0 |
| | Southern Pine | No.1 | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0 |
| | Southern Pine | No.2 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0 |
| | Southern Pine | No.3 | 10 - 1 | 14 - 11 | 18 - 9 | 22 - 9 |
| | Spruce-Pine Fir | SS | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0 |
| | Spruce-Pine Fir | No.1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0 |
| | Spruce-Pine Fir | No.2 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0 |
| | Spruce-Pine Fir | No.3 | 10 - 10 | 15 - 10 | 20 - 1 | 24 - 6 |
| 16 | Douglas Fir-Larch | SS | 11 - 11 | 18 - 9 | 24 - 8 | 26 - 0 |
| | Douglas Fir-Larch | No.1 | 11 - 6 | 18 - 1 | 23 - 10 | 26 - 0 |
| | Douglas Fir-Larch | No.2 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0 |
| | Douglas Fir-Larch | No.3 | 9 - 7 | 14 - 1 | 17 - 10 | 21 - 9 |
| | Hem-Fir | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0 |
| | Hem-Fir | No.1 | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0 |
| | Hem-Fir | No.2 | 10 - 6 | 16 - 6 | 21 - 9 | 26 - 0 |
| | Hem-Fir | No.3 | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 |
| | Southern Pine | SS | 11 - 9 | 18 - 5 | 24 - 3 | 26 - 0 |
| | Southern Pine | No.1 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0 |
| | Southern Pine | No.2 | 10 - 9 | 16 - 11 | 21 - 7 | 25 - 7 |
| | Southern Pine | No.3 | 8 - 9 | 12 - 11 | 16 - 3 | 19 - 9 |
| | Spruce-Pine Fir | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0 |
| | Spruce-Pine Fir | No.1 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0 |
| | Spruce-Pine Fir | No.2 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0 |
| | Spruce-Pine Fir | No.3 | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 |
| 19.2 | Douglas Fir-Larch | SS | 11 - 3 | 17 - 8 | 23 - 3 | 26 - 0 |
| | Douglas Fir-Larch | No.1 | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0 |
| | Douglas Fir-Larch | No.2 | 10 - 7 | 16 - 8 | 21 - 4 | 26 - 0 |
| | Douglas Fir-Larch | No.3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 |
| | Hem-Fir | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0 |
| | Hem-Fir | No.1 | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0 |
| | Hem-Fir | No.2 | 9 - 11 | 15 - 7 | 20 - 6 | 25 - 3 |
| | Hem-Fir | No.3 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 |
| | Southern Pine | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0 |
| | Southern Pine | No.1 | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0 |
| | Southern Pine | No.2 | 10 - 2 | 15 - 7 | 19 - 8 | 23 - 5 |
| | Southern Pine | No.3 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 0 |
| | Spruce-Pine Fir | SS | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0 |
| | Spruce-Pine Fir | No.1 | 10 - 2 | 15 - 11 | 21 - 0 | 25 - 8 |
| | Spruce-Pine Fir | No.2 | 10 - 2 | 15 - 11 | 21 - 0 | 25 - 8 |
| | Spruce-Pine Fir | No.3 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 |
| 24 | Douglas Fir-Larch | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0 |
| | Douglas Fir-Larch | No.1 | 10 - 0 | 15 - 9 | 20 - 1 | 24 - 6 |
| | Douglas Fir-Larch | No.2 | 9 - 10 | 15 - 0 | 19 - 1 | 23 - 3 |
| | Douglas Fir-Larch | No.3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 |
| | Hem-Fir | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0 |
| | Hem-Fir | No.1 | 9 - 8 | 15 - 2 | 19 - 10 | 24 - 3 |
| | Hem-Fir | No.2 | 9 - 2 | 14 - 5 | 18 - 6 | 22 - 7 |
| | Hem-Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |
| | Southern Pine | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0 |
| | Southern Pine | No.1 | 9 - 10 | 15 - 6 | 20 - 5 | 23 - 11 |
| | Southern Pine | No.2 | 9 - 3 | 13 - 11 | 17 - 7 | 20 - 11 |
| | Southern Pine | No.3 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 1 |
| | Spruce-Pine Fir | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 |
| | Spruce-Pine Fir | No.1 | 9 - 5 | 14 - 9 | 18 - 9 | 22 - 11 |
| | Spruce-Pine Fir | No.2 | 9 - 5 | 14 - 9 | 18 - 9 | 22 - 11 |
| | Spruce-Pine Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |

1 Bracing shall be provided in accordance with 3.3.1.4.

2 Spans checked for live load deflection only.

NOTE: Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

## Table 3.25A2 Ceiling Joist Spans for Common Lumber Species

(Uninhabitable Attics Without Storage) Live Load = 10 psf, $L/\Delta_{LL}$=360, Dead Load = 5 psf, Brittle Finish (including plaster and stucco)

**LL = 10 psf**
**$L/\Delta_{LL}$ = 360**

| | | | 2x4 | 2x6 | 2x8 | 2x10 |
|---|---|---|---|---|---|---|
| | | | Maximum Ceiling Joist Spans[1,2] | | | |
| Joist Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 11 - 6 | 18 - 0 | 23 - 9 | 26 - 0 |
| | Douglas Fir-Larch | No.1 | 11 - 1 | 17 - 4 | 22 - 11 | 26 - 0 |
| | Douglas Fir-Larch | No.2 | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0 |
| | Douglas Fir-Larch | No.3 | 10 - 4 | 16 - 3 | 20 - 7 | 25 - 2 |
| | Hem-Fir | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0 |
| | Hem-Fir | No.1 | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0 |
| | Hem-Fir | No.2 | 10 - 1 | 15 - 11 | 20 - 11 | 26 - 0 |
| | Hem-Fir | No.3 | 9 - 10 | 15 - 6 | 20 - 1 | 24 - 6 |
| | Southern Pine | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0 |
| | Southern Pine | No.1 | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0 |
| | Southern Pine | No.2 | 10 - 4 | 16 - 3 | 21 - 5 | 26 - 0 |
| | Southern Pine | No.3 | 10 - 1 | 14 - 11 | 18 - 9 | 22 - 9 |
| | Spruce-Pine Fir | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0 |
| | Spruce-Pine Fir | No.1 | 10 - 4 | 16 - 3 | 21 - 5 | 26 - 0 |
| | Spruce-Pine Fir | No.2 | 10 - 4 | 16 - 3 | 21 - 5 | 26 - 0 |
| | Spruce-Pine Fir | No.3 | 9 - 10 | 15 - 6 | 20 - 1 | 24 - 6 |
| 16 | Douglas Fir-Larch | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0 |
| | Douglas Fir-Larch | No.1 | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0 |
| | Douglas Fir-Larch | No.2 | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0 |
| | Douglas Fir-Larch | No.3 | 9 - 5 | 14 - 1 | 17 - 10 | 21 - 9 |
| | Hem-Fir | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0 |
| | Hem-Fir | No.1 | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 |
| | Hem-Fir | No.2 | 9 - 2 | 14 - 5 | 19 - 0 | 24 - 3 |
| | Hem-Fir | No.3 | 8 - 11 | 13 - 9 | 17 - 5 | 21 - 3 |
| | Southern Pine | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0 |
| | Southern Pine | No.1 | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0 |
| | Southern Pine | No.2 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 |
| | Southern Pine | No.3 | 8 - 9 | 12 - 11 | 16 - 3 | 19 - 9 |
| | Spruce-Pine Fir | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 |
| | Spruce-Pine Fir | No.1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 |
| | Spruce-Pine Fir | No.2 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 |
| | Spruce-Pine Fir | No.3 | 8 - 11 | 13 - 9 | 17 - 5 | 21 - 3 |
| 19.2 | Douglas Fir-Larch | SS | 9 - 10 | 15 - 5 | 20 - 4 | 25 - 11 |
| | Douglas Fir-Larch | No.1 | 9 - 5 | 14 - 10 | 19 - 7 | 25 - 0 |
| | Douglas Fir-Larch | No.2 | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 6 |
| | Douglas Fir-Larch | No.3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 |
| | Hem-Fir | SS | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 6 |
| | Hem-Fir | No.1 | 9 - 1 | 14 - 3 | 18 - 9 | 23 - 11 |
| | Hem-Fir | No.2 | 8 - 8 | 13 - 7 | 17 - 11 | 22 - 10 |
| | Hem-Fir | No.3 | 8 - 5 | 12 - 6 | 15 - 10 | 19 - 5 |
| | Southern Pine | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 |
| | Southern Pine | No.1 | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 6 |
| | Southern Pine | No.2 | 8 - 10 | 13 - 11 | 18 - 4 | 23 - 5 |
| | Southern Pine | No.3 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 0 |
| | Spruce-Pine Fir | SS | 9 - 1 | 14 - 3 | 18 - 9 | 23 - 11 |
| | Spruce-Pine Fir | No.1 | 8 - 10 | 13 - 11 | 18 - 4 | 23 - 5 |
| | Spruce-Pine Fir | No.2 | 8 - 10 | 13 - 11 | 18 - 4 | 23 - 5 |
| | Spruce-Pine Fir | No.3 | 8 - 5 | 12 - 6 | 15 - 10 | 19 - 5 |
| 24 | Douglas Fir-Larch | SS | 9 - 1 | 14 - 4 | 18 - 10 | 24 - 1 |
| | Douglas Fir-Larch | No.1 | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 |
| | Douglas Fir-Larch | No.2 | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 |
| | Douglas Fir-Larch | No.3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 |
| | Hem-Fir | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 |
| | Hem-Fir | No.1 | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 |
| | Hem-Fir | No.2 | 8 - 0 | 12 - 7 | 16 - 7 | 21 - 2 |
| | Hem-Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |
| | Southern Pine | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 |
| | Southern Pine | No.1 | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 |
| | Southern Pine | No.2 | 8 - 3 | 12 - 11 | 17 - 0 | 20 - 11 |
| | Southern Pine | No.3 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 1 |
| | Spruce-Pine Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 |
| | Spruce-Pine Fir | No.1 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 |
| | Spruce-Pine Fir | No.2 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 |
| | Spruce-Pine Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |

1 Bracing shall be provided in accordance with 3.3.1.4.

2 Spans checked for live load deflection only.

NOTE: Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

## Table 3.25B1 Ceiling Joist Spans for Common Lumber Species

(Uninhabitable Attics With Limited Storage) Live Load = 20 psf, $L/\Delta_{LL}$=240, Dead Load = 10 psf, Flexible Finish (including gypsum board)

**LL = 20 psf**
**$L/\Delta_{LL}$ = 240**

| Joist Spacing (in.) | Species | Grade | 2x4 (ft-in.) | 2x6 (ft-in.) | 2x8 (ft-in.) | 2x10 (ft-in.) |
|---|---|---|---|---|---|---|
| | | | Maximum Ceiling Joist Spans[1,2] | | | |
| 12 | Douglas Fir-Larch | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0 |
| | Douglas Fir-Larch | No.1 | 10 - 0 | 15 - 9 | 20 - 1 | 24 - 6 |
| | Douglas Fir-Larch | No.2 | 9 - 10 | 15 - 0 | 19 - 1 | 23 - 3 |
| | Douglas Fir-Larch | No.3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 |
| | Hem-Fir | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0 |
| | Hem-Fir | No.1 | 9 - 8 | 15 - 2 | 19 - 10 | 24 - 3 |
| | Hem-Fir | No.2 | 9 - 2 | 14 - 5 | 18 - 6 | 22 - 7 |
| | Hem-Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |
| | Southern Pine | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0 |
| | Southern Pine | No.1 | 9 - 10 | 15 - 6 | 20 - 5 | 23 - 11 |
| | Southern Pine | No.2 | 9 - 3 | 13 - 11 | 17 - 7 | 20 - 11 |
| | Southern Pine | No.3 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 1 |
| | Spruce-Pine Fir | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 |
| | Spruce-Pine Fir | No.1 | 9 - 5 | 14 - 9 | 18 - 9 | 22 - 11 |
| | Spruce-Pine Fir | No.2 | 9 - 5 | 14 - 9 | 18 - 9 | 22 - 11 |
| | Spruce-Pine Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |
| 16 | Douglas Fir-Larch | SS | 9 - 6 | 14 - 11 | 19 - 7 | 25 - 0 |
| | Douglas Fir-Larch | No.1 | 9 - 1 | 13 - 9 | 17 - 5 | 21 - 3 |
| | Douglas Fir-Larch | No.2 | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 2 |
| | Douglas Fir-Larch | No.3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 |
| | Hem-Fir | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 |
| | Hem-Fir | No.1 | 8 - 9 | 13 - 7 | 17 - 2 | 21 - 0 |
| | Hem-Fir | No.2 | 8 - 4 | 12 - 8 | 16 - 0 | 19 - 7 |
| | Hem-Fir | No.3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 |
| | Southern Pine | SS | 9 - 4 | 14 - 7 | 19 - 3 | 24 - 7 |
| | Southern Pine | No.1 | 8 - 11 | 14 - 0 | 17 - 9 | 20 - 9 |
| | Southern Pine | No.2 | 8 - 0 | 12 - 0 | 15 - 3 | 18 - 1 |
| | Southern Pine | No.3 | 6 - 2 | 9 - 2 | 11 - 6 | 13 - 11 |
| | Spruce-Pine Fir | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 1 |
| | Spruce-Pine Fir | No.1 | 8 - 7 | 12 - 10 | 16 - 3 | 19 - 10 |
| | Spruce-Pine Fir | No.2 | 8 - 7 | 12 - 10 | 16 - 3 | 19 - 10 |
| | Spruce-Pine Fir | No.3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 |
| 19.2 | Douglas Fir-Larch | SS | 8 - 11 | 14 - 0 | 18 - 5 | 23 - 7 |
| | Douglas Fir-Larch | No.1 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 |
| | Douglas Fir-Larch | No.2 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 |
| | Douglas Fir-Larch | No.3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 |
| | Hem-Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 |
| | Hem-Fir | No.1 | 8 - 3 | 12 - 4 | 15 - 8 | 19 - 2 |
| | Hem-Fir | No.2 | 7 - 10 | 11 - 7 | 14 - 8 | 17 - 10 |
| | Hem-Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 |
| | Southern Pine | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 1 |
| | Southern Pine | No.1 | 8 - 5 | 12 - 9 | 16 - 2 | 18 - 11 |
| | Southern Pine | No.2 | 7 - 4 | 11 - 0 | 13 - 11 | 16 - 6 |
| | Southern Pine | No.3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 9 |
| | Spruce-Pine Fir | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 8 |
| | Spruce-Pine Fir | No.1 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 2 |
| | Spruce-Pine Fir | No.2 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 2 |
| | Spruce-Pine Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 |
| 24 | Douglas Fir-Larch | SS | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 3 |
| | Douglas Fir-Larch | No.1 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |
| | Douglas Fir-Larch | No.2 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 5 |
| | Douglas Fir-Larch | No.3 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 |
| | Hem-Fir | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 6 |
| | Hem-Fir | No.1 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 1 |
| | Hem-Fir | No.2 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 |
| | Hem-Fir | No.3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 |
| | Southern Pine | SS | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 |
| | Southern Pine | No.1 | 7 - 8 | 11 - 5 | 14 - 6 | 16 - 11 |
| | Southern Pine | No.2 | 6 - 7 | 9 - 10 | 12 - 6 | 14 - 9 |
| | Southern Pine | No.3 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 5 |
| | Spruce-Pine Fir | SS | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 5 |
| | Spruce-Pine Fir | No.1 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 3 |
| | Spruce-Pine Fir | No.2 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 3 |
| | Spruce-Pine Fir | No.3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 |

1 Bracing shall be provided in accordance with 3.3.1.4.

2 Spans checked for live load deflection only.

NOTE: Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

## Table 3.25B2 Ceiling Joist Spans for Common Lumber Species

(Uninhabitable Attics With Limited Storage) Live Load = 20 psf, $L/\Delta_{LL}$=360, Dead Load = 10 psf, Brittle Finish (including plaster and stucco)

**LL = 20 psf**
**$L/\Delta_{LL}$ = 360**

| | | | Dead Load = 10 psf | | | |
|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 |
| | | | Maximum Ceiling Joist Spans[1,2] | | | |
| Joist Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 9 - 1 | 14 - 4 | 18 - 10 | 24 - 1 |
| | Douglas Fir-Larch | No.1 | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 |
| | Douglas Fir-Larch | No.2 | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 |
| | Douglas Fir-Larch | No.3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 |
| | Hem-Fir | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 |
| | Hem-Fir | No.1 | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 |
| | Hem-Fir | No.2 | 8 - 0 | 12 - 7 | 16 - 7 | 21 - 2 |
| | Hem-Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |
| | Southern Pine | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 |
| | Southern Pine | No.1 | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 |
| | Southern Pine | No.2 | 8 - 3 | 12 - 11 | 17 - 0 | 20 - 11 |
| | Southern Pine | No.3 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 1 |
| | Spruce-Pine Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 |
| | Spruce-Pine Fir | No.1 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 |
| | Spruce-Pine Fir | No.2 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 |
| | Spruce-Pine Fir | No.3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 |
| 16 | Douglas Fir-Larch | SS | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 10 |
| | Douglas Fir-Larch | No.1 | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 |
| | Douglas Fir-Larch | No.2 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 2 |
| | Douglas Fir-Larch | No.3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 |
| | Hem-Fir | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 |
| | Hem-Fir | No.1 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 |
| | Hem-Fir | No.2 | 7 - 3 | 11 - 5 | 15 - 1 | 19 - 3 |
| | Hem-Fir | No.3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 |
| | Southern Pine | SS | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 |
| | Southern Pine | No.1 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 |
| | Southern Pine | No.2 | 7 - 6 | 11 - 9 | 15 - 3 | 18 - 1 |
| | Southern Pine | No.3 | 6 - 2 | 9 - 2 | 11 - 6 | 13 - 11 |
| | Spruce-Pine Fir | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 |
| | Spruce-Pine Fir | No.1 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 9 |
| | Spruce-Pine Fir | No.2 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 9 |
| | Spruce-Pine Fir | No.3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 |
| 19.2 | Douglas Fir-Larch | SS | 7 - 9 | 12 - 3 | 16 - 1 | 20 - 7 |
| | Douglas Fir-Larch | No.1 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 5 |
| | Douglas Fir-Larch | No.2 | 7 - 4 | 11 - 7 | 15 - 1 | 18 - 5 |
| | Douglas Fir-Larch | No.3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 |
| | Hem-Fir | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 |
| | Hem-Fir | No.1 | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 |
| | Hem-Fir | No.2 | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 10 |
| | Hem-Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 |
| | Southern Pine | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 |
| | Southern Pine | No.1 | 7 - 4 | 11 - 7 | 15 - 3 | 18 - 11 |
| | Southern Pine | No.2 | 7 - 0 | 11 - 0 | 13 - 11 | 16 - 6 |
| | Southern Pine | No.3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 9 |
| | Spruce-Pine Fir | SS | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 |
| | Spruce-Pine Fir | No.1 | 7 - 0 | 11 - 1 | 14 - 7 | 18 - 2 |
| | Spruce-Pine Fir | No.2 | 7 - 0 | 11 - 1 | 14 - 7 | 18 - 2 |
| | Spruce-Pine Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 |
| 24 | Douglas Fir-Larch | SS | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 |
| | Douglas Fir-Larch | No.1 | 7 - 0 | 10 - 11 | 14 - 2 | 17 - 4 |
| | Douglas Fir-Larch | No.2 | 6 - 10 | 10 - 8 | 13 - 6 | 16 - 5 |
| | Douglas Fir-Larch | No.3 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 |
| | Hem-Fir | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 |
| | Hem-Fir | No.1 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 1 |
| | Hem-Fir | No.2 | 6 - 4 | 10 - 0 | 13 - 1 | 16 - 0 |
| | Hem-Fir | No.3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 |
| | Southern Pine | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 |
| | Southern Pine | No.1 | 6 - 10 | 10 - 9 | 14 - 2 | 16 - 11 |
| | Southern Pine | No.2 | 6 - 6 | 9 - 10 | 12 - 6 | 14 - 9 |
| | Southern Pine | No.3 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 5 |
| | Spruce-Pine Fir | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 |
| | Spruce-Pine Fir | No.1 | 6 - 6 | 10 - 3 | 13 - 3 | 16 - 3 |
| | Spruce-Pine Fir | No.2 | 6 - 6 | 10 - 3 | 13 - 3 | 16 - 3 |
| | Spruce-Pine Fir | No.3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 |

1 Bracing shall be provided in accordance with 3.3.1.4.

2 Spans checked for live load deflection only.

NOTE: Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

## Table 3.26A Rafter Spans for Common Lumber Species

(Ceiling Not Attached to Rafters) Live Load = 20 psf, $L/\Delta_{LL} = 180$

**LL = 20 psf**
**$L/\Delta_{LL} = 180$**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[1,2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 11 - 6 | 18 - 0 | 23 - 9 | 26-0† | 26-0† | 11 - 6 | 18 - 0 | 23 - 9 | 26-0† | 26-0† |
| | Douglas Fir-Larch | No.1 | 11 - 1 | 17 - 4 | 22 - 5 | 26-0† | 26-0† | 10 - 6 | 15 - 4 | 19 - 5 | 23 - 9 | 26-0† |
| | Douglas Fir-Larch | No.2 | 10 - 10 | 16 - 10 | 21 - 4 | 26-0† | 26-0† | 9 - 11 | 14 - 7 | 18 - 5 | 22 - 6 | 26-0† |
| | Douglas Fir-Larch | No.3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | Hem-Fir | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26-0† | 26-0† | 10 - 10 | 17 - 0 | 22 - 5 | 26-0† | 26-0† |
| | Hem-Fir | No.1 | 10 - 7 | 16 - 8 | 21 - 11 | 26-0† | 26-0† | 10 - 4 | 15 - 2 | 19 - 2 | 23 - 5 | 26-0† |
| | Hem-Fir | No.2 | 10 - 1 | 15 - 11 | 20 - 8 | 25 - 3 | 26-0† | 9 - 8 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | Hem-Fir | No.3 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | Southern Pine | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26-0† | 26-0† | 11 - 3 | 17 - 8 | 23 - 4 | 26-0† | 26-0† |
| | Southern Pine | No.1 | 10 - 10 | 17 - 0 | 22 - 5 | 26-0† | 26-0† | 10 - 6 | 15 - 8 | 19 - 10 | 23 - 2 | 26-0† |
| | Southern Pine | No.2 | 10 - 4 | 15 - 7 | 19 - 8 | 23 - 5 | 26-0† | 9 - 0 | 13 - 6 | 17 - 1 | 20 - 3 | 23 - 10 |
| | Southern Pine | No.3 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 0 | 21 - 4 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 7 | 18 - 6 |
| | Spruce-Pine Fir | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26-0† | 26-0† | 10 - 7 | 16 - 8 | 21 - 9 | 26-0† | 26-0† |
| | Spruce-Pine Fir | No.1 | 10 - 4 | 16 - 3 | 21 - 0 | 25 - 8 | 26-0† | 9 - 10 | 14 - 4 | 18 - 2 | 22 - 3 | 25 - 9 |
| | Spruce-Pine Fir | No.2 | 10 - 4 | 16 - 3 | 21 - 0 | 25 - 8 | 26-0† | 9 - 10 | 14 - 4 | 18 - 2 | 22 - 3 | 25 - 9 |
| | Spruce-Pine Fir | No.3 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| 16 | Douglas Fir-Larch | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26-0† | 26-0† | 10 - 5 | 16 - 3 | 20 - 7 | 25 - 2 | 26-0† |
| | Douglas Fir-Larch | No.1 | 10 - 0 | 15 - 4 | 19 - 5 | 23 - 9 | 26-0† | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | Douglas Fir-Larch | No.2 | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26-0† | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | Douglas Fir-Larch | No.3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Hem-Fir | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26-0† | 26-0† | 9 - 10 | 15 - 6 | 19 - 11 | 24 - 4 | 26-0† |
| | Hem-Fir | No.1 | 9 - 8 | 15 - 2 | 19 - 2 | 23 - 5 | 26-0† | 9 - 0 | 13 - 1 | 16 - 7 | 20 - 4 | 23 - 7 |
| | Hem-Fir | No.2 | 9 - 2 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | Hem-Fir | No.3 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | Southern Pine | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26-0† | 26-0† | 10 - 3 | 16 - 1 | 21 - 2 | 25 - 7 | 26-0† |
| | Southern Pine | No.1 | 9 - 10 | 15 - 6 | 19 - 10 | 23 - 2 | 26-0† | 9 - 1 | 13 - 7 | 17 - 2 | 20 - 1 | 23 - 10 |
| | Southern Pine | No.2 | 9 - 0 | 13 - 6 | 17 - 1 | 20 - 3 | 23 - 10 | 7 - 9 | 11 - 8 | 14 - 9 | 17 - 6 | 20 - 8 |
| | Southern Pine | No.3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 7 | 18 - 6 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 6 | 16 - 0 |
| | Spruce-Pine Fir | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26-0† | 9 - 8 | 14 - 10 | 18 - 10 | 23 - 0 | 26-0† |
| | Spruce-Pine Fir | No.1 | 9 - 5 | 14 - 4 | 18 - 2 | 22 - 3 | 25 - 9 | 8 - 6 | 12 - 5 | 15 - 9 | 19 - 3 | 22 - 4 |
| | Spruce-Pine Fir | No.2 | 9 - 5 | 14 - 4 | 18 - 2 | 22 - 3 | 25 - 9 | 8 - 6 | 12 - 5 | 15 - 9 | 19 - 3 | 22 - 4 |
| | Spruce-Pine Fir | No.3 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| 19.2 | Douglas Fir-Larch | SS | 9 - 10 | 15 - 5 | 20 - 4 | 25 - 11 | 26-0† | 9 - 10 | 14 - 10 | 18 - 10 | 23 - 0 | 26-0† |
| | Douglas Fir-Larch | No.1 | 9 - 5 | 14 - 0 | 17 - 9 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | Douglas Fir-Larch | No.2 | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | Douglas Fir-Larch | No.3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Hem-Fir | SS | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 6 | 26-0† | 9 - 3 | 14 - 4 | 18 - 2 | 22 - 3 | 25 - 9 |
| | Hem-Fir | No.1 | 9 - 1 | 13 - 10 | 17 - 6 | 21 - 5 | 24 - 10 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 6 |
| | Hem-Fir | No.2 | 8 - 8 | 12 - 11 | 16 - 4 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | Hem-Fir | No.3 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Southern Pine | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26-0† | 9 - 8 | 15 - 2 | 19 - 7 | 23 - 4 | 26-0† |
| | Southern Pine | No.1 | 9 - 3 | 14 - 3 | 18 - 1 | 21 - 2 | 25 - 2 | 8 - 4 | 12 - 4 | 15 - 8 | 18 - 4 | 21 - 9 |
| | Southern Pine | No.2 | 8 - 2 | 12 - 3 | 15 - 7 | 18 - 6 | 21 - 9 | 7 - 1 | 10 - 8 | 13 - 6 | 16 - 0 | 18 - 10 |
| | Southern Pine | No.3 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 3 | 16 - 10 | 5 - 6 | 8 - 1 | 10 - 2 | 12 - 4 | 14 - 7 |
| | Spruce-Pine Fir | SS | 9 - 1 | 14 - 3 | 18 - 9 | 23 - 11 | 26-0† | 9 - 1 | 13 - 7 | 17 - 2 | 21 - 0 | 24 - 4 |
| | Spruce-Pine Fir | No.1 | 8 - 10 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 6 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 7 | 20 - 4 |
| | Spruce-Pine Fir | No.2 | 8 - 10 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 6 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 7 | 20 - 4 |
| | Spruce-Pine Fir | No.3 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| 24 | Douglas Fir-Larch | SS | 9 - 1 | 14 - 4 | 18 - 10 | 23 - 9 | 26-0† | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | Douglas Fir-Larch | No.1 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | Douglas Fir-Larch | No.2 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | Douglas Fir-Larch | No.3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Hem-Fir | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26-0† | 8 - 7 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | Hem-Fir | No.1 | 8 - 5 | 12 - 4 | 15 - 8 | 19 - 2 | 22 - 2 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 |
| | Hem-Fir | No.2 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Hem-Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Southern Pine | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26-0† | 8 - 11 | 13 - 10 | 17 - 6 | 20 - 10 | 24 - 8 |
| | Southern Pine | No.1 | 8 - 7 | 12 - 9 | 16 - 2 | 18 - 11 | 22 - 6 | 7 - 5 | 11 - 1 | 14 - 0 | 16 - 5 | 19 - 6 |
| | Southern Pine | No.2 | 7 - 4 | 11 - 0 | 13 - 11 | 16 - 6 | 19 - 6 | 6 - 4 | 9 - 6 | 12 - 1 | 14 - 4 | 16 - 10 |
| | Southern Pine | No.3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 9 | 15 - 1 | 4 - 11 | 7 - 3 | 9 - 1 | 11 - 0 | 13 - 1 |
| | Spruce-Pine Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | Spruce-Pine Fir | No.1 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 2 | 21 - 0 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | Spruce-Pine Fir | No.2 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 2 | 21 - 0 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | Spruce-Pine Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |

† Spans are limited to 26 feet in length.

See footnotes 1-3.

## Table 3.26B Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) Live Load = 20 psf, $L/\Delta_{LL}$ = 240, Flexible Finish (including gypsum board)

**LL = 20 psf**
**$L/\Delta_{LL}$ = 240**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[1,2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26-0† | 26-0† | 10 - 5 | 16 - 4 | 21 - 7 | 26-0† | 26-0† |
| | Douglas Fir-Larch | No.1 | 10 - 0 | 15 - 9 | 20 - 10 | 26-0† | 26-0† | 10 - 0 | 15 - 4 | 19 - 5 | 23 - 9 | 26-0† |
| | Douglas Fir-Larch | No.2 | 9 - 10 | 15 - 6 | 20 - 5 | 26-0† | 26-0† | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26-0† |
| | Douglas Fir-Larch | No.3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | Hem-Fir | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26-0† | 26-0† | 9 - 10 | 15 - 6 | 20 - 5 | 26-0† | 26-0† |
| | Hem-Fir | No.1 | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26-0† | 9 - 8 | 15 - 2 | 19 - 2 | 23 - 5 | 26-0† |
| | Hem-Fir | No.2 | 9 - 2 | 14 - 5 | 19 - 0 | 24 - 3 | 26-0† | 9 - 2 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | Hem-Fir | No.3 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | Southern Pine | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26-0† | 26-0† | 10 - 3 | 16 - 1 | 21 - 2 | 26-0† | 26-0† |
| | Southern Pine | No.1 | 9 - 10 | 15 - 6 | 20 - 5 | 26-0† | 26-0† | 9 - 10 | 15 - 6 | 19 - 10 | 23 - 2 | 26-0† |
| | Southern Pine | No.2 | 9 - 5 | 14 - 9 | 19 - 6 | 23 - 5 | 26-0† | 9 - 0 | 13 - 6 | 17 - 1 | 20 - 3 | 23 - 10 |
| | Southern Pine | No.3 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 0 | 21 - 4 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 7 | 18 - 6 |
| | Spruce-Pine Fir | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26-0† | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26-0† |
| | Spruce-Pine Fir | No.1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26-0† | 9 - 5 | 14 - 4 | 18 - 2 | 22 - 3 | 25 - 9 |
| | Spruce-Pine Fir | No.2 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26-0† | 9 - 5 | 14 - 4 | 18 - 2 | 22 - 3 | 25 - 9 |
| | Spruce-Pine Fir | No.3 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| 16 | Douglas Fir-Larch | SS | 9 - 6 | 14 - 11 | 19 - 7 | 25 - 0 | 26-0† | 9 - 6 | 14 - 11 | 19 - 7 | 25 - 0 | 26-0† |
| | Douglas Fir-Larch | No.1 | 9 - 1 | 14 - 4 | 18 - 11 | 23 - 9 | 26-0† | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | Douglas Fir-Larch | No.2 | 8 - 11 | 14 - 1 | 18 - 5 | 22 - 6 | 26-0† | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | Douglas Fir-Larch | No.3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Hem-Fir | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26-0† | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26-0† |
| | Hem-Fir | No.1 | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 1 | 26-0† | 8 - 9 | 13 - 1 | 16 - 7 | 20 - 4 | 23 - 7 |
| | Hem-Fir | No.2 | 8 - 4 | 13 - 1 | 17 - 3 | 21 - 11 | 25 - 5 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | Hem-Fir | No.3 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | Southern Pine | SS | 9 - 4 | 14 - 7 | 19 - 3 | 24 - 7 | 26-0† | 9 - 4 | 14 - 7 | 19 - 3 | 24 - 7 | 26-0† |
| | Southern Pine | No.1 | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 2 | 26-0† | 8 - 11 | 13 - 7 | 17 - 2 | 20 - 1 | 23 - 10 |
| | Southern Pine | No.2 | 8 - 7 | 13 - 5 | 17 - 1 | 20 - 3 | 23 - 10 | 7 - 9 | 11 - 8 | 14 - 9 | 17 - 6 | 20 - 8 |
| | Southern Pine | No.3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 7 | 18 - 6 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 6 | 16 - 0 |
| | Spruce-Pine Fir | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 1 | 26-0† | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 0 | 26-0† |
| | Spruce-Pine Fir | No.1 | 8 - 7 | 13 - 5 | 17 - 9 | 22 - 3 | 25 - 9 | 8 - 6 | 12 - 5 | 15 - 9 | 19 - 3 | 22 - 4 |
| | Spruce-Pine Fir | No.2 | 8 - 7 | 13 - 5 | 17 - 9 | 22 - 3 | 25 - 9 | 8 - 6 | 12 - 5 | 15 - 9 | 19 - 3 | 22 - 4 |
| | Spruce-Pine Fir | No.3 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| 19.2 | Douglas Fir-Larch | SS | 8 - 11 | 14 - 0 | 18 - 5 | 23 - 7 | 26-0† | 8 - 11 | 14 - 0 | 18 - 5 | 23 - 0 | 26-0† |
| | Douglas Fir-Larch | No.1 | 8 - 7 | 13 - 6 | 17 - 9 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | Douglas Fir-Larch | No.2 | 8 - 5 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | Douglas Fir-Larch | No.3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Hem-Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26-0† | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 25 - 9 |
| | Hem-Fir | No.1 | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 5 | 24 - 10 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 6 |
| | Hem-Fir | No.2 | 7 - 10 | 12 - 4 | 16 - 3 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | Hem-Fir | No.3 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Southern Pine | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 1 | 26-0† | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 1 | 26-0† |
| | Southern Pine | No.1 | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 2 | 25 - 2 | 8 - 4 | 12 - 4 | 15 - 8 | 18 - 4 | 21 - 9 |
| | Southern Pine | No.2 | 8 - 1 | 12 - 3 | 15 - 7 | 18 - 6 | 21 - 9 | 7 - 1 | 10 - 8 | 13 - 6 | 16 - 0 | 18 - 10 |
| | Southern Pine | No.3 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 3 | 16 - 10 | 5 - 6 | 8 - 1 | 10 - 2 | 12 - 4 | 14 - 7 |
| | Spruce-Pine Fir | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 26-0† | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 0 | 24 - 4 |
| | Spruce-Pine Fir | No.1 | 8 - 1 | 12 - 8 | 16 - 7 | 20 - 3 | 23 - 6 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 7 | 20 - 4 |
| | Spruce-Pine Fir | No.2 | 8 - 1 | 12 - 8 | 16 - 7 | 20 - 3 | 23 - 6 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 7 | 20 - 4 |
| | Spruce-Pine Fir | No.3 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| 24 | Douglas Fir-Larch | SS | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 10 | 26-0† | 8 - 3 | 13 - 0 | 16 - 10 | 20 - 7 | 23 - 10 |
| | Douglas Fir-Larch | No.1 | 8 - 0 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | Douglas Fir-Larch | No.2 | 7 - 10 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | Douglas Fir-Larch | No.3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Hem-Fir | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 16 - 2 | 19 - 10 | 23 - 0 |
| | Hem-Fir | No.1 | 7 - 8 | 12 - 0 | 15 - 8 | 19 - 2 | 22 - 2 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 |
| | Hem-Fir | No.2 | 7 - 3 | 11 - 5 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Hem-Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Southern Pine | SS | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 | 26-0† | 8 - 1 | 12 - 9 | 16 - 10 | 20 - 10 | 24 - 8 |
| | Southern Pine | No.1 | 7 - 10 | 12 - 3 | 16 - 2 | 18 - 11 | 22 - 6 | 7 - 5 | 11 - 1 | 14 - 0 | 16 - 5 | 19 - 6 |
| | Southern Pine | No.2 | 7 - 4 | 11 - 0 | 13 - 11 | 16 - 6 | 19 - 6 | 6 - 4 | 9 - 6 | 12 - 1 | 14 - 4 | 16 - 10 |
| | Southern Pine | No.3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 9 | 15 - 1 | 4 - 11 | 7 - 3 | 9 - 1 | 11 - 0 | 13 - 1 |
| | Spruce-Pine Fir | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 4 | 18 - 9 | 21 - 9 |
| | Spruce-Pine Fir | No.1 | 7 - 6 | 11 - 9 | 14 - 10 | 18 - 2 | 21 - 0 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | Spruce-Pine Fir | No.2 | 7 - 6 | 11 - 9 | 14 - 10 | 18 - 2 | 21 - 0 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | Spruce-Pine Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |

† Spans are limited to 26 feet in length.
See footnotes 1-3.

## Table 3.26C Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) Live Load = 20 psf, $L/\Delta_{LL}$ = 360, Brittle Finish (including plaster and stucco)

**LL = 20 psf**
**$L/\Delta_{LL}$ = 360**

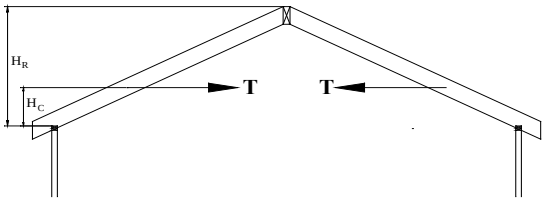
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[1,2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 9 - 1 | 14 - 4 | 18 - 10 | 24 - 1 | 26-0† | 9 - 1 | 14 - 4 | 18 - 10 | 24 - 1 | 26-0† |
| | Douglas Fir-Larch | No.1 | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26-0† | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26-0† |
| | Douglas Fir-Larch | No.2 | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26-0† | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 6 | 26-0† |
| | Douglas Fir-Larch | No.3 | 8 - 3 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | Hem-Fir | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26-0† | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26-0† |
| | Hem-Fir | No.1 | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26-0† | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26-0† |
| | Hem-Fir | No.2 | 8 - 0 | 12 - 7 | 16 - 7 | 21 - 2 | 25 - 9 | 8 - 0 | 12 - 7 | 16 - 7 | 21 - 2 | 25 - 5 |
| | Hem-Fir | No.3 | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | Southern Pine | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26-0† | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26-0† |
| | Southern Pine | No.1 | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26-0† | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26-0† |
| | Southern Pine | No.2 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 | 26-0† | 8 - 3 | 12 - 11 | 17 - 0 | 20 - 3 | 23 - 10 |
| | Southern Pine | No.3 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 0 | 21 - 4 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 7 | 18 - 6 |
| | Spruce-Pine Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26-0† | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26-0† |
| | Spruce-Pine Fir | No.1 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 | 26-0† | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 | 25 - 9 |
| | Spruce-Pine Fir | No.2 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 | 26-0† | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 | 25 - 9 |
| | Spruce-Pine Fir | No.3 | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| 16 | Douglas Fir-Larch | SS | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 10 | 26-0† | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 10 | 26-0† |
| | Douglas Fir-Larch | No.1 | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 7 | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 7 | 23 - 10 |
| | Douglas Fir-Larch | No.2 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 16 - 0 | 19 - 6 | 22 - 7 |
| | Douglas Fir-Larch | No.3 | 7 - 6 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Hem-Fir | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 |
| | Hem-Fir | No.1 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 23 - 7 |
| | Hem-Fir | No.2 | 7 - 3 | 11 - 5 | 15 - 1 | 19 - 3 | 23 - 5 | 7 - 3 | 11 - 5 | 15 - 1 | 18 - 11 | 22 - 0 |
| | Hem-Fir | No.3 | 7 - 1 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | Southern Pine | SS | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 | 26-0† | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 | 26-0† |
| | Southern Pine | No.1 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 1 | 23 - 10 |
| | Southern Pine | No.2 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 9 | 23 - 10 | 7 - 6 | 11 - 8 | 14 - 9 | 17 - 6 | 20 - 8 |
| | Southern Pine | No.3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 7 | 18 - 6 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 6 | 16 - 0 |
| | Spruce-Pine Fir | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 |
| | Spruce-Pine Fir | No.1 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 9 | 24 - 0 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 3 | 22 - 4 |
| | Spruce-Pine Fir | No.2 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 9 | 24 - 0 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 3 | 22 - 4 |
| | Spruce-Pine Fir | No.3 | 7 - 1 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| 19.2 | Douglas Fir-Larch | SS | 7 - 9 | 12 - 3 | 16 - 1 | 20 - 7 | 25 - 0 | 7 - 9 | 12 - 3 | 16 - 1 | 20 - 7 | 25 - 0 |
| | Douglas Fir-Larch | No.1 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 10 | 24 - 1 | 7 - 6 | 11 - 9 | 15 - 4 | 18 - 9 | 21 - 9 |
| | Douglas Fir-Larch | No.2 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | Douglas Fir-Larch | No.3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Hem-Fir | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 |
| | Hem-Fir | No.1 | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 23 - 1 | 7 - 2 | 11 - 4 | 14 - 11 | 18 - 6 | 21 - 6 |
| | Hem-Fir | No.2 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 1 | 22 - 1 | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 4 | 20 - 1 |
| | Hem-Fir | No.3 | 6 - 8 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Southern Pine | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 |
| | Southern Pine | No.1 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 3 | 18 - 4 | 21 - 9 |
| | Southern Pine | No.2 | 7 - 0 | 11 - 1 | 14 - 7 | 18 - 6 | 21 - 9 | 7 - 0 | 10 - 8 | 13 - 6 | 16 - 0 | 18 - 10 |
| | Southern Pine | No.3 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 3 | 16 - 10 | 5 - 6 | 8 - 1 | 10 - 2 | 12 - 4 | 14 - 7 |
| | Spruce-Pine Fir | SS | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 23 - 1 | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 23 - 1 |
| | Spruce-Pine Fir | No.1 | 7 - 0 | 11 - 1 | 14 - 7 | 18 - 7 | 22 - 7 | 7 - 0 | 11 - 1 | 14 - 4 | 17 - 7 | 20 - 4 |
| | Spruce-Pine Fir | No.2 | 7 - 0 | 11 - 1 | 14 - 7 | 18 - 7 | 22 - 7 | 7 - 0 | 11 - 1 | 14 - 4 | 17 - 7 | 20 - 4 |
| | Spruce-Pine Fir | No.3 | 6 - 8 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| 24 | Douglas Fir-Larch | SS | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 |
| | Douglas Fir-Larch | No.1 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | Douglas Fir-Larch | No.2 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 4 | 6 - 10 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | Douglas Fir-Larch | No.3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Hem-Fir | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 |
| | Hem-Fir | No.1 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 7 | 16 - 7 | 19 - 3 |
| | Hem-Fir | No.2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 10 | 20 - 6 | 6 - 4 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Hem-Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Southern Pine | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 |
| | Southern Pine | No.1 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 0 | 16 - 5 | 19 - 6 |
| | Southern Pine | No.2 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 6 | 19 - 6 | 6 - 4 | 9 - 6 | 12 - 1 | 14 - 4 | 16 - 10 |
| | Southern Pine | No.3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 9 | 15 - 1 | 4 - 11 | 7 - 3 | 9 - 1 | 11 - 0 | 13 - 1 |
| | Spruce-Pine Fir | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | Spruce-Pine Fir | No.1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 21 - 0 | 6 - 6 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | Spruce-Pine Fir | No.2 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 21 - 0 | 6 - 6 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | Spruce-Pine Fir | No.3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |

† Spans are limited to 26 feet in length.

See footnotes 1-3.

## Footnotes to Tables 3.26A, B and C

1 Tabulated rafter spans assume ceiling joists or rafter ties are located at the bottom of the attic space to resist thrust. When ceiling joists or rafter ties are located higher in the attic space and are used to resist thrust, the rafter spans shall be reduced using the factors given in the following table:




| Ceiling Height/Top Plate-to-Roof Ridge Height ($H_C/H_R$) | Rafter Span Adjustment Factors |
|---|---|
| **1/2** | 0.58 |
| **1/3** | 0.67 |
| **1/4** | 0.76 |
| **1/5** | 0.83 |
| **1/6** | 0.90 |
| **1/7.5 and less** | 1.00 |

**Note:** Lateral deflection of the rafter below the rafter ties may exceed 3/4 inch when rafter ties are located above one-third of the top plate-to- roof ridge height, $H_R$, or when $H_c$ is greater than 2 feet and may require additional consideration.

2 Tabulated rafter spans in Tables 3.26A, B and C shall be permitted to be multiplied by the sloped roof adjustment factors in the following table for roof pitches greater than 4:12:

| | 10 psf Dead | 20 psf Dead |
|---|---|---|
| **Roof Pitch** | **Adjustment Factor For Sloped Roofs** | |
| **5:12** | 1.02 | 1.01 |
| **6:12** | 1.04 | 1.03 |
| **7:12** | 1.05 | 1.04 |
| **8:12** | 1.07 | 1.05 |
| **9:12** | 1.10 | 1.07 |
| **10:12** | 1.12 | 1.08 |
| **11:12** | 1.14 | 1.10 |
| **12:12** | 1.17 | 1.12 |

3 Spans checked for live load deflection only.

## Table 3.26D Rafter Spans for Common Lumber Species

(Ceiling Not Attached to Rafters)

ASD Ground Snow Load[1], $p_{g(ASD)}$ = 30 psf, $L/\Delta_{LL}$ = 180

**GSL = 30 psf**
**$L/\Delta_{LL}$ = 180**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 10 - 0 | 15 - 9 | 20-0† | 20-0† | 20-0† | 10 - 0 | 15 - 9 | 20-0† | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.1 | 9 - 8 | 14 - 9 | 18 - 8 | 20-0† | 20-0† | 9 - 0 | 13 - 2 | 16 - 8 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.2 | 9 - 6 | 14 - 0 | 17 - 8 | 20-0† | 20-0† | 8 - 6 | 12 - 6 | 15 - 10 | 19 - 4 | 20-0† |
| | Douglas Fir-Larch | No.3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Hem-Fir | SS | 9 - 6 | 14 - 10 | 19 - 7 | 20-0† | 20-0† | 9 - 6 | 14 - 10 | 19 - 7 | 20-0† | 20-0† |
| | Hem-Fir | No.1 | 9 - 3 | 14 - 6 | 18 - 5 | 20-0† | 20-0† | 8 - 11 | 13 - 0 | 16 - 6 | 20-0† | 20-0† |
| | Hem-Fir | No.2 | 8 - 10 | 13 - 7 | 17 - 2 | 20-0† | 20-0† | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 20-0† |
| | Hem-Fir | No.3 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Southern Pine | SS | 9 - 10 | 15 - 6 | 20-0† | 20-0† | 20-0† | 9 - 10 | 15 - 6 | 20-0† | 20-0† | 20-0† |
| | Southern Pine | No.1 | 9 - 6 | 14 - 10 | 19 - 0 | 20-0† | 20-0† | 9 - 0 | 13 - 5 | 17 - 0 | 19 - 11 | 20-0† |
| | Southern Pine | No.2 | 8 - 7 | 12 - 11 | 16 - 4 | 19 - 5 | 20-0† | 7 - 8 | 11 - 7 | 14 - 8 | 17 - 4 | 20-0† |
| | Southern Pine | No.3 | 6 - 7 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 9 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 5 | 15 - 10 |
| | Spruce-Pine Fir | SS | 9 - 3 | 14 - 7 | 19 - 2 | 20-0† | 20-0† | 9 - 3 | 14 - 7 | 18 - 8 | 20-0† | 20-0† |
| | Spruce-Pine Fir | No.1 | 9 - 1 | 13 - 9 | 17 - 5 | 20-0† | 20-0† | 8 - 5 | 12 - 4 | 15 - 7 | 19 - 1 | 20-0† |
| | Spruce-Pine Fir | No.2 | 9 - 1 | 13 - 9 | 17 - 5 | 20-0† | 20-0† | 8 - 5 | 12 - 4 | 15 - 7 | 19 - 1 | 20-0† |
| | Spruce-Pine Fir | No.3 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| 16 | Douglas Fir-Larch | SS | 9 - 1 | 14 - 4 | 18 - 10 | 20-0† | 20-0† | 9 - 1 | 14 - 0 | 17 - 8 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.1 | 8 - 9 | 12 - 9 | 16 - 2 | 19 - 9 | 20-0† | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20-0† |
| | Douglas Fir-Larch | No.2 | 8 - 3 | 12 - 1 | 15 - 4 | 18 - 9 | 20-0† | 7 - 5 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | Douglas Fir-Larch | No.3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | Hem-Fir | SS | 8 - 7 | 13 - 6 | 17 - 10 | 20-0† | 20-0† | 8 - 7 | 13 - 6 | 17 - 1 | 20-0† | 20-0† |
| | Hem-Fir | No.1 | 8 - 5 | 12 - 7 | 15 - 11 | 19 - 6 | 20-0† | 7 - 8 | 11 - 3 | 14 - 3 | 17 - 5 | 20-0† |
| | Hem-Fir | No.2 | 8 - 0 | 11 - 9 | 14 - 11 | 18 - 2 | 20-0† | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | Hem-Fir | No.3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Southern Pine | SS | 8 - 11 | 14 - 1 | 18 - 6 | 20-0† | 20-0† | 8 - 11 | 14 - 1 | 18 - 5 | 20-0† | 20-0† |
| | Southern Pine | No.1 | 8 - 7 | 13 - 0 | 16 - 6 | 19 - 3 | 20-0† | 7 - 10 | 11 - 7 | 14 - 9 | 17 - 3 | 20-0† |
| | Southern Pine | No.2 | 7 - 6 | 11 - 2 | 14 - 2 | 16 - 10 | 19 - 10 | 6 - 8 | 10 - 0 | 12 - 8 | 15 - 1 | 17 - 9 |
| | Southern Pine | No.3 | 5 - 9 | 8 - 6 | 10 - 8 | 13 - 0 | 15 - 4 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 7 | 13 - 9 |
| | Spruce-Pine Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 20-0† | 20-0† | 8 - 5 | 12 - 9 | 16 - 2 | 19 - 9 | 20-0† |
| | Spruce-Pine Fir | No.1 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 20-0† | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | Spruce-Pine Fir | No.2 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 20-0† | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | Spruce-Pine Fir | No.3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| 19.2 | Douglas Fir-Larch | SS | 8 - 7 | 13 - 6 | 17 - 9 | 20-0† | 20-0† | 8 - 7 | 12 - 9 | 16 - 2 | 19 - 9 | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20-0† | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Douglas Fir-Larch | No.2 | 7 - 7 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | Douglas Fir-Larch | No.3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | Hem-Fir | SS | 8 - 1 | 12 - 9 | 16 - 9 | 20-0† | 20-0† | 8 - 1 | 12 - 4 | 15 - 7 | 19 - 1 | 20-0† |
| | Hem-Fir | No.1 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 | 20-0† | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 |
| | Hem-Fir | No.2 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | Hem-Fir | No.3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Southern Pine | SS | 8 - 5 | 13 - 3 | 17 - 5 | 20-0† | 20-0† | 8 - 5 | 13 - 3 | 16 - 10 | 20-0† | 20-0† |
| | Southern Pine | No.1 | 7 - 11 | 11 - 10 | 15 - 1 | 17 - 7 | 20-0† | 7 - 1 | 10 - 7 | 13 - 5 | 15 - 9 | 18 - 8 |
| | Southern Pine | No.2 | 6 - 10 | 10 - 2 | 12 - 11 | 15 - 4 | 18 - 1 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 |
| | Southern Pine | No.3 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 10 | 14 - 0 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 |
| | Spruce-Pine Fir | SS | 7 - 11 | 12 - 5 | 16 - 5 | 20-0† | 20-0† | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20-0† |
| | Spruce-Pine Fir | No.1 | 7 - 5 | 10 - 11 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 |
| | Spruce-Pine Fir | No.2 | 7 - 5 | 10 - 11 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 |
| | Spruce-Pine Fir | No.3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| 24 | Douglas Fir-Larch | SS | 7 - 11 | 12 - 6 | 16 - 2 | 19 - 9 | 20-0† | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Douglas Fir-Larch | No.2 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | Hem-Fir | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 1 | 20-0† | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | Hem-Fir | No.1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 |
| | Hem-Fir | No.2 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Southern Pine | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20-0† | 20-0† | 7 - 10 | 11 - 10 | 15 - 0 | 17 - 11 | 20-0† |
| | Southern Pine | No.1 | 7 - 1 | 10 - 7 | 13 - 5 | 15 - 9 | 18 - 8 | 6 - 4 | 9 - 6 | 12 - 0 | 14 - 1 | 16 - 8 |
| | Southern Pine | No.2 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 | 5 - 5 | 8 - 2 | 10 - 4 | 12 - 3 | 14 - 6 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 2 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 2 |
| | Spruce-Pine Fir | SS | 7 - 4 | 11 - 7 | 14 - 9 | 18 - 0 | 20-0† | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Spruce-Pine Fir | No.1 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | Spruce-Pine Fir | No.2 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |

† Spans are limited to 20 feet in length.

See footnotes 1-3.

## Table 3.26E Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) ASD Ground Snow Load[1], $p_{g(ASD)}$ = 30 psf, $L/\Delta_{LL}$ = 240, Flexible Finish (including gypsum board)

**GSL = 30 psf**
**$L/\Delta_{LL}$ = 240**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 9 - 1 | 14 - 4 | 18 - 10 | 20-0† | 20-0† | 9 - 1 | 14 - 4 | 18 - 10 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.1 | 8 - 9 | 13 - 9 | 18 - 2 | 20-0† | 20-0† | 8 - 9 | 13 - 2 | 16 - 8 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.2 | 8 - 7 | 13 - 6 | 17 - 8 | 20-0† | 20-0† | 8 - 6 | 12 - 6 | 15 - 10 | 19 - 4 | 20-0† |
| | Douglas Fir-Larch | No.3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Hem-Fir | SS | 8 - 7 | 13 - 6 | 17 - 10 | 20-0† | 20-0† | 8 - 7 | 13 - 6 | 17 - 10 | 20-0† | 20-0† |
| | Hem-Fir | No.1 | 8 - 5 | 13 - 3 | 17 - 5 | 20-0† | 20-0† | 8 - 5 | 13 - 0 | 16 - 6 | 20-0† | 20-0† |
| | Hem-Fir | No.2 | 8 - 0 | 12 - 7 | 16 - 7 | 20-0† | 20-0† | 8 - 0 | 12 - 2 | 15 - 4 | 18 - 9 | 20-0† |
| | Hem-Fir | No.3 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Southern Pine | SS | 8 - 11 | 14 - 1 | 18 - 6 | 20-0† | 20-0† | 8 - 11 | 14 - 1 | 18 - 6 | 20-0† | 20-0† |
| | Southern Pine | No.1 | 8 - 7 | 13 - 6 | 17 - 10 | 20-0† | 20-0† | 8 - 7 | 13 - 5 | 17 - 0 | 19 - 11 | 20-0† |
| | Southern Pine | No.2 | 8 - 3 | 12 - 11 | 16 - 4 | 19 - 5 | 20-0† | 7 - 8 | 11 - 7 | 14 - 8 | 17 - 4 | 20-0† |
| | Southern Pine | No.3 | 6 - 7 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 9 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 5 | 15 - 10 |
| | Spruce-Pine Fir | SS | 8 - 5 | 13 - 3 | 17 - 5 | 20-0† | 20-0† | 8 - 5 | 13 - 3 | 17 - 5 | 20-0† | 20-0† |
| | Spruce-Pine Fir | No.1 | 8 - 3 | 12 - 11 | 17 - 0 | 20-0† | 20-0† | 8 - 3 | 12 - 4 | 15 - 7 | 19 - 1 | 20-0† |
| | Spruce-Pine Fir | No.2 | 8 - 3 | 12 - 11 | 17 - 0 | 20-0† | 20-0† | 8 - 3 | 12 - 4 | 15 - 7 | 19 - 1 | 20-0† |
| | Spruce-Pine Fir | No.3 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| 16 | Douglas Fir-Larch | SS | 8 - 3 | 13 - 0 | 17 - 2 | 20-0† | 20-0† | 8 - 3 | 13 - 0 | 17 - 2 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.1 | 8 - 0 | 12 - 6 | 16 - 2 | 19 - 9 | 20-0† | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20-0† |
| | Douglas Fir-Larch | No.2 | 7 - 10 | 12 - 1 | 15 - 4 | 18 - 9 | 20-0† | 7 - 5 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | Douglas Fir-Larch | No.3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | Hem-Fir | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20-0† | 20-0† | 7 - 10 | 12 - 3 | 16 - 2 | 20-0† | 20-0† |
| | Hem-Fir | No.1 | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 6 | 20-0† | 7 - 8 | 11 - 3 | 14 - 3 | 17 - 5 | 20-0† |
| | Hem-Fir | No.2 | 7 - 3 | 11 - 5 | 14 - 11 | 18 - 2 | 20-0† | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | Hem-Fir | No.3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Southern Pine | SS | 8 - 1 | 12 - 9 | 16 - 10 | 20-0† | 20-0† | 8 - 1 | 12 - 9 | 16 - 10 | 20-0† | 20-0† |
| | Southern Pine | No.1 | 7 - 10 | 12 - 3 | 16 - 2 | 19 - 3 | 20-0† | 7 - 10 | 11 - 7 | 14 - 9 | 17 - 3 | 20-0† |
| | Southern Pine | No.2 | 7 - 6 | 11 - 2 | 14 - 2 | 16 - 10 | 19 - 10 | 6 - 8 | 10 - 0 | 12 - 8 | 15 - 1 | 17 - 9 |
| | Southern Pine | No.3 | 5 - 9 | 8 - 6 | 10 - 8 | 13 - 0 | 15 - 4 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 7 | 13 - 9 |
| | Spruce-Pine Fir | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20-0† | 20-0† | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 9 | 20-0† |
| | Spruce-Pine Fir | No.1 | 7 - 6 | 11 - 9 | 15 - 1 | 18 - 5 | 20-0† | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | Spruce-Pine Fir | No.2 | 7 - 6 | 11 - 9 | 15 - 1 | 18 - 5 | 20-0† | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | Spruce-Pine Fir | No.3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| 19.2 | Douglas Fir-Larch | SS | 7 - 9 | 12 - 3 | 16 - 1 | 20-0† | 20-0† | 7 - 9 | 12 - 3 | 16 - 1 | 19 - 9 | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 6 | 11 - 8 | 14 - 9 | 18 - 0 | 20-0† | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Douglas Fir-Larch | No.2 | 7 - 4 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | Douglas Fir-Larch | No.3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | Hem-Fir | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 20-0† | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 1 | 20-0† |
| | Hem-Fir | No.1 | 7 - 2 | 11 - 4 | 14 - 7 | 17 - 9 | 20-0† | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 |
| | Hem-Fir | No.2 | 6 - 10 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | Hem-Fir | No.3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Southern Pine | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20-0† | 20-0† | 7 - 8 | 12 - 0 | 15 - 10 | 20-0† | 20-0† |
| | Southern Pine | No.1 | 7 - 4 | 11 - 7 | 15 - 1 | 17 - 7 | 20-0† | 7 - 1 | 10 - 7 | 13 - 5 | 15 - 9 | 18 - 8 |
| | Southern Pine | No.2 | 6 - 10 | 10 - 2 | 12 - 11 | 15 - 4 | 18 - 1 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 |
| | Southern Pine | No.3 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 10 | 14 - 0 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 |
| | Spruce-Pine Fir | SS | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 20-0† | 7 - 2 | 11 - 4 | 14 - 9 | 18 - 0 | 20-0† |
| | Spruce-Pine Fir | No.1 | 7 - 0 | 10 - 11 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 |
| | Spruce-Pine Fir | No.2 | 7 - 0 | 10 - 11 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 |
| | Spruce-Pine Fir | No.3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| 24 | Douglas Fir-Larch | SS | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 20-0† | 7 - 3 | 11 - 4 | 14 - 5 | 17 - 8 | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 0 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Douglas Fir-Larch | No.2 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | Hem-Fir | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20-0† | 6 - 10 | 10 - 9 | 13 - 11 | 17 - 1 | 19 - 9 |
| | Hem-Fir | No.1 | 6 - 8 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 |
| | Hem-Fir | No.2 | 6 - 4 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Southern Pine | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 20-0† | 7 - 1 | 11 - 2 | 14 - 8 | 17 - 11 | 20-0† |
| | Southern Pine | No.1 | 6 - 10 | 10 - 7 | 13 - 5 | 15 - 9 | 18 - 8 | 6 - 4 | 9 - 6 | 12 - 0 | 14 - 1 | 16 - 8 |
| | Southern Pine | No.2 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 | 5 - 5 | 8 - 2 | 10 - 4 | 12 - 3 | 14 - 6 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 2 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 2 |
| | Spruce-Pine Fir | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20-0† | 6 - 8 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Spruce-Pine Fir | No.1 | 6 - 6 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | Spruce-Pine Fir | No.2 | 6 - 6 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |

† Spans are limited to 20 feet in length.

See footnotes 1-3.

## Table 3.26F Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) ASD Ground Snow Load[1], $p_{g(ASD)}$ = 30 psf, $L/\Delta_{LL}$ = 360, Brittle Finish (including plaster and stucco)

**GSL = 30 psf**
**$L/\Delta_{LL}$ = 360**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 7 - 11 | 12 - 6 | 16 - 6 | 20-0† | 20-0† | 7 - 11 | 12 - 6 | 16 - 6 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 8 | 12 - 0 | 15 - 10 | 20-0† | 20-0† | 7 - 8 | 12 - 0 | 15 - 10 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.2 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 20-0† | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 4 | 20-0† |
| | Douglas Fir-Larch | No.3 | 7 - 2 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Hem-Fir | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 20-0† | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 20-0† |
| | Hem-Fir | No.1 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 20-0† | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 20-0† |
| | Hem-Fir | No.2 | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 6 | 20-0† | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 6 | 20-0† |
| | Hem-Fir | No.3 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Southern Pine | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20-0† | 20-0† | 7 - 10 | 12 - 3 | 16 - 2 | 20-0† | 20-0† |
| | Southern Pine | No.1 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 20-0† | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 20-0† |
| | Southern Pine | No.2 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 20-0† | 7 - 2 | 11 - 3 | 14 - 8 | 17 - 4 | 20-0† |
| | Southern Pine | No.3 | 6 - 7 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 9 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 5 | 15 - 10 |
| | Spruce-Pine Fir | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 20-0† | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 20-0† |
| | Spruce-Pine Fir | No.1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 20-0† | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 20-0† |
| | Spruce-Pine Fir | No.2 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 20-0† | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 20-0† |
| | Spruce-Pine Fir | No.3 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| 16 | Douglas Fir-Larch | SS | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 20-0† | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 20-0† | 7 - 0 | 10 - 11 | 14 - 5 | 17 - 8 | 20-0† |
| | Douglas Fir-Larch | No.2 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20-0† | 6 - 10 | 10 - 9 | 13 - 8 | 16 - 9 | 19 - 5 |
| | Douglas Fir-Larch | No.3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | Hem-Fir | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20-0† | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20-0† |
| | Hem-Fir | No.1 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20-0† | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 5 | 20-0† |
| | Hem-Fir | No.2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 10 | 20-0† | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 3 | 18 - 10 |
| | Hem-Fir | No.3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Southern Pine | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 20-0† | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 20-0† |
| | Southern Pine | No.1 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20-0† | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 3 | 20-0† |
| | Southern Pine | No.2 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 10 | 19 - 10 | 6 - 6 | 10 - 0 | 12 - 8 | 15 - 1 | 17 - 9 |
| | Southern Pine | No.3 | 5 - 9 | 8 - 6 | 10 - 8 | 13 - 0 | 15 - 4 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 7 | 13 - 9 |
| | Spruce-Pine Fir | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20-0† | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20-0† |
| | Spruce-Pine Fir | No.1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20-0† | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 6 | 19 - 2 |
| | Spruce-Pine Fir | No.2 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20-0† | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 6 | 19 - 2 |
| | Spruce-Pine Fir | No.3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| 19.2 | Douglas Fir-Larch | SS | 6 - 10 | 10 - 8 | 14 - 1 | 18 - 0 | 20-0† | 6 - 10 | 10 - 8 | 14 - 1 | 18 - 0 | 20-0† |
| | Douglas Fir-Larch | No.1 | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 20-0† | 6 - 7 | 10 - 4 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Douglas Fir-Larch | No.2 | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 19 - 10 | 6 - 5 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | Douglas Fir-Larch | No.3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | Hem-Fir | SS | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 20-0† | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 20-0† |
| | Hem-Fir | No.1 | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20-0† | 6 - 3 | 9 - 10 | 13 - 0 | 15 - 11 | 18 - 5 |
| | Hem-Fir | No.2 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 19 - 3 | 6 - 0 | 9 - 5 | 12 - 2 | 14 - 10 | 17 - 3 |
| | Hem-Fir | No.3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Southern Pine | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20-0† | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20-0† |
| | Southern Pine | No.1 | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 20-0† | 6 - 5 | 10 - 1 | 13 - 4 | 15 - 9 | 18 - 8 |
| | Southern Pine | No.2 | 6 - 2 | 9 - 8 | 12 - 9 | 15 - 4 | 18 - 1 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 |
| | Southern Pine | No.3 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 10 | 14 - 0 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 |
| | Spruce-Pine Fir | SS | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20-0† | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20-0† |
| | Spruce-Pine Fir | No.1 | 6 - 2 | 9 - 8 | 12 - 9 | 16 - 3 | 19 - 6 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 1 | 17 - 6 |
| | Spruce-Pine Fir | No.2 | 6 - 2 | 9 - 8 | 12 - 9 | 16 - 3 | 19 - 6 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 1 | 17 - 6 |
| | Spruce-Pine Fir | No.3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| 24 | Douglas Fir-Larch | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 8 | 20-0† | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 8 | 20-0† |
| | Douglas Fir-Larch | No.1 | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 18 - 8 | 6 - 1 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Douglas Fir-Larch | No.2 | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | Hem-Fir | SS | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 |
| | Hem-Fir | No.1 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 5 | 5 - 10 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 |
| | Hem-Fir | No.2 | 5 - 7 | 8 - 9 | 11 - 6 | 14 - 8 | 17 - 3 | 5 - 7 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Southern Pine | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 |
| | Southern Pine | No.1 | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 9 | 18 - 8 | 6 - 0 | 9 - 4 | 12 - 0 | 14 - 1 | 16 - 8 |
| | Southern Pine | No.2 | 5 - 8 | 8 - 11 | 11 - 7 | 13 - 9 | 16 - 2 | 5 - 5 | 8 - 2 | 10 - 4 | 12 - 3 | 14 - 6 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 2 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 2 |
| | Spruce-Pine Fir | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 8 |
| | Spruce-Pine Fir | No.1 | 5 - 8 | 8 - 11 | 11 - 10 | 15 - 1 | 17 - 6 | 5 - 8 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | Spruce-Pine Fir | No.2 | 5 - 8 | 8 - 11 | 11 - 10 | 15 - 1 | 17 - 6 | 5 - 8 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |

† Spans are limited to 20 feet in length.
See footnotes 1-3.

## Table 3.26G Rafter Spans for Common Lumber Species

(Ceiling Not Attached to Rafters)

ASD Ground Snow Load[1], $p_{g(ASD)}$ = 50 psf, $L/\Delta_{LL}$ = 180

**GSL = 50 psf**
**$L/\Delta_{LL}$ = 180**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 8 - 5 | 13 - 3 | 17 - 6 | 20-0† | 20-0† | 8 - 5 | 13 - 3 | 17 - 3 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.1 | 8 - 2 | 12 - 0 | 15 - 3 | 18 - 7 | 20-0† | 7 - 7 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | Douglas Fir-Larch | No.2 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20-0† | 7 - 3 | 10 - 7 | 13 - 4 | 16 - 4 | 18 - 11 |
| | Douglas Fir-Larch | No.3 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Hem-Fir | SS | 8 - 0 | 12 - 6 | 16 - 6 | 20-0† | 20-0† | 8 - 0 | 12 - 6 | 16 - 6 | 20-0† | 20-0† |
| | Hem-Fir | No.1 | 7 - 10 | 11 - 10 | 15 - 0 | 18 - 4 | 20-0† | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 9 |
| | Hem-Fir | No.2 | 7 - 5 | 11 - 1 | 14 - 0 | 17 - 2 | 19 - 11 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | Hem-Fir | No.3 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Southern Pine | SS | 8 - 4 | 13 - 1 | 17 - 2 | 20-0† | 20-0† | 8 - 4 | 13 - 1 | 17 - 2 | 20-0† | 20-0† |
| | Southern Pine | No.1 | 8 - 0 | 12 - 3 | 15 - 6 | 18 - 2 | 20-0† | 7 - 7 | 11 - 4 | 14 - 5 | 16 - 10 | 20 - 0 |
| | Southern Pine | No.2 | 7 - 0 | 10 - 6 | 13 - 4 | 15 - 10 | 18 - 8 | 6 - 6 | 9 - 9 | 12 - 4 | 14 - 8 | 17 - 3 |
| | Southern Pine | No.3 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 3 | 14 - 6 | 5 - 0 | 7 - 5 | 9 - 4 | 11 - 4 | 13 - 5 |
| | Spruce-Pine Fir | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20-0† | 20-0† | 7 - 10 | 12 - 3 | 15 - 9 | 19 - 3 | 20-0† |
| | Spruce-Pine Fir | No.1 | 7 - 8 | 11 - 3 | 14 - 3 | 17 - 5 | 20-0† | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Spruce-Pine Fir | No.2 | 7 - 8 | 11 - 3 | 14 - 3 | 17 - 5 | 20-0† | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Spruce-Pine Fir | No.3 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| 16 | Douglas Fir-Larch | SS | 7 - 8 | 12 - 1 | 15 - 11 | 19 - 9 | 20-0† | 7 - 8 | 11 - 10 | 14 - 11 | 18 - 3 | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Douglas Fir-Larch | No.2 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Hem-Fir | SS | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 1 | 20-0† | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20-0† |
| | Hem-Fir | No.1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Hem-Fir | No.2 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | Southern Pine | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 11 | 20-0† | 7 - 6 | 11 - 10 | 15 - 7 | 18 - 6 | 20-0† |
| | Southern Pine | No.1 | 7 - 1 | 10 - 7 | 13 - 5 | 15 - 9 | 18 - 8 | 6 - 7 | 9 - 10 | 12 - 5 | 14 - 7 | 17 - 3 |
| | Southern Pine | No.2 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 | 5 - 8 | 8 - 5 | 10 - 9 | 12 - 9 | 15 - 0 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 10 | 11 - 7 |
| | Spruce-Pine Fir | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 0 | 20-0† | 7 - 1 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | Spruce-Pine Fir | No.1 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | Spruce-Pine Fir | No.2 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| 19.2 | Douglas Fir-Larch | SS | 7 - 3 | 11 - 4 | 14 - 9 | 18 - 0 | 20-0† | 7 - 3 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | Douglas Fir-Larch | No.1 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Douglas Fir-Larch | No.2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | Douglas Fir-Larch | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Hem-Fir | SS | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 5 | 20-0† | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Hem-Fir | No.1 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Hem-Fir | No.2 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Hem-Fir | No.3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| | Southern Pine | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 3 | 20-0† | 7 - 1 | 11 - 2 | 14 - 2 | 16 - 11 | 20 - 0 |
| | Southern Pine | No.1 | 6 - 6 | 9 - 8 | 12 - 3 | 14 - 4 | 17 - 1 | 6 - 0 | 9 - 0 | 11 - 4 | 13 - 4 | 15 - 9 |
| | Southern Pine | No.2 | 5 - 7 | 8 - 4 | 10 - 7 | 12 - 6 | 14 - 9 | 5 - 2 | 7 - 9 | 9 - 9 | 11 - 7 | 13 - 8 |
| | Southern Pine | No.3 | 4 - 3 | 6 - 4 | 8 - 0 | 9 - 8 | 11 - 5 | 4 - 0 | 5 - 10 | 7 - 4 | 8 - 11 | 10 - 7 |
| | Spruce-Pine Fir | SS | 6 - 8 | 10 - 6 | 13 - 5 | 16 - 5 | 19 - 1 | 6 - 8 | 9 - 10 | 12 - 5 | 15 - 3 | 17 - 8 |
| | Spruce-Pine Fir | No.1 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Spruce-Pine Fir | No.2 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Spruce-Pine Fir | No.3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| 24 | Douglas Fir-Larch | SS | 6 - 8 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Douglas Fir-Larch | No.1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Douglas Fir-Larch | No.2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | Douglas Fir-Larch | No.3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Hem-Fir | SS | 6 - 4 | 9 - 11 | 12 - 9 | 15 - 7 | 18 - 0 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Hem-Fir | No.1 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Hem-Fir | No.2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Hem-Fir | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |
| | Southern Pine | SS | 6 - 7 | 10 - 4 | 13 - 8 | 16 - 4 | 19 - 3 | 6 - 7 | 10 - 0 | 12 - 8 | 15 - 2 | 17 - 10 |
| | Southern Pine | No.1 | 5 - 10 | 8 - 8 | 11 - 0 | 12 - 10 | 15 - 3 | 5 - 5 | 8 - 0 | 10 - 2 | 11 - 11 | 14 - 1 |
| | Southern Pine | No.2 | 5 - 0 | 7 - 5 | 9 - 5 | 11 - 3 | 13 - 2 | 4 - 7 | 6 - 11 | 8 - 9 | 10 - 5 | 12 - 3 |
| | Southern Pine | No.3 | 3 - 10 | 5 - 8 | 7 - 1 | 8 - 8 | 10 - 3 | 3 - 6 | 5 - 3 | 6 - 7 | 8 - 0 | 9 - 6 |
| | Spruce-Pine Fir | SS | 6 - 2 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Spruce-Pine Fir | No.1 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Spruce-Pine Fir | No.2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Spruce-Pine Fir | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |

† Spans are limited to 20 feet in length.

See footnotes 1-3.

## Table 3.26H Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) ASD Ground Snow Load[1], $p_{g(ASD)}$ = 50 psf, $L/\Delta_{LL}$ = 240, Flexible Finish (including gypsum board)

**GSL = 50 psf**
**$L/\Delta_{LL}$ = 240**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 7 - 8 | 12 - 1 | 15 - 11 | 20-0† | 20-0† | 7 - 8 | 12 - 1 | 15 - 11 | 20-0† | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 5 | 11 - 8 | 15 - 3 | 18 - 7 | 20-0† | 7 - 5 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | Douglas Fir-Larch | No.2 | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20-0† | 7 - 3 | 10 - 7 | 13 - 4 | 16 - 4 | 18 - 11 |
| | Douglas Fir-Larch | No.3 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Hem-Fir | SS | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 2 | 20-0† | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 2 | 20-0† |
| | Hem-Fir | No.1 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 4 | 20-0† | 7 - 1 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 9 |
| | Hem-Fir | No.2 | 6 - 9 | 10 - 8 | 14 - 0 | 17 - 2 | 19 - 11 | 6 - 9 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | Hem-Fir | No.3 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Southern Pine | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 11 | 20-0† | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 11 | 20-0† |
| | Southern Pine | No.1 | 7 - 3 | 11 - 5 | 15 - 0 | 18 - 2 | 20-0† | 7 - 3 | 11 - 4 | 14 - 5 | 16 - 10 | 20 - 0 |
| | Southern Pine | No.2 | 6 - 11 | 10 - 6 | 13 - 4 | 15 - 10 | 18 - 8 | 6 - 6 | 9 - 9 | 12 - 4 | 14 - 8 | 17 - 3 |
| | Southern Pine | No.3 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 3 | 14 - 6 | 5 - 0 | 7 - 5 | 9 - 4 | 11 - 4 | 13 - 5 |
| | Spruce-Pine Fir | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 20-0† | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 20-0† |
| | Spruce-Pine Fir | No.1 | 6 - 11 | 10 - 11 | 14 - 3 | 17 - 5 | 20-0† | 6 - 11 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Spruce-Pine Fir | No.2 | 6 - 11 | 10 - 11 | 14 - 3 | 17 - 5 | 20-0† | 6 - 11 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Spruce-Pine Fir | No.3 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| 16 | Douglas Fir-Larch | SS | 7 - 0 | 11 - 0 | 14 - 5 | 18 - 5 | 20-0† | 7 - 0 | 11 - 0 | 14 - 5 | 18 - 3 | 20-0† |
| | Douglas Fir-Larch | No.1 | 6 - 9 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Douglas Fir-Larch | No.2 | 6 - 7 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Hem-Fir | SS | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20-0† | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20-0† |
| | Hem-Fir | No.1 | 6 - 5 | 10 - 2 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 5 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Hem-Fir | No.2 | 6 - 2 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | Southern Pine | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 1 | 20-0† | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 1 | 20-0† |
| | Southern Pine | No.1 | 6 - 7 | 10 - 4 | 13 - 5 | 15 - 9 | 18 - 8 | 6 - 7 | 9 - 10 | 12 - 5 | 14 - 7 | 17 - 3 |
| | Southern Pine | No.2 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 | 5 - 8 | 8 - 5 | 10 - 9 | 12 - 9 | 15 - 0 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 10 | 11 - 7 |
| | Spruce-Pine Fir | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20-0† | 6 - 5 | 10 - 2 | 13 - 4 | 16 - 8 | 19 - 4 |
| | Spruce-Pine Fir | No.1 | 6 - 4 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | Spruce-Pine Fir | No.2 | 6 - 4 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| 19.2 | Douglas Fir-Larch | SS | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 20-0† | 6 - 7 | 10 - 4 | 13 - 7 | 16 - 8 | 19 - 4 |
| | Douglas Fir-Larch | No.1 | 6 - 4 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Douglas Fir-Larch | No.2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | Douglas Fir-Larch | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Hem-Fir | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 1 | 18 - 8 |
| | Hem-Fir | No.1 | 6 - 1 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Hem-Fir | No.2 | 5 - 9 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Hem-Fir | No.3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| | Southern Pine | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20-0† | 6 - 5 | 10 - 2 | 13 - 4 | 16 - 11 | 20 - 0 |
| | Southern Pine | No.1 | 6 - 2 | 9 - 8 | 12 - 3 | 14 - 4 | 17 - 1 | 6 - 0 | 9 - 0 | 11 - 4 | 13 - 4 | 15 - 9 |
| | Southern Pine | No.2 | 5 - 7 | 8 - 4 | 10 - 7 | 12 - 6 | 14 - 9 | 5 - 2 | 7 - 9 | 9 - 9 | 11 - 7 | 13 - 8 |
| | Southern Pine | No.3 | 4 - 3 | 6 - 4 | 8 - 0 | 9 - 8 | 11 - 5 | 4 - 0 | 5 - 10 | 7 - 4 | 8 - 11 | 10 - 7 |
| | Spruce-Pine Fir | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 1 | 6 - 1 | 9 - 6 | 12 - 5 | 15 - 3 | 17 - 8 |
| | Spruce-Pine Fir | No.1 | 5 - 11 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Spruce-Pine Fir | No.2 | 5 - 11 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Spruce-Pine Fir | No.3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| 24 | Douglas Fir-Larch | SS | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 18 - 8 | 6 - 1 | 9 - 7 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Douglas Fir-Larch | No.1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Douglas Fir-Larch | No.2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | Douglas Fir-Larch | No.3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Hem-Fir | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 2 | 18 - 0 | 5 - 9 | 9 - 1 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Hem-Fir | No.1 | 5 - 8 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Hem-Fir | No.2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Hem-Fir | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |
| | Southern Pine | SS | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 19 - 3 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 2 | 17 - 10 |
| | Southern Pine | No.1 | 5 - 9 | 8 - 8 | 11 - 0 | 12 - 10 | 15 - 3 | 5 - 5 | 8 - 0 | 10 - 2 | 11 - 11 | 14 - 1 |
| | Southern Pine | No.2 | 5 - 0 | 7 - 5 | 9 - 5 | 11 - 3 | 13 - 2 | 4 - 7 | 6 - 11 | 8 - 9 | 10 - 5 | 12 - 3 |
| | Southern Pine | No.3 | 3 - 10 | 5 - 8 | 7 - 1 | 8 - 8 | 10 - 3 | 3 - 6 | 5 - 3 | 6 - 7 | 8 - 0 | 9 - 6 |
| | Spruce-Pine Fir | SS | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 8 | 17 - 1 | 5 - 8 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Spruce-Pine Fir | No.1 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Spruce-Pine Fir | No.2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Spruce-Pine Fir | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |

† Spans are limited to 20 feet in length.

See footnotes 1-3.

## Table 3.26I Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) ASD Ground Snow Load[1], $p_{g(ASD)}$ = 50 psf, $L/\Delta_{LL}$ = 360, Brittle Finish (including plaster and stucco)

**GSL = 50 psf**
**$L/\Delta_{LL}$ = 360**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 6 - 8 | 10 - 6 | 13 - 11 | 17 - 9 | 20-0† | 6 - 8 | 10 - 6 | 13 - 11 | 17 - 9 | 20-0† |
| | Douglas Fir-Larch | No.1 | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 1 | 20-0† | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 1 | 20 - 0 |
| | Douglas Fir-Larch | No.2 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20-0† | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 4 | 18 - 11 |
| | Douglas Fir-Larch | No.3 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Hem-Fir | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20-0† | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20-0† |
| | Hem-Fir | No.1 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 9 |
| | Hem-Fir | No.2 | 5 - 11 | 9 - 3 | 12 - 3 | 15 - 7 | 19 - 0 | 5 - 11 | 9 - 3 | 12 - 3 | 15 - 7 | 18 - 5 |
| | Hem-Fir | No.3 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Southern Pine | SS | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20-0† | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20-0† |
| | Southern Pine | No.1 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20-0† | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20 - 0 |
| | Southern Pine | No.2 | 6 - 1 | 9 - 6 | 12 - 7 | 15 - 10 | 18 - 8 | 6 - 1 | 9 - 6 | 12 - 4 | 14 - 8 | 17 - 3 |
| | Southern Pine | No.3 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 3 | 14 - 6 | 5 - 0 | 7 - 5 | 9 - 4 | 11 - 4 | 13 - 5 |
| | Spruce-Pine Fir | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 |
| | Spruce-Pine Fir | No.1 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 18 - 8 |
| | Spruce-Pine Fir | No.2 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 18 - 8 |
| | Spruce-Pine Fir | No.3 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| 16 | Douglas Fir-Larch | SS | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 19 - 7 | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 19 - 7 |
| | Douglas Fir-Larch | No.1 | 5 - 10 | 9 - 3 | 12 - 2 | 15 - 6 | 18 - 8 | 5 - 10 | 9 - 3 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Douglas Fir-Larch | No.2 | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 2 | 17 - 9 | 5 - 9 | 9 - 1 | 11 - 7 | 14 - 2 | 16 - 5 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Hem-Fir | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 2 | 18 - 6 | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 2 | 18 - 6 |
| | Hem-Fir | No.1 | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 1 | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 9 | 17 - 1 |
| | Hem-Fir | No.2 | 5 - 4 | 8 - 5 | 11 - 1 | 14 - 2 | 17 - 3 | 5 - 4 | 8 - 5 | 11 - 1 | 13 - 9 | 15 - 11 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | Southern Pine | SS | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 19 - 3 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 19 - 3 |
| | Southern Pine | No.1 | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 2 | 18 - 6 | 5 - 9 | 9 - 1 | 11 - 11 | 14 - 7 | 17 - 3 |
| | Southern Pine | No.2 | 5 - 6 | 8 - 8 | 11 - 5 | 13 - 9 | 16 - 2 | 5 - 6 | 8 - 5 | 10 - 9 | 12 - 9 | 15 - 0 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 10 | 11 - 7 |
| | Spruce-Pine Fir | SS | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 1 | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 1 |
| | Spruce-Pine Fir | No.1 | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 7 | 17 - 6 | 5 - 6 | 8 - 8 | 11 - 5 | 13 - 11 | 16 - 2 |
| | Spruce-Pine Fir | No.2 | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 7 | 17 - 6 | 5 - 6 | 8 - 8 | 11 - 5 | 13 - 11 | 16 - 2 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| 19.2 | Douglas Fir-Larch | SS | 5 - 9 | 9 - 0 | 11 - 11 | 15 - 2 | 18 - 5 | 5 - 9 | 9 - 0 | 11 - 11 | 15 - 2 | 18 - 5 |
| | Douglas Fir-Larch | No.1 | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 7 | 17 - 1 | 5 - 6 | 8 - 8 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Douglas Fir-Larch | No.2 | 5 - 5 | 8 - 6 | 11 - 3 | 13 - 11 | 16 - 2 | 5 - 5 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | Douglas Fir-Larch | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Hem-Fir | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 5 | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 5 |
| | Hem-Fir | No.1 | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 16 - 10 | 5 - 4 | 8 - 4 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Hem-Fir | No.2 | 5 - 1 | 7 - 11 | 10 - 6 | 13 - 4 | 15 - 9 | 5 - 1 | 7 - 11 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Hem-Fir | No.3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| | Southern Pine | SS | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 1 | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 1 |
| | Southern Pine | No.1 | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 1 | 5 - 5 | 8 - 6 | 11 - 3 | 13 - 4 | 15 - 9 |
| | Southern Pine | No.2 | 5 - 2 | 8 - 2 | 10 - 7 | 12 - 6 | 14 - 9 | 5 - 2 | 7 - 9 | 9 - 9 | 11 - 7 | 13 - 8 |
| | Southern Pine | No.3 | 4 - 3 | 6 - 4 | 8 - 0 | 9 - 8 | 11 - 5 | 4 - 0 | 5 - 10 | 7 - 4 | 8 - 11 | 10 - 7 |
| | Spruce-Pine Fir | SS | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 17 - 0 | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 17 - 0 |
| | Spruce-Pine Fir | No.1 | 5 - 2 | 8 - 2 | 10 - 9 | 13 - 8 | 15 - 11 | 5 - 2 | 8 - 2 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Spruce-Pine Fir | No.2 | 5 - 2 | 8 - 2 | 10 - 9 | 13 - 8 | 15 - 11 | 5 - 2 | 8 - 2 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Spruce-Pine Fir | No.3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| 24 | Douglas Fir-Larch | SS | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 1 | 17 - 1 | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 1 | 17 - 1 |
| | Douglas Fir-Larch | No.1 | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 2 | 15 - 3 | 5 - 2 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Douglas Fir-Larch | No.2 | 5 - 0 | 7 - 11 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 0 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | Douglas Fir-Larch | No.3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Hem-Fir | SS | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 3 | 16 - 2 | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 3 | 16 - 2 |
| | Hem-Fir | No.1 | 4 - 11 | 7 - 9 | 10 - 2 | 13 - 0 | 15 - 1 | 4 - 11 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Hem-Fir | No.2 | 4 - 8 | 7 - 4 | 9 - 9 | 12 - 1 | 14 - 1 | 4 - 8 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Hem-Fir | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |
| | Southern Pine | SS | 5 - 3 | 8 - 3 | 10 - 10 | 13 - 10 | 16 - 10 | 5 - 3 | 8 - 3 | 10 - 10 | 13 - 10 | 16 - 10 |
| | Southern Pine | No.1 | 5 - 0 | 7 - 11 | 10 - 5 | 12 - 10 | 15 - 3 | 5 - 0 | 7 - 11 | 10 - 2 | 11 - 11 | 14 - 1 |
| | Southern Pine | No.2 | 4 - 10 | 7 - 5 | 9 - 5 | 11 - 3 | 13 - 2 | 4 - 7 | 6 - 11 | 8 - 9 | 10 - 5 | 12 - 3 |
| | Southern Pine | No.3 | 3 - 10 | 5 - 8 | 7 - 1 | 8 - 8 | 10 - 3 | 3 - 6 | 5 - 3 | 6 - 7 | 8 - 0 | 9 - 6 |
| | Spruce-Pine Fir | SS | 4 - 11 | 7 - 9 | 10 - 2 | 13 - 0 | 15 - 10 | 4 - 11 | 7 - 9 | 10 - 2 | 13 - 0 | 15 - 9 |
| | Spruce-Pine Fir | No.1 | 4 - 10 | 7 - 7 | 10 - 0 | 12 - 4 | 14 - 3 | 4 - 10 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Spruce-Pine Fir | No.2 | 4 - 10 | 7 - 7 | 10 - 0 | 12 - 4 | 14 - 3 | 4 - 10 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Spruce-Pine Fir | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |

† Spans are limited to 20 feet in length.

See footnotes 1-3.

## Table 3.26J Rafter Spans for Common Lumber Species

(Ceiling Not Attached to Rafters)

ASD Ground Snow Load[1], $p_{g(ASD)}$ = 70 psf, $L/\Delta_{LL}$ = 180

# GSL = 70 psf
# $L/\Delta_{LL}$ = 180

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 7 - 7 | 11 - 10 | 15 - 8 | 19 - 9 | 20-0† | 7 - 7 | 11 - 10 | 15 - 3 | 18 - 7 | 20-0† |
| | Douglas Fir-Larch | No.1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 8 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | Douglas Fir-Larch | No.2 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Hem-Fir | SS | 7 - 2 | 11 - 3 | 14 - 9 | 18 - 10 | 20-0† | 7 - 2 | 11 - 3 | 14 - 8 | 18 - 0 | 20-0† |
| | Hem-Fir | No.1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 7 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 |
| | Hem-Fir | No.2 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Southern Pine | SS | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 20-0† | 7 - 5 | 11 - 8 | 15 - 4 | 18 - 10 | 20-0† |
| | Southern Pine | No.1 | 7 - 1 | 10 - 7 | 13 - 5 | 15 - 9 | 18 - 8 | 6 - 9 | 10 - 0 | 12 - 8 | 14 - 10 | 17 - 7 |
| | Southern Pine | No.2 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 | 5 - 9 | 8 - 7 | 10 - 11 | 12 - 11 | 15 - 3 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 0 | 11 - 10 |
| | Spruce-Pine Fir | SS | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 0 | 20-0† | 7 - 0 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | Spruce-Pine Fir | No.1 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 2 | 16 - 6 |
| | Spruce-Pine Fir | No.2 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 2 | 16 - 6 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| 16 | Douglas Fir-Larch | SS | 6 - 10 | 10 - 9 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | Douglas Fir-Larch | No.1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | Douglas Fir-Larch | No.2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Douglas Fir-Larch | No.3 | 4 - 6 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 9 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 |
| | Hem-Fir | SS | 6 - 6 | 10 - 2 | 13 - 5 | 16 - 6 | 19 - 2 | 6 - 6 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 0 |
| | Hem-Fir | No.1 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Hem-Fir | No.2 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | Hem-Fir | No.3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | Southern Pine | SS | 6 - 9 | 10 - 7 | 14 - 0 | 17 - 4 | 20-0† | 6 - 9 | 10 - 7 | 13 - 9 | 16 - 4 | 19 - 3 |
| | Southern Pine | No.1 | 6 - 2 | 9 - 2 | 11 - 8 | 13 - 8 | 16 - 2 | 5 - 10 | 8 - 8 | 11 - 0 | 12 - 10 | 15 - 3 |
| | Southern Pine | No.2 | 5 - 3 | 7 - 11 | 10 - 0 | 11 - 11 | 14 - 0 | 5 - 0 | 7 - 5 | 9 - 5 | 11 - 3 | 13 - 2 |
| | Southern Pine | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 2 | 10 - 10 | 3 - 10 | 5 - 8 | 7 - 1 | 8 - 8 | 10 - 3 |
| | Spruce-Pine Fir | SS | 6 - 4 | 10 - 0 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 4 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 |
| | Spruce-Pine Fir | No.1 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 |
| | Spruce-Pine Fir | No.2 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 |
| | Spruce-Pine Fir | No.3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| 19.2 | Douglas Fir-Larch | SS | 6 - 6 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 |
| | Douglas Fir-Larch | No.1 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Douglas Fir-Larch | No.2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Douglas Fir-Larch | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Hem-Fir | SS | 6 - 1 | 9 - 7 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 1 | 9 - 2 | 11 - 8 | 14 - 2 | 16 - 6 |
| | Hem-Fir | No.1 | 5 - 7 | 8 - 2 | 10 - 3 | 12 - 7 | 14 - 7 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | Hem-Fir | No.2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Hem-Fir | No.3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | Southern Pine | SS | 6 - 4 | 10 - 0 | 13 - 2 | 15 - 10 | 18 - 8 | 6 - 4 | 9 - 10 | 12 - 6 | 14 - 11 | 17 - 7 |
| | Southern Pine | No.1 | 5 - 8 | 8 - 5 | 10 - 8 | 12 - 5 | 14 - 9 | 5 - 4 | 7 - 11 | 10 - 0 | 11 - 9 | 13 - 11 |
| | Southern Pine | No.2 | 4 - 10 | 7 - 3 | 9 - 2 | 10 - 10 | 12 - 9 | 4 - 6 | 6 - 10 | 8 - 8 | 10 - 3 | 12 - 1 |
| | Southern Pine | No.3 | 3 - 8 | 5 - 6 | 6 - 11 | 8 - 4 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 4 |
| | Spruce-Pine Fir | SS | 6 - 0 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Spruce-Pine Fir | No.1 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Spruce-Pine Fir | No.2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Spruce-Pine Fir | No.3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| 24 | Douglas Fir-Larch | SS | 6 - 0 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | Douglas Fir-Larch | No.1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Douglas Fir-Larch | No.2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Douglas Fir-Larch | No.3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Hem-Fir | SS | 5 - 8 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 7 | 8 - 3 | 10 - 5 | 12 - 8 | 14 - 9 |
| | Hem-Fir | No.1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Hem-Fir | No.2 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Hem-Fir | No.3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |
| | Southern Pine | SS | 5 - 11 | 9 - 3 | 11 - 11 | 14 - 2 | 16 - 8 | 5 - 11 | 8 - 10 | 11 - 2 | 13 - 4 | 15 - 9 |
| | Southern Pine | No.1 | 5 - 0 | 7 - 6 | 9 - 6 | 11 - 1 | 13 - 2 | 4 - 9 | 7 - 1 | 9 - 0 | 10 - 6 | 12 - 5 |
| | Southern Pine | No.2 | 4 - 4 | 6 - 5 | 8 - 2 | 9 - 9 | 11 - 5 | 4 - 1 | 6 - 1 | 7 - 9 | 9 - 2 | 10 - 9 |
| | Southern Pine | No.3 | 3 - 4 | 4 - 11 | 6 - 2 | 7 - 6 | 8 - 10 | 3 - 1 | 4 - 7 | 5 - 10 | 7 - 1 | 8 - 4 |
| | Spruce-Pine Fir | SS | 5 - 6 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Spruce-Pine Fir | No.1 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Spruce-Pine Fir | No.2 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Spruce-Pine Fir | No.3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |

† Spans are limited to 20 feet in length.

See footnotes 1-3.

## Table 3.26K Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) ASD Ground Snow Load[1], $p_{g(ASD)}$ = 70 psf, $L/\Delta_{LL}$ = 240, Flexible Finish (including gypsum board)

**GSL = 70 psf**
**$L/\Delta_{LL}$ = 240**

| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 6 - 10 | 10 - 9 | 14 - 3 | 18 - 2 | 20-0† | 6 - 10 | 10 - 9 | 14 - 3 | 18 - 2 | 20-0† |
| | Douglas Fir-Larch | No.1 | 6 - 7 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | Douglas Fir-Larch | No.2 | 6 - 6 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Hem-Fir | SS | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 2 | 20-0† | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 2 | 20-0† |
| | Hem-Fir | No.1 | 6 - 4 | 10 - 0 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 4 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 |
| | Hem-Fir | No.2 | 6 - 1 | 9 - 6 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Southern Pine | SS | 6 - 9 | 10 - 7 | 14 - 0 | 17 - 10 | 20-0† | 6 - 9 | 10 - 7 | 14 - 0 | 17 - 10 | 20-0† |
| | Southern Pine | No.1 | 6 - 6 | 10 - 2 | 13 - 5 | 15 - 9 | 18 - 8 | 6 - 6 | 10 - 0 | 12 - 8 | 14 - 10 | 17 - 7 |
| | Southern Pine | No.2 | 6 - 1 | 9 - 2 | 11 - 7 | 13 - 9 | 16 - 2 | 5 - 9 | 8 - 7 | 10 - 11 | 12 - 11 | 15 - 3 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 0 | 11 - 10 |
| | Spruce-Pine Fir | SS | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 20-0† | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 19 - 8 |
| | Spruce-Pine Fir | No.1 | 6 - 2 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 2 | 9 - 2 | 11 - 8 | 14 - 2 | 16 - 6 |
| | Spruce-Pine Fir | No.2 | 6 - 2 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 2 | 9 - 2 | 11 - 8 | 14 - 2 | 16 - 6 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| 16 | Douglas Fir-Larch | SS | 6 - 3 | 9 - 10 | 12 - 11 | 16 - 6 | 19 - 10 | 6 - 3 | 9 - 10 | 12 - 11 | 16 - 1 | 18 - 8 |
| | Douglas Fir-Larch | No.1 | 6 - 0 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | Douglas Fir-Larch | No.2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Douglas Fir-Larch | No.3 | 4 - 6 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 9 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 |
| | Hem-Fir | SS | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 7 | 18 - 11 | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 7 | 18 - 0 |
| | Hem-Fir | No.1 | 5 - 9 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Hem-Fir | No.2 | 5 - 6 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | Hem-Fir | No.3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | Southern Pine | SS | 6 - 1 | 9 - 7 | 12 - 8 | 16 - 2 | 19 - 8 | 6 - 1 | 9 - 7 | 12 - 8 | 16 - 2 | 19 - 3 |
| | Southern Pine | No.1 | 5 - 11 | 9 - 2 | 11 - 8 | 13 - 8 | 16 - 2 | 5 - 10 | 8 - 8 | 11 - 0 | 12 - 10 | 15 - 3 |
| | Southern Pine | No.2 | 5 - 3 | 7 - 11 | 10 - 0 | 11 - 11 | 14 - 0 | 5 - 0 | 7 - 5 | 9 - 5 | 11 - 3 | 13 - 2 |
| | Southern Pine | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 2 | 10 - 10 | 3 - 10 | 5 - 8 | 7 - 1 | 8 - 8 | 10 - 3 |
| | Spruce-Pine Fir | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 3 | 18 - 1 | 5 - 9 | 9 - 1 | 11 - 11 | 14 - 8 | 17 - 1 |
| | Spruce-Pine Fir | No.1 | 5 - 8 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 |
| | Spruce-Pine Fir | No.2 | 5 - 8 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 |
| | Spruce-Pine Fir | No.3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| 19.2 | Douglas Fir-Larch | SS | 5 - 10 | 9 - 3 | 12 - 2 | 15 - 6 | 18 - 1 | 5 - 10 | 9 - 3 | 12 - 0 | 14 - 8 | 17 - 1 |
| | Douglas Fir-Larch | No.1 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Douglas Fir-Larch | No.2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Douglas Fir-Larch | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Hem-Fir | SS | 5 - 6 | 8 - 8 | 11 - 6 | 14 - 8 | 17 - 6 | 5 - 6 | 8 - 8 | 11 - 6 | 14 - 2 | 16 - 6 |
| | Hem-Fir | No.1 | 5 - 5 | 8 - 2 | 10 - 3 | 12 - 7 | 14 - 7 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | Hem-Fir | No.2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Hem-Fir | No.3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | Southern Pine | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 3 | 18 - 6 | 5 - 9 | 9 - 1 | 11 - 11 | 14 - 11 | 17 - 7 |
| | Southern Pine | No.1 | 5 - 6 | 8 - 5 | 10 - 8 | 12 - 5 | 14 - 9 | 5 - 4 | 7 - 11 | 10 - 0 | 11 - 9 | 13 - 11 |
| | Southern Pine | No.2 | 4 - 10 | 7 - 3 | 9 - 2 | 10 - 10 | 12 - 9 | 4 - 6 | 6 - 10 | 8 - 8 | 10 - 3 | 12 - 1 |
| | Southern Pine | No.3 | 3 - 8 | 5 - 6 | 6 - 11 | 8 - 4 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 4 |
| | Spruce-Pine Fir | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 3 | 16 - 6 | 5 - 5 | 8 - 6 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Spruce-Pine Fir | No.1 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Spruce-Pine Fir | No.2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Spruce-Pine Fir | No.3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| 24 | Douglas Fir-Larch | SS | 5 - 5 | 8 - 7 | 11 - 3 | 13 - 11 | 16 - 2 | 5 - 5 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | Douglas Fir-Larch | No.1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Douglas Fir-Larch | No.2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Douglas Fir-Larch | No.3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Hem-Fir | SS | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 6 | 15 - 7 | 5 - 2 | 8 - 1 | 10 - 5 | 12 - 8 | 14 - 9 |
| | Hem-Fir | No.1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Hem-Fir | No.2 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Hem-Fir | No.3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |
| | Southern Pine | SS | 5 - 4 | 8 - 5 | 11 - 1 | 14 - 2 | 16 - 8 | 5 - 4 | 8 - 5 | 11 - 1 | 13 - 4 | 15 - 9 |
| | Southern Pine | No.1 | 5 - 0 | 7 - 6 | 9 - 6 | 11 - 1 | 13 - 2 | 4 - 9 | 7 - 1 | 9 - 0 | 10 - 6 | 12 - 5 |
| | Southern Pine | No.2 | 4 - 4 | 6 - 5 | 8 - 2 | 9 - 9 | 11 - 5 | 4 - 1 | 6 - 1 | 7 - 9 | 9 - 2 | 10 - 9 |
| | Southern Pine | No.3 | 3 - 4 | 4 - 11 | 6 - 2 | 7 - 6 | 8 - 10 | 3 - 1 | 4 - 7 | 5 - 10 | 7 - 1 | 8 - 4 |
| | Spruce-Pine Fir | SS | 5 - 0 | 7 - 11 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Spruce-Pine Fir | No.1 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Spruce-Pine Fir | No.2 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Spruce-Pine Fir | No.3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |

† Spans are limited to 20 feet in length.

See footnotes 1-3.

## Table 3.26L Rafter Spans for Common Lumber Species

(Ceiling Attached to Rafters) ASD Ground Snow Load[1], $p_{g(ASD)}$ = 70 psf, $L/\Delta_{LL}$ = 360, Brittle Finish (including plaster and stucco)

**GSL = 70 psf**
**$L/\Delta_{LL}$ = 360**

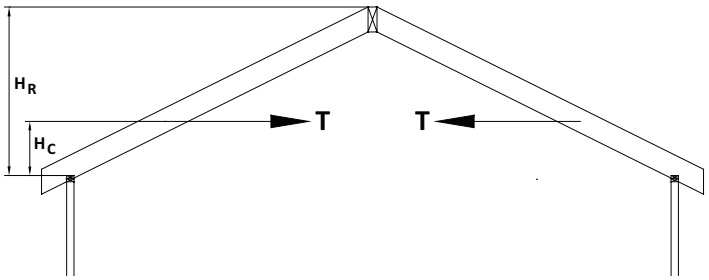
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans[2,3] | | | | | | | | | |
| Rafter Spacing (in.) | Species | Grade | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) | (ft-in.) |
| 12 | Douglas Fir-Larch | SS | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 19 - 3 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 19 - 3 |
| | Douglas Fir-Larch | No.1 | 5 - 9 | 9 - 1 | 12 - 0 | 15 - 3 | 18 - 7 | 5 - 9 | 9 - 1 | 12 - 0 | 15 - 2 | 17 - 7 |
| | Douglas Fir-Larch | No.2 | 5 - 8 | 8 - 11 | 11 - 9 | 15 - 0 | 17 - 9 | 5 - 8 | 8 - 11 | 11 - 9 | 14 - 5 | 16 - 8 |
| | Douglas Fir-Larch | No.3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Hem-Fir | SS | 5 - 8 | 8 - 11 | 11 - 9 | 15 - 0 | 18 - 2 | 5 - 8 | 8 - 11 | 11 - 9 | 15 - 0 | 18 - 2 |
| | Hem-Fir | No.1 | 5 - 6 | 8 - 8 | 11 - 6 | 14 - 8 | 17 - 10 | 5 - 6 | 8 - 8 | 11 - 6 | 14 - 8 | 17 - 5 |
| | Hem-Fir | No.2 | 5 - 3 | 8 - 4 | 10 - 11 | 14 - 0 | 17 - 0 | 5 - 3 | 8 - 4 | 10 - 11 | 14 - 0 | 16 - 3 |
| | Hem-Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Southern Pine | SS | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 7 | 18 - 11 | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 7 | 18 - 11 |
| | Southern Pine | No.1 | 5 - 8 | 8 - 11 | 11 - 9 | 15 - 0 | 18 - 2 | 5 - 8 | 8 - 11 | 11 - 9 | 14 - 10 | 17 - 7 |
| | Southern Pine | No.2 | 5 - 5 | 8 - 6 | 11 - 3 | 13 - 9 | 16 - 2 | 5 - 5 | 8 - 6 | 10 - 11 | 12 - 11 | 15 - 3 |
| | Southern Pine | No.3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 7 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 0 | 11 - 10 |
| | Spruce-Pine Fir | SS | 5 - 6 | 8 - 8 | 11 - 6 | 14 - 8 | 17 - 10 | 5 - 6 | 8 - 8 | 11 - 6 | 14 - 8 | 17 - 10 |
| | Spruce-Pine Fir | No.1 | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 5 | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 2 | 16 - 6 |
| | Spruce-Pine Fir | No.2 | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 5 | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 2 | 16 - 6 |
| | Spruce-Pine Fir | No.3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| 16 | Douglas Fir-Larch | SS | 5 - 5 | 8 - 7 | 11 - 3 | 14 - 5 | 17 - 6 | 5 - 5 | 8 - 7 | 11 - 3 | 14 - 5 | 17 - 6 |
| | Douglas Fir-Larch | No.1 | 5 - 3 | 8 - 3 | 10 - 10 | 13 - 10 | 16 - 2 | 5 - 3 | 8 - 3 | 10 - 9 | 13 - 2 | 15 - 3 |
| | Douglas Fir-Larch | No.2 | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 3 | 15 - 4 | 5 - 2 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Douglas Fir-Larch | No.3 | 4 - 6 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 9 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 |
| | Hem-Fir | SS | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 7 | 16 - 6 | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 7 | 16 - 6 |
| | Hem-Fir | No.1 | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 4 | 16 - 0 | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 0 | 15 - 1 |
| | Hem-Fir | No.2 | 4 - 10 | 7 - 7 | 9 - 11 | 12 - 8 | 14 - 11 | 4 - 10 | 7 - 7 | 9 - 11 | 12 - 1 | 14 - 1 |
| | Hem-Fir | No.3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | Southern Pine | SS | 5 - 4 | 8 - 5 | 11 - 1 | 14 - 2 | 17 - 2 | 5 - 4 | 8 - 5 | 11 - 1 | 14 - 2 | 17 - 2 |
| | Southern Pine | No.1 | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 7 | 16 - 2 | 5 - 2 | 8 - 1 | 10 - 8 | 12 - 10 | 15 - 3 |
| | Southern Pine | No.2 | 4 - 11 | 7 - 9 | 10 - 0 | 11 - 11 | 14 - 0 | 4 - 11 | 7 - 5 | 9 - 5 | 11 - 3 | 13 - 2 |
| | Southern Pine | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 2 | 10 - 10 | 3 - 10 | 5 - 8 | 7 - 1 | 8 - 8 | 10 - 3 |
| | Spruce-Pine Fir | SS | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 4 | 16 - 2 | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 4 | 16 - 2 |
| | Spruce-Pine Fir | No.1 | 4 - 11 | 7 - 9 | 10 - 2 | 13 - 0 | 15 - 2 | 4 - 11 | 7 - 9 | 10 - 1 | 12 - 4 | 14 - 3 |
| | Spruce-Pine Fir | No.2 | 4 - 11 | 7 - 9 | 10 - 2 | 13 - 0 | 15 - 2 | 4 - 11 | 7 - 9 | 10 - 1 | 12 - 4 | 14 - 3 |
| | Spruce-Pine Fir | No.3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| 19.2 | Douglas Fir-Larch | SS | 5 - 2 | 8 - 1 | 10 - 7 | 13 - 7 | 16 - 6 | 5 - 2 | 8 - 1 | 10 - 7 | 13 - 7 | 16 - 6 |
| | Douglas Fir-Larch | No.1 | 4 - 11 | 7 - 9 | 10 - 3 | 12 - 9 | 14 - 9 | 4 - 11 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Douglas Fir-Larch | No.2 | 4 - 10 | 7 - 7 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 10 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | Douglas Fir-Larch | No.3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Hem-Fir | SS | 4 - 10 | 7 - 7 | 10 - 0 | 12 - 10 | 15 - 7 | 4 - 10 | 7 - 7 | 10 - 0 | 12 - 10 | 15 - 7 |
| | Hem-Fir | No.1 | 4 - 9 | 7 - 5 | 9 - 10 | 12 - 6 | 14 - 7 | 4 - 9 | 7 - 5 | 9 - 8 | 11 - 10 | 13 - 9 |
| | Hem-Fir | No.2 | 4 - 6 | 7 - 1 | 9 - 4 | 11 - 9 | 13 - 7 | 4 - 6 | 7 - 1 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Hem-Fir | No.3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | Southern Pine | SS | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 4 | 16 - 2 | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 4 | 16 - 2 |
| | Southern Pine | No.1 | 4 - 10 | 7 - 7 | 10 - 0 | 12 - 5 | 14 - 9 | 4 - 10 | 7 - 7 | 10 - 0 | 11 - 9 | 13 - 11 |
| | Southern Pine | No.2 | 4 - 8 | 7 - 3 | 9 - 2 | 10 - 10 | 12 - 9 | 4 - 6 | 6 - 10 | 8 - 8 | 10 - 3 | 12 - 1 |
| | Southern Pine | No.3 | 3 - 8 | 5 - 6 | 6 - 11 | 8 - 4 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 4 |
| | Spruce-Pine Fir | SS | 4 - 9 | 7 - 5 | 9 - 10 | 12 - 6 | 15 - 3 | 4 - 9 | 7 - 5 | 9 - 10 | 12 - 6 | 15 - 3 |
| | Spruce-Pine Fir | No.1 | 4 - 8 | 7 - 3 | 9 - 7 | 11 - 11 | 13 - 10 | 4 - 8 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Spruce-Pine Fir | No.2 | 4 - 8 | 7 - 3 | 9 - 7 | 11 - 11 | 13 - 10 | 4 - 8 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Spruce-Pine Fir | No.3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| 24 | Douglas Fir-Larch | SS | 4 - 9 | 7 - 6 | 9 - 10 | 12 - 7 | 15 - 4 | 4 - 9 | 7 - 6 | 9 - 10 | 12 - 7 | 15 - 3 |
| | Douglas Fir-Larch | No.1 | 4 - 7 | 7 - 2 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 7 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Douglas Fir-Larch | No.2 | 4 - 6 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Douglas Fir-Larch | No.3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Hem-Fir | SS | 4 - 6 | 7 - 1 | 9 - 4 | 11 - 11 | 14 - 5 | 4 - 6 | 7 - 1 | 9 - 4 | 11 - 11 | 14 - 5 |
| | Hem-Fir | No.1 | 4 - 5 | 6 - 11 | 9 - 1 | 11 - 3 | 13 - 0 | 4 - 5 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Hem-Fir | No.2 | 4 - 2 | 6 - 7 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Hem-Fir | No.3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |
| | Southern Pine | SS | 4 - 8 | 7 - 4 | 9 - 8 | 12 - 4 | 15 - 0 | 4 - 8 | 7 - 4 | 9 - 8 | 12 - 4 | 15 - 0 |
| | Southern Pine | No.1 | 4 - 6 | 7 - 1 | 9 - 4 | 11 - 1 | 13 - 2 | 4 - 6 | 7 - 1 | 9 - 0 | 10 - 6 | 12 - 5 |
| | Southern Pine | No.2 | 4 - 4 | 6 - 5 | 8 - 2 | 9 - 9 | 11 - 5 | 4 - 1 | 6 - 1 | 7 - 9 | 9 - 2 | 10 - 9 |
| | Southern Pine | No.3 | 3 - 4 | 4 - 11 | 6 - 2 | 7 - 6 | 8 - 10 | 3 - 1 | 4 - 7 | 5 - 10 | 7 - 1 | 8 - 4 |
| | Spruce-Pine Fir | SS | 4 - 5 | 6 - 11 | 9 - 1 | 11 - 7 | 14 - 2 | 4 - 5 | 6 - 11 | 9 - 1 | 11 - 7 | 13 - 11 |
| | Spruce-Pine Fir | No.1 | 4 - 4 | 6 - 9 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Spruce-Pine Fir | No.2 | 4 - 4 | 6 - 9 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Spruce-Pine Fir | No.3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |

† Spans are limited to 20 feet in length.
See footnotes 1-3.

## Footnotes to Tables 3.26D-L

1 Tabulated rafter spans (horizontal projection) are calculated using unbalanced allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

2 Tabulated rafter spans assume ceiling joists or rafter ties are located at the bottom of the attic space to resist thrust. When ceiling joists or rafter ties are located higher in the attic space and are used to resist thrust, the rafter spans shall be reduced using the factors given in the following table:




| Ceiling Height/Top Plate to Roof Ridge Height ($H_C/H_R$) | Rafter Span Adjustment Factors |
|---|---|
| **1/2** | 0.58 |
| **1/3** | 0.67 |
| **1/4** | 0.76 |
| **1/5** | 0.83 |
| **1/6** | 0.90 |
| **1/7.5 and less** | 1.00 |

**Note:** Lateral deflection of the rafter below the rafter ties may exceed 3/4 inch when rafter ties are located above one-third of the top plate to roof ridge height, $H_R$, or when $H_c$ is greater than 2 feet and may require additional consideration.

3 Spans checked for live load deflection only.

## Table 3.26M Rafter Deflection Limit = L/180

# Exposure B

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Wind Speed 3-second gust (mph) | | | 90 | | | | | 95 | | | | | 100 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 10 - 7 | 18 - 4 | 24 - 2 | 26-0† | 26-0† | 10 - 2 | 18 - 1 | 23 - 10 | 26-0† | 26-0† | 9 - 9 | 17 - 6 | 23 - 0 | 26-0† | 26-0† |
| | DFL | No.1 | 10 - 2 | 17 - 8 | 23 - 3 | 26-0† | 26-0† | 9 - 8 | 17 - 5 | 23 - 0 | 26-0† | 26-0† | 9 - 4 | 16 - 8 | 22 - 2 | 26-0† | 26-0† |
| | DFL | No.2 | 9 - 11 | 17 - 4 | 22 - 10 | 26-0† | 26-0† | 9 - 6 | 17 - 0 | 22 - 6 | 26-0† | 26-0† | 9 - 1 | 16 - 2 | 21 - 9 | 26-0† | 26-0† |
| | DFL | No.3 | 9 - 4 | 16 - 7 | 21 - 10 | 26-0† | 26-0† | 9 - 0 | 16 - 0 | 21 - 6 | 26-0† | 26-0† | 8 - 7 | 15 - 3 | 20 - 10 | 26-0† | 26-0† |
| | HF | SS | 9 - 11 | 17 - 4 | 22 - 10 | 26-0† | 26-0† | 9 - 6 | 17 - 0 | 22 - 6 | 26-0† | 26-0† | 9 - 1 | 16 - 2 | 21 - 9 | 26-0† | 26-0† |
| | HF | No.1 | 9 - 8 | 16 - 11 | 22 - 4 | 26-0† | 26-0† | 9 - 3 | 16 - 6 | 22 - 0 | 26-0† | 26-0† | 8 - 10 | 15 - 9 | 21 - 3 | 26-0† | 26-0† |
| | HF | No.2 | 9 - 1 | 16 - 2 | 21 - 4 | 26-0† | 26-0† | 8 - 8 | 15 - 5 | 21 - 0 | 26-0† | 26-0† | 8 - 4 | 14 - 9 | 20 - 3 | 25 - 11 | 26-0† |
| | HF | No.3 | 8 - 10 | 15 - 8 | 20 - 9 | 26-0† | 26-0† | 8 - 5 | 14 - 11 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† |
| | SP | SS | 10 - 5 | 18 - 0 | 23 - 9 | 26-0† | 26-0† | 9 - 11 | 17 - 9 | 23 - 5 | 26-0† | 26-0† | 9 - 6 | 17 - 1 | 22 - 7 | 26-0† | 26-0† |
| | SP | No.1 | 9 - 11 | 17 - 4 | 22 - 10 | 26-0† | 26-0† | 9 - 6 | 17 - 0 | 22 - 6 | 26-0† | 26-0† | 9 - 1 | 16 - 2 | 21 - 9 | 26-0† | 26-0† |
| | SP | No.2 | 9 - 4 | 16 - 7 | 21 - 10 | 26-0† | 26-0† | 9 - 0 | 16 - 0 | 21 - 6 | 26-0† | 26-0† | 8 - 7 | 15 - 3 | 20 - 10 | 26-0† | 26-0† |
| | SP | No.3 | 9 - 1 | 16 - 2 | 21 - 0 | 25 - 6 | 26-0† | 8 - 8 | 15 - 5 | 20 - 7 | 24 - 11 | 26-0† | 8 - 2 | 14 - 5 | 19 - 6 | 23 - 8 | 26-0† |
| | SPF | SS | 9 - 8 | 16 - 11 | 22 - 4 | 26-0† | 26-0† | 9 - 3 | 16 - 6 | 22 - 0 | 26-0† | 26-0† | 8 - 10 | 15 - 9 | 21 - 3 | 26-0† | 26-0† |
| | SPF | No.1 | 9 - 4 | 16 - 7 | 21 - 10 | 26-0† | 26-0† | 9 - 0 | 16 - 0 | 21 - 6 | 26-0† | 26-0† | 8 - 7 | 15 - 3 | 20 - 10 | 26-0† | 26-0† |
| | SPF | No.2 | 9 - 4 | 16 - 7 | 21 - 10 | 26-0† | 26-0† | 9 - 0 | 16 - 0 | 21 - 6 | 26-0† | 26-0† | 8 - 7 | 15 - 3 | 20 - 10 | 26-0† | 26-0† |
| | SPF | No.3 | 8 - 10 | 15 - 8 | 20 - 9 | 26-0† | 26-0† | 8 - 5 | 14 - 11 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† |
| 16 | DFL | SS | 9 - 5 | 16 - 8 | 21 - 11 | 26-0† | 26-0† | 9 - 0 | 16 - 1 | 21 - 8 | 26-0† | 26-0† | 8 - 8 | 15 - 4 | 20 - 11 | 26-0† | 26-0† |
| | DFL | No.1 | 9 - 0 | 16 - 1 | 21 - 2 | 26-0† | 26-0† | 8 - 8 | 15 - 4 | 20 - 10 | 26-0† | 26-0† | 8 - 3 | 14 - 7 | 20 - 2 | 25 - 9 | 26-0† |
| | DFL | No.2 | 8 - 10 | 15 - 8 | 20 - 9 | 26-0† | 26-0† | 8 - 5 | 14 - 11 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† |
| | DFL | No.3 | 8 - 4 | 14 - 9 | 19 - 10 | 24 - 4 | 26-0† | 8 - 0 | 14 - 1 | 19 - 6 | 23 - 10 | 26-0† | 7 - 8 | 13 - 2 | 18 - 6 | 22 - 8 | 26-0† |
| | HF | SS | 8 - 10 | 15 - 8 | 20 - 9 | 26-0† | 26-0† | 8 - 5 | 14 - 11 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† |
| | HF | No.1 | 8 - 7 | 15 - 2 | 20 - 3 | 25 - 11 | 26-0† | 8 - 2 | 14 - 6 | 20 - 0 | 25 - 6 | 26-0† | 7 - 10 | 13 - 10 | 19 - 4 | 24 - 8 | 26-0† |
| | HF | No.2 | 8 - 1 | 14 - 3 | 19 - 4 | 24 - 8 | 26-0† | 7 - 9 | 13 - 7 | 19 - 1 | 24 - 4 | 26-0† | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† |
| | HF | No.3 | 7 - 10 | 13 - 9 | 18 - 10 | 23 - 9 | 26-0† | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 3 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 1 | 25 - 7 |
| | SP | SS | 9 - 3 | 16 - 4 | 21 - 7 | 26-0† | 26-0† | 8 - 10 | 15 - 8 | 21 - 3 | 26-0† | 26-0† | 8 - 6 | 15 - 0 | 20 - 7 | 26-0† | 26-0† |
| | SP | No.1 | 8 - 10 | 15 - 8 | 20 - 9 | 26-0† | 26-0† | 8 - 5 | 14 - 11 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† |
| | SP | No.2 | 8 - 4 | 14 - 9 | 19 - 10 | 25 - 4 | 26-0† | 8 - 0 | 14 - 1 | 19 - 7 | 24 - 11 | 26-0† | 7 - 8 | 13 - 5 | 18 - 11 | 24 - 1 | 26-0† |
| | SP | No.3 | 7 - 10 | 13 - 7 | 18 - 2 | 22 - 1 | 26-0† | 7 - 3 | 12 - 6 | 17 - 10 | 21 - 7 | 25 - 7 | 6 - 9 | 11 - 7 | 16 - 8 | 20 - 6 | 24 - 4 |
| | SPF | SS | 8 - 7 | 15 - 2 | 20 - 3 | 25 - 11 | 26-0† | 8 - 2 | 14 - 6 | 20 - 0 | 25 - 6 | 26-0† | 7 - 10 | 13 - 10 | 19 - 4 | 24 - 8 | 26-0† |
| | SPF | No.1 | 8 - 4 | 14 - 9 | 19 - 10 | 25 - 4 | 26-0† | 8 - 0 | 14 - 1 | 19 - 7 | 24 - 11 | 26-0† | 7 - 8 | 13 - 5 | 18 - 11 | 24 - 1 | 26-0† |
| | SPF | No.2 | 8 - 4 | 14 - 9 | 19 - 10 | 25 - 4 | 26-0† | 8 - 0 | 14 - 1 | 19 - 7 | 24 - 11 | 26-0† | 7 - 8 | 13 - 5 | 18 - 11 | 24 - 1 | 26-0† |
| | SPF | No.3 | 7 - 10 | 13 - 9 | 18 - 10 | 23 - 9 | 26-0† | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 3 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 1 | 25 - 7 |
| 19.2 | DFL | SS | 8 - 9 | 15 - 7 | 20 - 8 | 26-0† | 26-0† | 8 - 5 | 14 - 10 | 20 - 4 | 26 - 0 | 26-0† | 8 - 0 | 14 - 2 | 19 - 8 | 25 - 1 | 26-0† |
| | DFL | No.1 | 8 - 4 | 14 - 10 | 19 - 11 | 25 - 5 | 26-0† | 8 - 0 | 14 - 1 | 19 - 8 | 25 - 1 | 26-0† | 7 - 8 | 13 - 6 | 19 - 0 | 24 - 2 | 26-0† |
| | DFL | No.2 | 8 - 2 | 14 - 5 | 19 - 6 | 24 - 11 | 26-0† | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 9 | 26-0† |
| | DFL | No.3 | 7 - 9 | 13 - 6 | 18 - 2 | 22 - 3 | 25 - 9 | 7 - 4 | 12 - 5 | 17 - 10 | 21 - 9 | 25 - 3 | 6 - 10 | 11 - 6 | 16 - 8 | 20 - 8 | 24 - 0 |
| | HF | SS | 8 - 2 | 14 - 5 | 19 - 6 | 24 - 11 | 26-0† | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 9 | 26-0† |
| | HF | No.1 | 7 - 11 | 14 - 0 | 19 - 1 | 24 - 4 | 26-0† | 7 - 7 | 13 - 4 | 18 - 10 | 24 - 0 | 26-0† | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 3 | 26-0† |
| | HF | No.2 | 7 - 6 | 13 - 2 | 18 - 2 | 23 - 3 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 11 | 26-0† | 6 - 11 | 12 - 0 | 17 - 4 | 22 - 2 | 26-0† |
| | HF | No.3 | 7 - 3 | 12 - 9 | 17 - 9 | 21 - 8 | 25 - 2 | 7 - 0 | 12 - 0 | 17 - 5 | 21 - 3 | 24 - 7 | 6 - 7 | 11 - 1 | 16 - 0 | 20 - 2 | 23 - 5 |
| | SP | SS | 8 - 7 | 15 - 2 | 20 - 3 | 25 - 11 | 26-0† | 8 - 2 | 14 - 6 | 20 - 0 | 25 - 6 | 26-0† | 7 - 10 | 13 - 10 | 19 - 4 | 24 - 8 | 26-0† |
| | SP | No.1 | 8 - 2 | 14 - 5 | 19 - 6 | 24 - 11 | 26-0† | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 9 | 26-0† |
| | SP | No.2 | 7 - 9 | 13 - 7 | 18 - 8 | 23 - 10 | 26-0† | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† | 7 - 1 | 12 - 5 | 17 - 9 | 22 - 8 | 26-0† |
| | SP | No.3 | 6 - 11 | 11 - 10 | 16 - 7 | 20 - 2 | 23 - 10 | 6 - 5 | 10 - 11 | 15 - 7 | 19 - 9 | 23 - 4 | 6 - 0 | 10 - 2 | 14 - 4 | 18 - 9 | 22 - 2 |
| | SPF | SS | 7 - 11 | 14 - 0 | 19 - 1 | 24 - 4 | 26-0† | 7 - 7 | 13 - 4 | 18 - 10 | 24 - 0 | 26-0† | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 3 | 26-0† |
| | SPF | No.1 | 7 - 9 | 13 - 7 | 18 - 8 | 23 - 10 | 26-0† | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† | 7 - 1 | 12 - 5 | 17 - 9 | 22 - 8 | 26-0† |
| | SPF | No.2 | 7 - 9 | 13 - 7 | 18 - 8 | 23 - 10 | 26-0† | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† | 7 - 1 | 12 - 5 | 17 - 9 | 22 - 8 | 26-0† |
| | SPF | No.3 | 7 - 3 | 12 - 9 | 17 - 9 | 21 - 8 | 25 - 2 | 7 - 0 | 12 - 0 | 17 - 5 | 21 - 3 | 24 - 7 | 6 - 7 | 11 - 1 | 16 - 0 | 20 - 2 | 23 - 5 |
| 24 | DFL | SS | 8 - 0 | 14 - 1 | 19 - 2 | 24 - 6 | 26-0† | 7 - 8 | 13 - 5 | 18 - 11 | 24 - 2 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† |
| | DFL | No.1 | 7 - 8 | 13 - 5 | 18 - 6 | 23 - 7 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 3 | 26-0† | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† |
| | DFL | No.2 | 7 - 6 | 13 - 1 | 18 - 1 | 23 - 1 | 26-0† | 7 - 2 | 12 - 6 | 17 - 10 | 22 - 9 | 26-0† | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† |
| | DFL | No.3 | 6 - 9 | 11 - 5 | 16 - 3 | 19 - 10 | 23 - 0 | 6 - 4 | 10 - 7 | 15 - 1 | 19 - 5 | 22 - 7 | 5 - 11 | 9 - 10 | 13 - 11 | 18 - 6 | 21 - 5 |
| | HF | SS | 7 - 6 | 13 - 1 | 18 - 1 | 23 - 1 | 26-0† | 7 - 2 | 12 - 6 | 17 - 10 | 22 - 9 | 26-0† | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† |
| | HF | No.1 | 7 - 3 | 12 - 9 | 17 - 9 | 22 - 7 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 8 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | HF | No.2 | 6 - 11 | 12 - 0 | 16 - 11 | 21 - 7 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 10 | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 7 | 25 - 0 |
| | HF | No.3 | 6 - 7 | 11 - 0 | 15 - 10 | 19 - 5 | 22 - 6 | 6 - 1 | 10 - 2 | 14 - 6 | 19 - 0 | 22 - 0 | 5 - 9 | 9 - 6 | 13 - 4 | 18 - 0 | 20 - 11 |
| | SP | SS | 7 - 10 | 13 - 9 | 18 - 10 | 24 - 0 | 26-0† | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 8 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 11 | 26-0† |
| | SP | No.1 | 7 - 6 | 13 - 1 | 18 - 1 | 23 - 1 | 26-0† | 7 - 2 | 12 - 6 | 17 - 10 | 22 - 9 | 26-0† | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† |
| | SP | No.2 | 7 - 1 | 12 - 4 | 17 - 4 | 22 - 1 | 26-0† | 6 - 9 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 7 |
| | SP | No.3 | 6 - 0 | 10 - 1 | 14 - 2 | 18 - 0 | 21 - 4 | 5 - 7 | 9 - 4 | 13 - 1 | 17 - 8 | 20 - 11 | 5 - 3 | 8 - 9 | 12 - 1 | 16 - 4 | 19 - 10 |
| | SPF | SS | 7 - 3 | 12 - 9 | 17 - 9 | 22 - 7 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 8 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | SPF | No.1 | 7 - 1 | 12 - 4 | 17 - 4 | 22 - 1 | 26-0† | 6 - 9 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 7 |
| | SPF | No.2 | 7 - 1 | 12 - 4 | 17 - 4 | 22 - 1 | 26-0† | 6 - 9 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 7 |
| | SPF | No.3 | 6 - 7 | 11 - 0 | 15 - 10 | 19 - 5 | 22 - 6 | 6 - 1 | 10 - 2 | 14 - 6 | 19 - 0 | 22 - 0 | 5 - 9 | 9 - 6 | 13 - 4 | 18 - 0 | 20 - 11 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

# Exposure B

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Rafter Spacing (in.) | Species | Grade | Wind Speed 3-second gust (mph) | 105 | | | | | 110 | | | | | 115 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | | 9 - 4 | 16 - 9 | 22 - 3 | 26-0† | 26-0† | 9 - 0 | 16 - 1 | 21 - 7 | 26-0† | 26-0† | 8 - 8 | 15 - 5 | 21 - 0 | 26-0† | 26-0† |
| | DFL | No.1 | | 8 - 11 | 15 - 11 | 21 - 6 | 26-0† | 26-0† | 8 - 7 | 15 - 3 | 20 - 10 | 26-0† | 26-0† | 8 - 4 | 14 - 8 | 20 - 3 | 25 - 9 | 26-0† |
| | DFL | No.2 | | 8 - 9 | 15 - 6 | 21 - 1 | 26-0† | 26-0† | 8 - 5 | 14 - 10 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 10 | 25 - 3 | 26-0† |
| | DFL | No.3 | | 8 - 3 | 14 - 7 | 20 - 2 | 24 - 11 | 26-0† | 7 - 11 | 14 - 0 | 19 - 5 | 23 - 9 | 26-0† | 7 - 8 | 13 - 3 | 18 - 7 | 22 - 9 | 26-0† |
| | HF | SS | | 8 - 9 | 15 - 6 | 21 - 1 | 26-0† | 26-0† | 8 - 5 | 14 - 10 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 10 | 25 - 3 | 26-0† |
| | HF | No.1 | | 8 - 6 | 15 - 1 | 20 - 7 | 26-0† | 26-0† | 8 - 2 | 14 - 5 | 20 - 0 | 25 - 6 | 26-0† | 7 - 11 | 13 - 11 | 19 - 5 | 24 - 9 | 26-0† |
| | HF | No.2 | | 8 - 0 | 14 - 2 | 19 - 8 | 25 - 1 | 26-0† | 7 - 9 | 13 - 7 | 19 - 1 | 24 - 4 | 26-0† | 7 - 5 | 13 - 1 | 18 - 6 | 23 - 7 | 26-0† |
| | HF | No.3 | | 7 - 9 | 13 - 8 | 19 - 1 | 24 - 3 | 26-0† | 7 - 6 | 13 - 1 | 18 - 6 | 23 - 2 | 26-0† | 7 - 3 | 12 - 7 | 18 - 0 | 22 - 2 | 25 - 9 |
| | SP | SS | | 9 - 2 | 16 - 4 | 21 - 11 | 26-0† | 26-0† | 8 - 10 | 15 - 8 | 21 - 3 | 26-0† | 26-0† | 8 - 6 | 15 - 1 | 20 - 7 | 26-0† | 26-0† |
| | SP | No.1 | | 8 - 9 | 15 - 6 | 21 - 1 | 26-0† | 26-0† | 8 - 5 | 14 - 10 | 20 - 5 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 10 | 25 - 3 | 26-0† |
| | SP | No.2 | | 8 - 3 | 14 - 7 | 20 - 2 | 25 - 8 | 26-0† | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 11 | 26-0† | 7 - 8 | 13 - 6 | 18 - 11 | 24 - 2 | 26-0† |
| | SP | No.3 | | 7 - 8 | 13 - 4 | 18 - 7 | 22 - 7 | 26-0† | 7 - 3 | 12 - 6 | 17 - 9 | 21 - 7 | 25 - 6 | 6 - 10 | 11 - 8 | 16 - 9 | 20 - 7 | 24 - 5 |
| | SPF | SS | | 8 - 6 | 15 - 1 | 20 - 7 | 26-0† | 26-0† | 8 - 2 | 14 - 5 | 20 - 0 | 25 - 6 | 26-0† | 7 - 11 | 13 - 11 | 19 - 5 | 24 - 9 | 26-0† |
| | SPF | No.1 | | 8 - 3 | 14 - 7 | 20 - 2 | 25 - 8 | 26-0† | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 11 | 26-0† | 7 - 8 | 13 - 6 | 18 - 11 | 24 - 2 | 26-0† |
| | SPF | No.2 | | 8 - 3 | 14 - 7 | 20 - 2 | 25 - 8 | 26-0† | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 11 | 26-0† | 7 - 8 | 13 - 6 | 18 - 11 | 24 - 2 | 26-0† |
| | SPF | No.3 | | 7 - 9 | 13 - 8 | 19 - 1 | 24 - 3 | 26-0† | 7 - 6 | 13 - 1 | 18 - 6 | 23 - 2 | 26-0† | 7 - 3 | 12 - 7 | 18 - 0 | 22 - 2 | 25 - 9 |
| 16 | DFL | SS | | 8 - 4 | 14 - 9 | 20 - 3 | 25 - 10 | 26-0† | 8 - 0 | 14 - 1 | 19 - 8 | 25 - 1 | 26-0† | 7 - 9 | 13 - 7 | 19 - 1 | 24 - 4 | 26-0† |
| | DFL | No.1 | | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 11 | 26-0† | 7 - 8 | 13 - 5 | 18 - 11 | 24 - 2 | 26-0† | 7 - 5 | 12 - 11 | 18 - 4 | 23 - 5 | 26-0† |
| | DFL | No.2 | | 7 - 9 | 13 - 8 | 19 - 1 | 24 - 5 | 26-0† | 7 - 6 | 13 - 1 | 18 - 6 | 23 - 8 | 26-0† | 7 - 3 | 12 - 7 | 18 - 0 | 23 - 0 | 26-0† |
| | DFL | No.3 | | 7 - 3 | 12 - 3 | 17 - 8 | 21 - 7 | 25 - 0 | 6 - 9 | 11 - 5 | 16 - 6 | 20 - 7 | 23 - 10 | 6 - 5 | 10 - 9 | 15 - 4 | 19 - 8 | 22 - 10 |
| | HF | SS | | 7 - 9 | 13 - 8 | 19 - 1 | 24 - 5 | 26-0† | 7 - 6 | 13 - 1 | 18 - 6 | 23 - 8 | 26-0† | 7 - 3 | 12 - 7 | 18 - 0 | 23 - 0 | 26-0† |
| | HF | No.1 | | 7 - 7 | 13 - 3 | 18 - 9 | 23 - 11 | 26-0† | 7 - 3 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† |
| | HF | No.2 | | 7 - 2 | 12 - 6 | 17 - 10 | 22 - 9 | 26-0† | 6 - 11 | 12 - 0 | 17 - 4 | 22 - 1 | 26-0† | 6 - 8 | 11 - 7 | 16 - 7 | 21 - 5 | 26-0† |
| | HF | No.3 | | 6 - 11 | 11 - 10 | 17 - 2 | 21 - 0 | 24 - 5 | 6 - 7 | 11 - 0 | 15 - 10 | 20 - 1 | 23 - 3 | 6 - 2 | 10 - 4 | 14 - 9 | 19 - 2 | 22 - 3 |
| | SP | SS | | 8 - 2 | 14 - 4 | 19 - 11 | 25 - 5 | 26-0† | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 7 | 13 - 3 | 18 - 9 | 23 - 11 | 26-0† |
| | SP | No.1 | | 7 - 9 | 13 - 8 | 19 - 1 | 24 - 5 | 26-0† | 7 - 6 | 13 - 1 | 18 - 6 | 23 - 8 | 26-0† | 7 - 3 | 12 - 7 | 18 - 0 | 23 - 0 | 26-0† |
| | SP | No.2 | | 7 - 4 | 12 - 11 | 18 - 4 | 23 - 4 | 26-0† | 7 - 1 | 12 - 4 | 17 - 9 | 22 - 8 | 26-0† | 6 - 10 | 11 - 11 | 17 - 2 | 22 - 0 | 26-0† |
| | SP | No.3 | | 6 - 4 | 10 - 10 | 15 - 4 | 19 - 7 | 23 - 2 | 6 - 0 | 10 - 1 | 14 - 3 | 18 - 8 | 22 - 1 | 5 - 8 | 9 - 6 | 13 - 3 | 17 - 10 | 21 - 2 |
| | SPF | SS | | 7 - 7 | 13 - 3 | 18 - 9 | 23 - 11 | 26-0† | 7 - 3 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† |
| | SPF | No.1 | | 7 - 4 | 12 - 11 | 18 - 4 | 23 - 4 | 26-0† | 7 - 1 | 12 - 4 | 17 - 9 | 22 - 8 | 26-0† | 6 - 10 | 11 - 11 | 17 - 2 | 22 - 0 | 26-0† |
| | SPF | No.2 | | 7 - 4 | 12 - 11 | 18 - 4 | 23 - 4 | 26-0† | 7 - 1 | 12 - 4 | 17 - 9 | 22 - 8 | 26-0† | 6 - 10 | 11 - 11 | 17 - 2 | 22 - 0 | 26-0† |
| | SPF | No.3 | | 6 - 11 | 11 - 10 | 17 - 2 | 21 - 0 | 24 - 5 | 6 - 7 | 11 - 0 | 15 - 10 | 20 - 1 | 23 - 3 | 6 - 2 | 10 - 4 | 14 - 9 | 19 - 2 | 22 - 3 |
| 19.2 | DFL | SS | | 7 - 9 | 13 - 7 | 19 - 1 | 24 - 4 | 26-0† | 7 - 5 | 13 - 1 | 18 - 6 | 23 - 7 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 11 | 26-0† |
| | DFL | No.1 | | 7 - 5 | 12 - 11 | 18 - 4 | 23 - 5 | 26-0† | 7 - 2 | 12 - 5 | 17 - 10 | 22 - 9 | 26-0† | 6 - 11 | 12 - 0 | 17 - 3 | 22 - 1 | 26-0† |
| | DFL | No.2 | | 7 - 3 | 12 - 7 | 18 - 0 | 23 - 0 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 3 | 26-0† | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | DFL | No.3 | | 6 - 5 | 10 - 9 | 15 - 4 | 19 - 8 | 22 - 10 | 6 - 0 | 10 - 0 | 14 - 3 | 18 - 9 | 21 - 9 | 5 - 8 | 9 - 5 | 13 - 3 | 18 - 0 | 20 - 10 |
| | HF | SS | | 7 - 3 | 12 - 7 | 18 - 0 | 23 - 0 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 3 | 26-0† | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | HF | No.1 | | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† | 6 - 9 | 11 - 9 | 17 - 0 | 21 - 9 | 26-0† | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 |
| | HF | No.2 | | 6 - 8 | 11 - 7 | 16 - 7 | 21 - 5 | 26-0† | 6 - 5 | 11 - 1 | 15 - 11 | 20 - 9 | 25 - 3 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | HF | No.3 | | 6 - 2 | 10 - 4 | 14 - 9 | 19 - 2 | 22 - 3 | 5 - 10 | 9 - 8 | 13 - 8 | 18 - 4 | 21 - 3 | 5 - 6 | 9 - 1 | 12 - 10 | 17 - 6 | 20 - 4 |
| | SP | SS | | 7 - 7 | 13 - 3 | 18 - 9 | 23 - 11 | 26-0† | 7 - 3 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† |
| | SP | No.1 | | 7 - 3 | 12 - 7 | 18 - 0 | 23 - 0 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 3 | 26-0† | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | SP | No.2 | | 6 - 10 | 11 - 11 | 17 - 2 | 22 - 0 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 11 | 6 - 4 | 11 - 0 | 15 - 10 | 20 - 8 | 24 - 11 |
| | SP | No.3 | | 5 - 8 | 9 - 6 | 13 - 3 | 17 - 10 | 21 - 2 | 5 - 4 | 8 - 11 | 12 - 5 | 16 - 10 | 20 - 2 | 5 - 0 | 8 - 5 | 11 - 7 | 15 - 7 | 19 - 3 |
| | SPF | SS | | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† | 6 - 9 | 11 - 9 | 17 - 0 | 21 - 9 | 26-0† | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 |
| | SPF | No.1 | | 6 - 10 | 11 - 11 | 17 - 2 | 22 - 0 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 11 | 6 - 4 | 11 - 0 | 15 - 10 | 20 - 8 | 25 - 2 |
| | SPF | No.2 | | 6 - 10 | 11 - 11 | 17 - 2 | 22 - 0 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 11 | 6 - 4 | 11 - 0 | 15 - 10 | 20 - 8 | 25 - 2 |
| | SPF | No.3 | | 6 - 2 | 10 - 4 | 14 - 9 | 19 - 2 | 22 - 3 | 5 - 10 | 9 - 8 | 13 - 8 | 18 - 4 | 21 - 3 | 5 - 6 | 9 - 1 | 12 - 10 | 17 - 6 | 20 - 4 |
| 24 | DFL | SS | | 7 - 1 | 12 - 4 | 17 - 8 | 22 - 7 | 26-0† | 6 - 10 | 11 - 10 | 17 - 1 | 21 - 11 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 10 |
| | DFL | No.1 | | 6 - 9 | 11 - 9 | 16 - 11 | 21 - 9 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 8 | 6 - 4 | 10 - 11 | 15 - 7 | 20 - 6 | 24 - 11 |
| | DFL | No.2 | | 6 - 7 | 11 - 6 | 16 - 6 | 21 - 4 | 25 - 11 | 6 - 4 | 11 - 0 | 15 - 10 | 20 - 8 | 25 - 2 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 24 - 5 |
| | DFL | No.3 | | 5 - 7 | 9 - 2 | 12 - 11 | 17 - 7 | 20 - 5 | 5 - 3 | 8 - 7 | 12 - 0 | 16 - 5 | 19 - 6 | 4 - 11 | 8 - 1 | 11 - 3 | 15 - 3 | 18 - 8 |
| | HF | SS | | 6 - 7 | 11 - 6 | 16 - 6 | 21 - 4 | 25 - 11 | 6 - 4 | 11 - 0 | 15 - 10 | 20 - 8 | 25 - 2 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 24 - 5 |
| | HF | No.1 | | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 10 | 25 - 4 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 7 | 6 - 0 | 10 - 4 | 14 - 9 | 19 - 8 | 23 - 11 |
| | HF | No.2 | | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 11 | 24 - 2 | 5 - 10 | 10 - 1 | 14 - 5 | 19 - 3 | 23 - 5 | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 9 | 22 - 9 |
| | HF | No.3 | | 5 - 5 | 8 - 10 | 12 - 5 | 17 - 1 | 19 - 11 | 5 - 1 | 8 - 4 | 11 - 7 | 15 - 9 | 19 - 0 | 4 - 10 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 |
| | SP | SS | | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 2 | 26-0† | 6 - 8 | 11 - 7 | 16 - 8 | 21 - 6 | 26-0† | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 10 | 25 - 5 |
| | SP | No.1 | | 6 - 7 | 11 - 6 | 16 - 6 | 21 - 4 | 25 - 11 | 6 - 4 | 11 - 0 | 15 - 10 | 20 - 8 | 25 - 2 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 24 - 5 |
| | SP | No.2 | | 6 - 3 | 10 - 10 | 15 - 6 | 20 - 5 | 24 - 5 | 6 - 1 | 10 - 5 | 14 - 11 | 19 - 9 | 23 - 3 | 5 - 10 | 10 - 1 | 14 - 4 | 18 - 11 | 22 - 3 |
| | SP | No.3 | | 4 - 11 | 8 - 2 | 11 - 3 | 15 - 1 | 18 - 11 | 4 - 8 | 7 - 8 | 10 - 6 | 14 - 0 | 18 - 0 | 4 - 5 | 7 - 3 | 9 - 11 | 13 - 1 | 17 - 2 |
| | SPF | SS | | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 10 | 25 - 4 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 7 | 6 - 0 | 10 - 4 | 14 - 9 | 19 - 8 | 23 - 11 |
| | SPF | No.1 | | 6 - 3 | 10 - 10 | 15 - 6 | 20 - 5 | 24 - 10 | 6 - 1 | 10 - 5 | 14 - 11 | 19 - 9 | 24 - 0 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 2 | 23 - 4 |
| | SPF | No.2 | | 6 - 3 | 10 - 10 | 15 - 6 | 20 - 5 | 24 - 10 | 6 - 1 | 10 - 5 | 14 - 11 | 19 - 9 | 24 - 0 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 2 | 23 - 4 |
| | SPF | No.3 | | 5 - 5 | 8 - 10 | 12 - 5 | 17 - 1 | 19 - 11 | 5 - 1 | 8 - 4 | 11 - 7 | 15 - 9 | 19 - 0 | 4 - 10 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

# Exposure B

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Wind Speed 3-second gust (mph) | | | 120 | | | | | 130 | | | | | 140 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 8 - 5 | 14 - 10 | 20 - 5 | 26-0† | 26-0† | 7 - 10 | 13 - 10 | 19 - 4 | 24 - 8 | 26-0† | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† |
| | DFL | No.1 | 8 - 0 | 14 - 2 | 19 - 8 | 25 - 1 | 26-0† | 7 - 6 | 13 - 2 | 18 - 8 | 23 - 9 | 26-0† | 7 - 1 | 12 - 4 | 17 - 9 | 22 - 7 | 26-0† |
| | DFL | No.2 | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 2 | 26-0† |
| | DFL | No.3 | 7 - 4 | 12 - 5 | 17 - 10 | 21 - 9 | 25 - 3 | 6 - 7 | 11 - 1 | 15 - 11 | 20 - 1 | 23 - 4 | 6 - 0 | 9 - 11 | 14 - 1 | 18 - 8 | 21 - 8 |
| | HF | SS | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 2 | 26-0† |
| | HF | No.1 | 7 - 8 | 13 - 5 | 18 - 10 | 24 - 1 | 26-0† | 7 - 2 | 12 - 6 | 17 - 10 | 22 - 10 | 26-0† | 6 - 9 | 11 - 9 | 16 - 11 | 21 - 8 | 26-0† |
| | HF | No.2 | 7 - 2 | 12 - 7 | 18 - 0 | 22 - 11 | 26-0† | 6 - 9 | 11 - 9 | 16 - 11 | 21 - 9 | 26-0† | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 8 | 25 - 2 |
| | HF | No.3 | 7 - 0 | 12 - 0 | 17 - 5 | 21 - 3 | 24 - 8 | 6 - 5 | 10 - 8 | 15 - 3 | 19 - 7 | 22 - 9 | 5 - 10 | 9 - 7 | 13 - 7 | 18 - 3 | 21 - 2 |
| | SP | SS | 8 - 3 | 14 - 6 | 20 - 0 | 25 - 7 | 26-0† | 7 - 8 | 13 - 6 | 19 - 0 | 24 - 3 | 26-0† | 7 - 3 | 12 - 8 | 18 - 1 | 23 - 1 | 26-0† |
| | SP | No.1 | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 2 | 26-0† |
| | SP | No.2 | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 3 | 26-0† | 6 - 7 | 11 - 5 | 16 - 4 | 21 - 2 | 25 - 9 |
| | SP | No.3 | 6 - 5 | 11 - 0 | 15 - 7 | 19 - 9 | 23 - 5 | 5 - 10 | 9 - 9 | 13 - 9 | 18 - 3 | 21 - 7 | 5 - 3 | 8 - 10 | 12 - 3 | 16 - 8 | 20 - 0 |
| | SPF | SS | 7 - 8 | 13 - 5 | 18 - 10 | 24 - 1 | 26-0† | 7 - 2 | 12 - 6 | 17 - 10 | 22 - 10 | 26-0† | 6 - 9 | 11 - 9 | 16 - 11 | 21 - 8 | 26-0† |
| | SPF | No.1 | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 3 | 26-0† | 6 - 7 | 11 - 5 | 16 - 4 | 21 - 2 | 25 - 9 |
| | SPF | No.2 | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 3 | 26-0† | 6 - 7 | 11 - 5 | 16 - 4 | 21 - 2 | 25 - 9 |
| | SPF | No.3 | 7 - 0 | 12 - 0 | 17 - 5 | 21 - 3 | 24 - 8 | 6 - 5 | 10 - 8 | 15 - 3 | 19 - 7 | 22 - 9 | 5 - 10 | 9 - 7 | 13 - 7 | 18 - 3 | 21 - 2 |
| 16 | DFL | SS | 7 - 6 | 13 - 1 | 18 - 6 | 23 - 8 | 26-0† | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 5 | 26-0† | 6 - 7 | 11 - 6 | 16 - 6 | 21 - 4 | 25 - 11 |
| | DFL | No.1 | 7 - 2 | 12 - 6 | 17 - 10 | 22 - 9 | 26-0† | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 7 | 25 - 0 |
| | DFL | No.2 | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | DFL | No.3 | 6 - 1 | 10 - 1 | 14 - 4 | 18 - 10 | 21 - 10 | 5 - 6 | 9 - 0 | 12 - 8 | 17 - 5 | 20 - 2 | 5 - 0 | 8 - 2 | 11 - 4 | 15 - 5 | 18 - 9 |
| | HF | SS | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | HF | No.1 | 6 - 10 | 11 - 10 | 17 - 1 | 21 - 10 | 26-0† | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 9 | 25 - 2 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 |
| | HF | No.2 | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 10 | 25 - 4 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 | 5 - 8 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 10 |
| | HF | No.3 | 5 - 10 | 9 - 9 | 13 - 10 | 18 - 5 | 21 - 4 | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 8 | 4 - 10 | 7 - 11 | 11 - 0 | 14 - 10 | 18 - 4 |
| | SP | SS | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 3 | 26-0† | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 6 | 11 - 3 | 16 - 1 | 20 - 11 | 25 - 6 |
| | SP | No.1 | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | SP | No.2 | 6 - 7 | 11 - 6 | 16 - 6 | 21 - 4 | 26 - 0 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 2 | 5 - 10 | 10 - 1 | 14 - 5 | 19 - 0 | 22 - 5 |
| | SP | No.3 | 5 - 4 | 9 - 0 | 12 - 6 | 16 - 11 | 20 - 3 | 4 - 10 | 8 - 0 | 11 - 1 | 14 - 10 | 18 - 8 | 4 - 5 | 7 - 3 | 10 - 0 | 13 - 3 | 17 - 4 |
| | SPF | SS | 6 - 10 | 11 - 10 | 17 - 1 | 21 - 10 | 26-0† | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 9 | 25 - 2 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 |
| | SPF | No.1 | 6 - 7 | 11 - 6 | 16 - 6 | 21 - 4 | 26 - 0 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 7 | 5 - 10 | 10 - 1 | 14 - 5 | 19 - 3 | 23 - 5 |
| | SPF | No.2 | 6 - 7 | 11 - 6 | 16 - 6 | 21 - 4 | 26 - 0 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 7 | 5 - 10 | 10 - 1 | 14 - 5 | 19 - 3 | 23 - 5 |
| | SPF | No.3 | 5 - 10 | 9 - 9 | 13 - 10 | 18 - 5 | 21 - 4 | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 8 | 4 - 10 | 7 - 11 | 11 - 0 | 14 - 10 | 18 - 4 |
| 19.2 | DFL | SS | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 3 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 8 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 24 - 5 |
| | DFL | No.1 | 6 - 8 | 11 - 7 | 16 - 7 | 21 - 5 | 26-0† | 6 - 3 | 10 - 10 | 15 - 5 | 20 - 4 | 24 - 9 | 5 - 11 | 10 - 2 | 14 - 5 | 19 - 4 | 23 - 6 |
| | DFL | No.2 | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 0 | 25 - 7 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 11 | 24 - 2 | 5 - 9 | 9 - 11 | 14 - 1 | 18 - 11 | 22 - 5 |
| | DFL | No.3 | 5 - 5 | 8 - 11 | 12 - 6 | 17 - 2 | 20 - 0 | 4 - 10 | 8 - 0 | 11 - 1 | 15 - 0 | 18 - 5 | 4 - 5 | 7 - 3 | 10 - 0 | 13 - 4 | 17 - 0 |
| | HF | SS | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 0 | 25 - 7 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 11 | 24 - 3 | 5 - 9 | 9 - 11 | 14 - 1 | 18 - 11 | 23 - 1 |
| | HF | No.1 | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 7 | 25 - 0 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 8 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 7 |
| | HF | No.2 | 6 - 0 | 10 - 4 | 14 - 9 | 19 - 7 | 23 - 10 | 5 - 7 | 9 - 8 | 13 - 9 | 18 - 7 | 22 - 7 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 6 |
| | HF | No.3 | 5 - 3 | 8 - 7 | 12 - 0 | 16 - 5 | 19 - 6 | 4 - 9 | 7 - 9 | 10 - 8 | 14 - 5 | 18 - 0 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 10 | 16 - 3 |
| | SP | SS | 6 - 10 | 11 - 10 | 17 - 1 | 21 - 10 | 26-0† | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 9 | 25 - 2 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 |
| | SP | No.1 | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 0 | 25 - 7 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 11 | 24 - 3 | 5 - 9 | 9 - 11 | 14 - 1 | 18 - 11 | 23 - 1 |
| | SP | No.2 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 23 - 10 | 5 - 9 | 10 - 0 | 14 - 2 | 18 - 8 | 22 - 0 | 5 - 6 | 9 - 4 | 13 - 2 | 17 - 4 | 20 - 5 |
| | SP | No.3 | 4 - 9 | 7 - 11 | 10 - 11 | 14 - 7 | 18 - 6 | 4 - 4 | 7 - 1 | 9 - 9 | 12 - 11 | 16 - 11 | 3 - 11 | 6 - 6 | 8 - 9 | 11 - 7 | 14 - 11 |
| | SPF | SS | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 7 | 25 - 0 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 8 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 7 |
| | SPF | No.1 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 24 - 5 | 5 - 9 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 2 | 5 - 6 | 9 - 4 | 13 - 3 | 18 - 2 | 22 - 1 |
| | SPF | No.2 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 24 - 5 | 5 - 9 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 2 | 5 - 6 | 9 - 4 | 13 - 3 | 18 - 2 | 22 - 1 |
| | SPF | No.3 | 5 - 3 | 8 - 7 | 12 - 0 | 16 - 5 | 19 - 6 | 4 - 9 | 7 - 9 | 10 - 8 | 14 - 5 | 18 - 0 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 10 | 16 - 3 |
| 24 | DFL | SS | 6 - 4 | 11 - 0 | 15 - 9 | 20 - 8 | 25 - 1 | 6 - 0 | 10 - 4 | 14 - 8 | 19 - 7 | 23 - 10 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 8 | 22 - 8 |
| | DFL | No.1 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 11 | 24 - 2 | 5 - 9 | 9 - 10 | 14 - 0 | 18 - 10 | 22 - 9 | 5 - 5 | 9 - 3 | 13 - 1 | 17 - 11 | 21 - 2 |
| | DFL | No.2 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 5 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 6 | 21 - 7 | 5 - 3 | 8 - 11 | 12 - 6 | 17 - 3 | 20 - 0 |
| | DFL | No.3 | 4 - 8 | 7 - 8 | 10 - 7 | 14 - 3 | 17 - 10 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 7 | 15 - 11 | 3 - 10 | 6 - 3 | 8 - 7 | 11 - 4 | 14 - 2 |
| | HF | SS | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 9 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 6 | 22 - 6 | 5 - 3 | 9 - 0 | 12 - 9 | 17 - 7 | 21 - 5 |
| | HF | No.1 | 5 - 10 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 3 | 5 - 5 | 9 - 4 | 13 - 3 | 18 - 1 | 22 - 0 | 5 - 2 | 8 - 10 | 12 - 5 | 17 - 2 | 20 - 10 |
| | HF | No.2 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 2 | 5 - 2 | 8 - 10 | 12 - 5 | 17 - 3 | 21 - 0 | 4 - 10 | 8 - 4 | 11 - 8 | 16 - 1 | 19 - 6 |
| | HF | No.3 | 4 - 7 | 7 - 5 | 10 - 3 | 13 - 9 | 17 - 5 | 4 - 1 | 6 - 8 | 9 - 2 | 12 - 2 | 15 - 4 | 3 - 9 | 6 - 1 | 8 - 3 | 10 - 11 | 13 - 7 |
| | SP | SS | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 3 | 23 - 5 | 5 - 6 | 9 - 6 | 13 - 5 | 18 - 4 | 22 - 3 |
| | SP | No.1 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 9 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 6 | 22 - 6 | 5 - 3 | 9 - 0 | 12 - 9 | 17 - 7 | 21 - 2 |
| | SP | No.2 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 2 | 21 - 4 | 5 - 3 | 8 - 11 | 12 - 6 | 16 - 4 | 19 - 8 | 4 - 9 | 8 - 0 | 11 - 2 | 14 - 6 | 18 - 4 |
| | SP | No.3 | 4 - 2 | 6 - 10 | 9 - 4 | 12 - 4 | 16 - 0 | 3 - 9 | 6 - 2 | 8 - 4 | 10 - 11 | 14 - 1 | 3 - 6 | 5 - 7 | 7 - 7 | 9 - 10 | 12 - 7 |
| | SPF | SS | 5 - 10 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 3 | 5 - 5 | 9 - 4 | 13 - 3 | 18 - 1 | 22 - 0 | 5 - 2 | 8 - 10 | 12 - 5 | 17 - 2 | 20 - 11 |
| | SPF | No.1 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 8 | 22 - 8 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 3 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 8 | 19 - 9 |
| | SPF | No.2 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 8 | 22 - 8 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 3 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 8 | 19 - 9 |
| | SPF | No.3 | 4 - 7 | 7 - 5 | 10 - 3 | 13 - 9 | 17 - 5 | 4 - 1 | 6 - 8 | 9 - 2 | 12 - 2 | 15 - 4 | 3 - 9 | 6 - 1 | 8 - 3 | 10 - 11 | 13 - 7 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

# Exposure B

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Wind Speed 3-second gust (mph) | | | 150 | | | | | 160 | | | | | 170 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 5 | 26-0† | 6 - 8 | 11 - 7 | 16 - 8 | 21 - 6 | 26-0† | 6 - 4 | 11 - 0 | 15 - 9 | 20 - 8 | 25 - 1 |
| | DFL | No.1 | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 8 | 25 - 2 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 11 | 24 - 2 |
| | DFL | No.2 | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 4 |
| | DFL | No.3 | 5 - 6 | 9 - 0 | 12 - 8 | 17 - 5 | 20 - 2 | 5 - 1 | 8 - 3 | 11 - 6 | 15 - 8 | 18 - 11 | 4 - 8 | 7 - 8 | 10 - 7 | 14 - 3 | 17 - 10 |
| | HF | SS | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 8 |
| | HF | No.1 | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 9 | 25 - 2 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 10 | 24 - 2 | 5 - 10 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 2 |
| | HF | No.2 | 6 - 1 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 | 5 - 9 | 9 - 11 | 14 - 1 | 18 - 11 | 23 - 0 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 1 |
| | HF | No.3 | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 9 | 4 - 11 | 8 - 0 | 11 - 2 | 15 - 1 | 18 - 6 | 4 - 6 | 7 - 5 | 10 - 2 | 13 - 8 | 17 - 5 |
| | SP | SS | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 8 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 |
| | SP | No.1 | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 8 |
| | SP | No.2 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 2 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 3 | 22 - 8 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 1 | 21 - 4 |
| | SP | No.3 | 4 - 10 | 8 - 1 | 11 - 1 | 14 - 10 | 18 - 8 | 4 - 6 | 7 - 5 | 10 - 1 | 13 - 5 | 17 - 6 | 4 - 2 | 6 - 10 | 9 - 4 | 12 - 3 | 16 - 0 |
| | SPF | SS | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 9 | 25 - 2 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 10 | 24 - 2 | 5 - 10 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 2 |
| | SPF | No.1 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 8 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 5 | 23 - 7 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 8 | 22 - 8 |
| | SPF | No.2 | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 8 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 5 | 23 - 7 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 8 | 22 - 8 |
| | SPF | No.3 | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 9 | 4 - 11 | 8 - 0 | 11 - 2 | 15 - 1 | 18 - 6 | 4 - 6 | 7 - 5 | 10 - 2 | 13 - 8 | 17 - 5 |
| 16 | DFL | SS | 6 - 3 | 10 - 10 | 15 - 6 | 20 - 4 | 24 - 9 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 9 | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 9 | 22 - 10 |
| | DFL | No.1 | 6 - 0 | 10 - 4 | 14 - 9 | 19 - 8 | 23 - 10 | 5 - 8 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 8 | 5 - 5 | 9 - 4 | 13 - 3 | 18 - 1 | 21 - 4 |
| | DFL | No.2 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 3 | 22 - 11 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 5 | 21 - 6 | 5 - 4 | 9 - 1 | 12 - 8 | 17 - 5 | 20 - 3 |
| | DFL | No.3 | 4 - 7 | 7 - 5 | 10 - 3 | 13 - 10 | 17 - 6 | 4 - 3 | 6 - 10 | 9 - 5 | 12 - 6 | 15 - 10 | 3 - 11 | 6 - 4 | 8 - 8 | 11 - 5 | 14 - 4 |
| | HF | SS | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 3 | 23 - 5 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 5 | 22 - 5 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 6 |
| | HF | No.1 | 5 - 9 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 11 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 0 | 21 - 11 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 4 | 21 - 0 |
| | HF | No.2 | 5 - 5 | 9 - 3 | 13 - 1 | 17 - 11 | 21 - 10 | 5 - 2 | 8 - 9 | 12 - 5 | 17 - 2 | 20 - 10 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 3 | 19 - 8 |
| | HF | No.3 | 4 - 5 | 7 - 2 | 9 - 11 | 13 - 4 | 16 - 11 | 4 - 1 | 6 - 7 | 9 - 1 | 12 - 1 | 15 - 2 | 3 - 10 | 6 - 1 | 8 - 4 | 11 - 1 | 13 - 10 |
| | SP | SS | 6 - 2 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 4 | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 2 | 23 - 4 | 5 - 7 | 9 - 7 | 13 - 6 | 18 - 5 | 22 - 5 |
| | SP | No.1 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 3 | 23 - 5 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 5 | 22 - 5 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 4 |
| | SP | No.2 | 5 - 7 | 9 - 7 | 13 - 6 | 17 - 9 | 20 - 11 | 5 - 2 | 8 - 10 | 12 - 5 | 16 - 2 | 19 - 7 | 4 - 10 | 8 - 2 | 11 - 4 | 14 - 8 | 18 - 5 |
| | SP | No.3 | 4 - 1 | 6 - 8 | 9 - 1 | 11 - 11 | 15 - 6 | 3 - 9 | 6 - 1 | 8 - 4 | 10 - 10 | 14 - 0 | 3 - 7 | 5 - 8 | 7 - 8 | 10 - 0 | 12 - 9 |
| | SPF | SS | 5 - 9 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 11 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 0 | 21 - 11 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 4 | 21 - 1 |
| | SPF | No.1 | 5 - 7 | 9 - 7 | 13 - 6 | 18 - 5 | 22 - 5 | 5 - 3 | 9 - 1 | 12 - 10 | 17 - 7 | 21 - 2 | 5 - 1 | 8 - 7 | 12 - 2 | 16 - 9 | 19 - 11 |
| | SPF | No.2 | 5 - 7 | 9 - 7 | 13 - 6 | 18 - 5 | 22 - 5 | 5 - 3 | 9 - 1 | 12 - 10 | 17 - 7 | 21 - 2 | 5 - 1 | 8 - 7 | 12 - 2 | 16 - 9 | 19 - 11 |
| | SPF | No.3 | 4 - 5 | 7 - 2 | 9 - 11 | 13 - 4 | 16 - 11 | 4 - 1 | 6 - 7 | 9 - 1 | 12 - 1 | 15 - 2 | 3 - 10 | 6 - 1 | 8 - 4 | 11 - 1 | 13 - 10 |
| 19.2 | DFL | SS | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 2 | 23 - 4 | 5 - 7 | 9 - 6 | 13 - 6 | 18 - 4 | 22 - 4 | 5 - 3 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 5 |
| | DFL | No.1 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 6 | 22 - 1 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 20 - 8 | 5 - 1 | 8 - 7 | 12 - 0 | 16 - 5 | 19 - 5 |
| | DFL | No.2 | 5 - 5 | 9 - 4 | 13 - 3 | 18 - 0 | 20 - 11 | 5 - 2 | 8 - 8 | 12 - 2 | 16 - 7 | 19 - 7 | 4 - 11 | 8 - 0 | 11 - 1 | 15 - 0 | 18 - 5 |
| | DFL | No.3 | 4 - 1 | 6 - 7 | 9 - 1 | 12 - 0 | 15 - 2 | 3 - 9 | 6 - 1 | 8 - 4 | 11 - 0 | 13 - 8 | 3 - 7 | 5 - 7 | 7 - 8 | 10 - 1 | 12 - 6 |
| | HF | SS | 5 - 5 | 9 - 4 | 13 - 3 | 18 - 1 | 22 - 0 | 5 - 2 | 8 - 11 | 12 - 6 | 17 - 4 | 21 - 1 | 4 - 11 | 8 - 5 | 11 - 11 | 16 - 5 | 20 - 3 |
| | HF | No.1 | 5 - 4 | 9 - 1 | 12 - 11 | 17 - 9 | 21 - 7 | 5 - 1 | 8 - 8 | 12 - 2 | 16 - 10 | 20 - 5 | 4 - 10 | 8 - 3 | 11 - 7 | 15 - 11 | 19 - 2 |
| | HF | No.2 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 9 | 20 - 4 | 4 - 9 | 8 - 2 | 11 - 6 | 15 - 9 | 19 - 1 | 4 - 7 | 7 - 8 | 10 - 8 | 14 - 4 | 17 - 11 |
| | HF | No.3 | 3 - 11 | 6 - 5 | 8 - 9 | 11 - 7 | 14 - 7 | 3 - 8 | 5 - 11 | 8 - 0 | 10 - 7 | 13 - 2 | 3 - 6 | 5 - 5 | 7 - 5 | 9 - 9 | 12 - 0 |
| | SP | SS | 5 - 9 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 11 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 0 | 21 - 11 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 4 | 21 - 1 |
| | SP | No.1 | 5 - 5 | 9 - 4 | 13 - 3 | 18 - 1 | 22 - 0 | 5 - 2 | 8 - 11 | 12 - 6 | 17 - 4 | 20 - 8 | 4 - 11 | 8 - 5 | 11 - 11 | 15 - 9 | 19 - 5 |
| | SP | No.2 | 5 - 0 | 8 - 6 | 11 - 11 | 15 - 6 | 19 - 1 | 4 - 8 | 7 - 10 | 10 - 10 | 14 - 0 | 17 - 11 | 4 - 4 | 7 - 2 | 9 - 11 | 12 - 9 | 16 - 6 |
| | SP | No.3 | 3 - 8 | 5 - 11 | 8 - 0 | 10 - 5 | 13 - 5 | 3 - 5 | 5 - 5 | 7 - 4 | 9 - 7 | 12 - 2 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 9 | 11 - 1 |
| | SPF | SS | 5 - 4 | 9 - 1 | 12 - 11 | 17 - 9 | 21 - 7 | 5 - 1 | 8 - 8 | 12 - 2 | 16 - 10 | 20 - 8 | 4 - 10 | 8 - 3 | 11 - 7 | 15 - 11 | 19 - 10 |
| | SPF | No.1 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 4 | 20 - 7 | 4 - 11 | 8 - 5 | 11 - 10 | 16 - 3 | 19 - 4 | 4 - 8 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 |
| | SPF | No.2 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 4 | 20 - 7 | 4 - 11 | 8 - 5 | 11 - 10 | 16 - 3 | 19 - 4 | 4 - 8 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 |
| | SPF | No.3 | 3 - 11 | 6 - 5 | 8 - 9 | 11 - 7 | 14 - 7 | 3 - 8 | 5 - 11 | 8 - 0 | 10 - 7 | 13 - 2 | 3 - 6 | 5 - 5 | 7 - 5 | 9 - 9 | 12 - 0 |
| 24 | DFL | SS | 5 - 4 | 9 - 2 | 13 - 0 | 17 - 10 | 21 - 8 | 5 - 1 | 8 - 8 | 12 - 3 | 16 - 11 | 20 - 9 | 4 - 10 | 8 - 3 | 11 - 8 | 16 - 0 | 19 - 11 |
| | DFL | No.1 | 5 - 1 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 9 | 4 - 10 | 8 - 0 | 11 - 2 | 15 - 1 | 18 - 6 | 4 - 6 | 7 - 5 | 10 - 2 | 13 - 8 | 17 - 5 |
| | DFL | No.2 | 5 - 0 | 8 - 2 | 11 - 4 | 15 - 4 | 18 - 8 | 4 - 7 | 7 - 6 | 10 - 4 | 13 - 10 | 17 - 6 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 8 | 16 - 0 |
| | DFL | No.3 | 3 - 7 | 5 - 9 | 7 - 9 | 10 - 3 | 12 - 9 | 3 - 5 | 5 - 3 | 7 - 2 | 9 - 4 | 11 - 7 | 3 - 2 | 4 - 11 | 6 - 7 | 8 - 7 | 10 - 7 |
| | HF | SS | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 7 | 20 - 5 | 4 - 9 | 8 - 1 | 11 - 5 | 15 - 8 | 19 - 7 | 4 - 7 | 7 - 9 | 10 - 10 | 14 - 10 | 18 - 10 |
| | HF | No.1 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 2 | 19 - 6 | 4 - 8 | 7 - 11 | 10 - 11 | 14 - 9 | 18 - 3 | 4 - 5 | 7 - 3 | 10 - 0 | 13 - 5 | 17 - 1 |
| | HF | No.2 | 4 - 7 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 | 4 - 5 | 7 - 2 | 9 - 11 | 13 - 3 | 16 - 10 | 4 - 1 | 6 - 8 | 9 - 1 | 12 - 1 | 15 - 3 |
| | HF | No.3 | 3 - 6 | 5 - 6 | 7 - 6 | 9 - 11 | 12 - 3 | 3 - 4 | 5 - 1 | 6 - 11 | 9 - 1 | 11 - 2 | 3 - 1 | 4 - 9 | 6 - 5 | 8 - 4 | 10 - 3 |
| | SP | SS | 5 - 3 | 9 - 0 | 12 - 8 | 17 - 6 | 21 - 3 | 5 - 0 | 8 - 6 | 12 - 0 | 16 - 6 | 20 - 4 | 4 - 9 | 8 - 1 | 11 - 5 | 15 - 8 | 19 - 7 |
| | SP | No.1 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 2 | 19 - 9 | 4 - 9 | 8 - 1 | 11 - 5 | 14 - 6 | 18 - 6 | 4 - 6 | 7 - 7 | 10 - 6 | 13 - 3 | 17 - 5 |
| | SP | No.2 | 4 - 4 | 7 - 4 | 10 - 2 | 13 - 0 | 16 - 11 | 4 - 0 | 6 - 9 | 9 - 3 | 11 - 10 | 15 - 2 | 3 - 9 | 6 - 3 | 8 - 6 | 10 - 10 | 13 - 10 |
| | SP | No.3 | 3 - 3 | 5 - 2 | 6 - 11 | 8 - 11 | 11 - 4 | 3 - 1 | 4 - 9 | 6 - 4 | 8 - 2 | 10 - 4 | 2 - 11 | 4 - 5 | 5 - 10 | 7 - 7 | 9 - 6 |
| | SPF | SS | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 2 | 20 - 0 | 4 - 8 | 7 - 11 | 11 - 1 | 15 - 3 | 19 - 2 | 4 - 5 | 7 - 6 | 10 - 7 | 14 - 5 | 18 - 5 |
| | SPF | No.1 | 4 - 9 | 8 - 0 | 11 - 1 | 15 - 0 | 18 - 5 | 4 - 6 | 7 - 4 | 10 - 1 | 13 - 7 | 17 - 3 | 4 - 2 | 6 - 9 | 9 - 4 | 12 - 5 | 15 - 7 |
| | SPF | No.2 | 4 - 9 | 8 - 0 | 11 - 1 | 15 - 0 | 18 - 5 | 4 - 6 | 7 - 4 | 10 - 1 | 13 - 7 | 17 - 3 | 4 - 2 | 6 - 9 | 9 - 4 | 12 - 5 | 15 - 7 |
| | SPF | No.3 | 3 - 6 | 5 - 6 | 7 - 6 | 9 - 11 | 12 - 3 | 3 - 4 | 5 - 1 | 6 - 11 | 9 - 1 | 11 - 2 | 3 - 1 | 4 - 9 | 6 - 5 | 8 - 4 | 10 - 3 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

# Exposure B

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Rafter Spacing (in.) | Species | Grade | Wind Speed 3-second gust (mph) | 180 | | | | | 195 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | |
| 12 | DFL | SS | | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 10 | 24 - 2 | 5 - 9 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 11 |
| | DFL | No.1 | | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 2 | 23 - 3 | 5 - 6 | 9 - 5 | 13 - 3 | 18 - 2 | 21 - 5 |
| | DFL | No.2 | | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 9 | 22 - 1 | 5 - 4 | 9 - 2 | 12 - 10 | 17 - 7 | 20 - 4 |
| | DFL | No.3 | | 4 - 4 | 7 - 1 | 9 - 9 | 13 - 0 | 16 - 6 | 3 - 11 | 6 - 4 | 8 - 9 | 11 - 7 | 14 - 6 |
| | HF | SS | | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 9 | 22 - 10 | 5 - 4 | 9 - 2 | 12 - 11 | 17 - 9 | 21 - 7 |
| | HF | No.1 | | 5 - 6 | 9 - 6 | 13 - 6 | 18 - 4 | 22 - 4 | 5 - 2 | 8 - 11 | 12 - 7 | 17 - 5 | 21 - 2 |
| | HF | No.2 | | 5 - 3 | 9 - 0 | 12 - 8 | 17 - 6 | 21 - 3 | 4 - 11 | 8 - 5 | 11 - 10 | 16 - 4 | 19 - 9 |
| | HF | No.3 | | 4 - 3 | 6 - 10 | 9 - 5 | 12 - 7 | 15 - 10 | 3 - 10 | 6 - 2 | 8 - 5 | 11 - 2 | 13 - 11 |
| | SP | SS | | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 9 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 6 | 22 - 6 |
| | SP | No.1 | | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 9 | 22 - 10 | 5 - 4 | 9 - 2 | 12 - 11 | 17 - 9 | 21 - 5 |
| | SP | No.2 | | 5 - 4 | 9 - 2 | 12 - 10 | 16 - 11 | 20 - 1 | 4 - 10 | 8 - 2 | 11 - 5 | 14 - 10 | 18 - 7 |
| | SP | No.3 | | 3 - 10 | 6 - 4 | 8 - 7 | 11 - 3 | 14 - 7 | 3 - 7 | 5 - 8 | 7 - 9 | 10 - 1 | 12 - 10 |
| | SPF | SS | | 5 - 6 | 9 - 6 | 13 - 6 | 18 - 4 | 22 - 4 | 5 - 2 | 8 - 11 | 12 - 7 | 17 - 5 | 21 - 2 |
| | SPF | No.1 | | 5 - 5 | 9 - 3 | 13 - 1 | 17 - 11 | 21 - 9 | 5 - 1 | 8 - 8 | 12 - 3 | 16 - 11 | 20 - 1 |
| | SPF | No.2 | | 5 - 5 | 9 - 3 | 13 - 1 | 17 - 11 | 21 - 9 | 5 - 1 | 8 - 8 | 12 - 3 | 16 - 11 | 20 - 1 |
| | SPF | No.3 | | 4 - 3 | 6 - 10 | 9 - 5 | 12 - 7 | 15 - 10 | 3 - 10 | 6 - 2 | 8 - 5 | 11 - 2 | 13 - 11 |
| 16 | DFL | SS | | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 0 | 21 - 11 | 5 - 1 | 8 - 9 | 12 - 4 | 17 - 0 | 20 - 10 |
| | DFL | No.1 | | 5 - 2 | 8 - 11 | 12 - 7 | 17 - 4 | 20 - 1 | 4 - 11 | 8 - 1 | 11 - 2 | 15 - 2 | 18 - 7 |
| | DFL | No.2 | | 5 - 1 | 8 - 4 | 11 - 8 | 15 - 11 | 19 - 1 | 4 - 7 | 7 - 6 | 10 - 5 | 14 - 0 | 17 - 7 |
| | DFL | No.3 | | 3 - 8 | 5 - 10 | 8 - 0 | 10 - 7 | 13 - 1 | 3 - 5 | 5 - 4 | 7 - 2 | 9 - 5 | 11 - 8 |
| | HF | SS | | 5 - 1 | 8 - 8 | 12 - 3 | 16 - 11 | 20 - 9 | 4 - 9 | 8 - 2 | 11 - 5 | 15 - 9 | 19 - 8 |
| | HF | No.1 | | 4 - 11 | 8 - 6 | 11 - 11 | 16 - 5 | 19 - 10 | 4 - 8 | 7 - 11 | 11 - 0 | 14 - 11 | 18 - 4 |
| | HF | No.2 | | 4 - 8 | 8 - 0 | 11 - 2 | 15 - 2 | 18 - 7 | 4 - 5 | 7 - 3 | 10 - 0 | 13 - 4 | 17 - 0 |
| | HF | No.3 | | 3 - 7 | 5 - 8 | 7 - 9 | 10 - 2 | 12 - 8 | 3 - 4 | 5 - 2 | 7 - 0 | 9 - 1 | 11 - 3 |
| | SP | SS | | 5 - 4 | 9 - 1 | 12 - 11 | 17 - 9 | 21 - 7 | 5 - 0 | 8 - 6 | 12 - 0 | 16 - 7 | 20 - 5 |
| | SP | No.1 | | 5 - 1 | 8 - 8 | 12 - 3 | 16 - 8 | 20 - 1 | 4 - 9 | 8 - 2 | 11 - 5 | 14 - 8 | 18 - 7 |
| | SP | No.2 | | 4 - 6 | 7 - 6 | 10 - 5 | 13 - 5 | 17 - 5 | 4 - 1 | 6 - 9 | 9 - 4 | 11 - 11 | 15 - 4 |
| | SP | No.3 | | 3 - 4 | 5 - 3 | 7 - 1 | 9 - 2 | 11 - 8 | 3 - 1 | 4 - 9 | 6 - 5 | 8 - 3 | 10 - 5 |
| | SPF | SS | | 4 - 11 | 8 - 6 | 11 - 11 | 16 - 5 | 20 - 3 | 4 - 8 | 7 - 11 | 11 - 2 | 15 - 3 | 19 - 3 |
| | SPF | No.1 | | 4 - 10 | 8 - 3 | 11 - 5 | 15 - 6 | 18 - 10 | 4 - 6 | 7 - 4 | 10 - 2 | 13 - 8 | 17 - 5 |
| | SPF | No.2 | | 4 - 10 | 8 - 3 | 11 - 5 | 15 - 6 | 18 - 10 | 4 - 6 | 7 - 4 | 10 - 2 | 13 - 8 | 17 - 5 |
| | SPF | No.3 | | 3 - 7 | 5 - 8 | 7 - 9 | 10 - 2 | 12 - 8 | 3 - 4 | 5 - 2 | 7 - 0 | 9 - 1 | 11 - 3 |
| 19.2 | DFL | SS | | 5 - 1 | 8 - 8 | 12 - 2 | 16 - 10 | 20 - 8 | 4 - 9 | 8 - 1 | 11 - 5 | 15 - 8 | 19 - 7 |
| | DFL | No.1 | | 4 - 10 | 7 - 11 | 11 - 0 | 14 - 11 | 18 - 4 | 4 - 5 | 7 - 2 | 9 - 10 | 13 - 2 | 16 - 8 |
| | DFL | No.2 | | 4 - 7 | 7 - 5 | 10 - 3 | 13 - 9 | 17 - 5 | 4 - 1 | 6 - 8 | 9 - 2 | 12 - 2 | 15 - 4 |
| | DFL | No.3 | | 3 - 4 | 5 - 3 | 7 - 1 | 9 - 3 | 11 - 5 | 3 - 1 | 4 - 9 | 6 - 5 | 8 - 4 | 10 - 2 |
| | HF | SS | | 4 - 9 | 8 - 1 | 11 - 4 | 15 - 7 | 19 - 6 | 4 - 5 | 7 - 7 | 10 - 7 | 14 - 6 | 18 - 6 |
| | HF | No.1 | | 4 - 7 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 4 |
| | HF | No.2 | | 4 - 4 | 7 - 2 | 9 - 10 | 13 - 2 | 16 - 8 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 8 | 14 - 7 |
| | HF | No.3 | | 3 - 3 | 5 - 1 | 6 - 10 | 9 - 0 | 11 - 1 | 3 - 0 | 4 - 7 | 6 - 2 | 8 - 1 | 9 - 10 |
| | SP | SS | | 4 - 11 | 8 - 6 | 11 - 11 | 16 - 5 | 20 - 3 | 4 - 8 | 7 - 11 | 11 - 2 | 15 - 3 | 19 - 3 |
| | SP | No.1 | | 4 - 9 | 8 - 1 | 11 - 4 | 14 - 5 | 18 - 4 | 4 - 5 | 7 - 4 | 10 - 2 | 12 - 9 | 16 - 8 |
| | SP | No.2 | | 4 - 0 | 6 - 8 | 9 - 2 | 11 - 8 | 15 - 0 | 3 - 8 | 6 - 0 | 8 - 3 | 10 - 5 | 13 - 3 |
| | SP | No.3 | | 3 - 1 | 4 - 8 | 6 - 3 | 8 - 1 | 10 - 3 | 2 - 10 | 4 - 3 | 5 - 8 | 7 - 4 | 9 - 2 |
| | SPF | SS | | 4 - 7 | 7 - 10 | 11 - 0 | 15 - 2 | 19 - 1 | 4 - 4 | 7 - 4 | 10 - 4 | 14 - 1 | 18 - 1 |
| | SPF | No.1 | | 4 - 6 | 7 - 3 | 10 - 0 | 13 - 5 | 17 - 1 | 4 - 1 | 6 - 7 | 9 - 0 | 11 - 11 | 15 - 0 |
| | SPF | No.2 | | 4 - 6 | 7 - 3 | 10 - 0 | 13 - 5 | 17 - 1 | 4 - 1 | 6 - 7 | 9 - 0 | 11 - 11 | 15 - 0 |
| | SPF | No.3 | | 3 - 3 | 5 - 1 | 6 - 10 | 9 - 0 | 11 - 1 | 3 - 0 | 4 - 7 | 6 - 2 | 8 - 1 | 9 - 10 |
| 24 | DFL | SS | | 4 - 8 | 7 - 11 | 11 - 1 | 15 - 3 | 19 - 2 | 4 - 4 | 7 - 5 | 10 - 5 | 14 - 2 | 18 - 2 |
| | DFL | No.1 | | 4 - 3 | 6 - 10 | 9 - 5 | 12 - 7 | 15 - 10 | 3 - 10 | 6 - 2 | 8 - 5 | 11 - 2 | 13 - 11 |
| | DFL | No.2 | | 3 - 11 | 6 - 5 | 8 - 9 | 11 - 7 | 14 - 7 | 3 - 8 | 5 - 9 | 7 - 10 | 10 - 4 | 12 - 10 |
| | DFL | No.3 | | 3 - 0 | 4 - 6 | 6 - 2 | 8 - 0 | 9 - 9 | 2 - 9 | 4 - 1 | 5 - 6 | 7 - 2 | 8 - 9 |
| | HF | SS | | 4 - 4 | 7 - 5 | 10 - 4 | 14 - 1 | 18 - 1 | 4 - 1 | 6 - 11 | 9 - 8 | 13 - 2 | 17 - 1 |
| | HF | No.1 | | 4 - 2 | 6 - 9 | 9 - 3 | 12 - 4 | 15 - 6 | 3 - 9 | 6 - 1 | 8 - 4 | 11 - 0 | 13 - 8 |
| | HF | No.2 | | 3 - 10 | 6 - 2 | 8 - 5 | 11 - 2 | 13 - 11 | 3 - 6 | 5 - 7 | 7 - 7 | 9 - 11 | 12 - 4 |
| | HF | No.3 | | 2 - 11 | 4 - 5 | 5 - 11 | 7 - 9 | 9 - 5 | 2 - 9 | 4 - 0 | 5 - 4 | 6 - 11 | 8 - 5 |
| | SP | SS | | 4 - 7 | 7 - 9 | 10 - 10 | 14 - 10 | 18 - 10 | 4 - 3 | 7 - 3 | 10 - 2 | 13 - 10 | 17 - 10 |
| | SP | No.1 | | 4 - 3 | 7 - 0 | 9 - 8 | 12 - 2 | 15 - 10 | 3 - 10 | 6 - 4 | 8 - 8 | 10 - 10 | 13 - 11 |
| | SP | No.2 | | 3 - 7 | 5 - 9 | 7 - 11 | 10 - 0 | 12 - 8 | 3 - 3 | 5 - 3 | 7 - 1 | 8 - 11 | 11 - 3 |
| | SP | No.3 | | 2 - 9 | 4 - 1 | 5 - 5 | 7 - 0 | 8 - 9 | 2 - 6 | 3 - 9 | 4 - 11 | 6 - 4 | 7 - 11 |
| | SPF | SS | | 4 - 3 | 7 - 2 | 10 - 1 | 13 - 9 | 17 - 9 | 4 - 0 | 6 - 9 | 9 - 5 | 12 - 10 | 16 - 7 |
| | SPF | No.1 | | 3 - 11 | 6 - 3 | 8 - 7 | 11 - 5 | 14 - 3 | 3 - 7 | 5 - 8 | 7 - 9 | 10 - 2 | 12 - 7 |
| | SPF | No.2 | | 3 - 11 | 6 - 3 | 8 - 7 | 11 - 5 | 14 - 3 | 3 - 7 | 5 - 8 | 7 - 9 | 10 - 2 | 12 - 7 |
| | SPF | No.3 | | 2 - 11 | 4 - 5 | 5 - 11 | 7 - 9 | 9 - 5 | 2 - 9 | 4 - 0 | 5 - 4 | 6 - 11 | 8 - 5 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M Rafter Deflection Limit = L/180

# Exposure C

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Rafter Spacing (in.) | Species | Grade | Wind Speed 3-second gust (mph) | 90 | | | | | 95 | | | | | 100 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | | 9 - 3 | 16 - 7 | 22 - 2 | 26-0† | 26-0† | 8 - 11 | 15 - 10 | 21 - 4 | 26-0† | 26-0† | 8 - 6 | 15 - 1 | 20 - 8 | 26-0† | 26-0† |
| | DFL | No.1 | | 8 - 10 | 15 - 9 | 21 - 4 | 26-0† | 26-0† | 8 - 6 | 15 - 0 | 20 - 7 | 26-0† | 26-0† | 8 - 2 | 14 - 4 | 19 - 11 | 25 - 4 | 26-0† |
| | DFL | No.2 | | 8 - 8 | 15 - 4 | 20 - 11 | 26-0† | 26-0† | 8 - 3 | 14 - 8 | 20 - 2 | 25 - 9 | 26-0† | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 10 | 26-0† |
| | DFL | No.3 | | 8 - 2 | 14 - 6 | 20 - 0 | 24 - 8 | 26-0† | 7 - 10 | 13 - 10 | 19 - 1 | 23 - 4 | 26-0† | 7 - 6 | 12 - 9 | 18 - 2 | 22 - 2 | 25 - 9 |
| | HF | SS | | 8 - 8 | 15 - 4 | 20 - 11 | 26-0† | 26-0† | 8 - 3 | 14 - 8 | 20 - 2 | 25 - 9 | 26-0† | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 10 | 26-0† |
| | HF | No.1 | | 8 - 5 | 14 - 11 | 20 - 6 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† | 7 - 9 | 13 - 7 | 19 - 1 | 24 - 4 | 26-0† |
| | HF | No.2 | | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 11 | 26-0† | 7 - 7 | 13 - 4 | 18 - 10 | 24 - 0 | 26-0† | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† |
| | HF | No.3 | | 7 - 8 | 13 - 6 | 19 - 0 | 24 - 1 | 26-0† | 7 - 5 | 12 - 11 | 18 - 4 | 22 - 9 | 26-0† | 7 - 1 | 12 - 4 | 17 - 8 | 21 - 8 | 25 - 1 |
| | SP | SS | | 9 - 1 | 16 - 2 | 21 - 9 | 26-0† | 26-0† | 8 - 8 | 15 - 5 | 21 - 0 | 26-0† | 26-0† | 8 - 4 | 14 - 9 | 20 - 3 | 25 - 10 | 26-0† |
| | SP | No.1 | | 8 - 8 | 15 - 4 | 20 - 11 | 26-0† | 26-0† | 8 - 3 | 14 - 8 | 20 - 2 | 25 - 9 | 26-0† | 7 - 11 | 14 - 0 | 19 - 6 | 24 - 10 | 26-0† |
| | SP | No.2 | | 8 - 2 | 14 - 6 | 20 - 0 | 25 - 6 | 26-0† | 7 - 10 | 13 - 10 | 19 - 3 | 24 - 7 | 26-0† | 7 - 6 | 13 - 2 | 18 - 8 | 23 - 9 | 26-0† |
| | SP | No.3 | | 7 - 7 | 13 - 2 | 18 - 5 | 22 - 4 | 26-0† | 7 - 1 | 12 - 2 | 17 - 5 | 21 - 2 | 25 - 1 | 6 - 7 | 11 - 3 | 16 - 1 | 20 - 1 | 23 - 10 |
| | SPF | SS | | 8 - 5 | 14 - 11 | 20 - 6 | 26-0† | 26-0† | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† | 7 - 9 | 13 - 7 | 19 - 1 | 24 - 4 | 26-0† |
| | SPF | No.1 | | 8 - 2 | 14 - 6 | 20 - 0 | 25 - 6 | 26-0† | 7 - 10 | 13 - 10 | 19 - 3 | 24 - 7 | 26-0† | 7 - 6 | 13 - 2 | 18 - 8 | 23 - 9 | 26-0† |
| | SPF | No.2 | | 8 - 2 | 14 - 6 | 20 - 0 | 25 - 6 | 26-0† | 7 - 10 | 13 - 10 | 19 - 3 | 24 - 7 | 26-0† | 7 - 6 | 13 - 2 | 18 - 8 | 23 - 9 | 26-0† |
| | SPF | No.3 | | 7 - 8 | 13 - 6 | 19 - 0 | 24 - 1 | 26-0† | 7 - 5 | 12 - 11 | 18 - 4 | 22 - 9 | 26-0† | 7 - 1 | 12 - 4 | 17 - 8 | 21 - 8 | 25 - 1 |
| 16 | DFL | SS | | 8 - 3 | 14 - 7 | 20 - 1 | 25 - 8 | 26-0† | 7 - 11 | 13 - 11 | 19 - 5 | 24 - 9 | 26-0† | 7 - 7 | 13 - 4 | 18 - 9 | 23 - 11 | 26-0† |
| | DFL | No.1 | | 7 - 11 | 13 - 11 | 19 - 5 | 24 - 9 | 26-0† | 7 - 7 | 13 - 3 | 18 - 8 | 23 - 10 | 26-0† | 7 - 3 | 12 - 8 | 18 - 1 | 23 - 1 | 26-0† |
| | DFL | No.2 | | 7 - 8 | 13 - 6 | 19 - 0 | 24 - 3 | 26-0† | 7 - 5 | 12 - 11 | 18 - 4 | 23 - 5 | 26-0† | 7 - 1 | 12 - 4 | 17 - 8 | 22 - 7 | 26-0† |
| | DFL | No.3 | | 7 - 1 | 12 - 1 | 17 - 6 | 21 - 4 | 24 - 9 | 6 - 8 | 11 - 2 | 16 - 0 | 20 - 3 | 23 - 5 | 6 - 2 | 10 - 4 | 14 - 9 | 19 - 2 | 22 - 3 |
| | HF | SS | | 7 - 8 | 13 - 6 | 19 - 0 | 24 - 3 | 26-0† | 7 - 5 | 12 - 11 | 18 - 4 | 23 - 5 | 26-0† | 7 - 1 | 12 - 4 | 17 - 8 | 22 - 7 | 26-0† |
| | HF | No.1 | | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 9 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 11 | 26-0† | 6 - 11 | 12 - 0 | 17 - 4 | 22 - 1 | 26-0† |
| | HF | No.2 | | 7 - 1 | 12 - 4 | 17 - 9 | 22 - 7 | 26-0† | 6 - 10 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 8 |
| | HF | No.3 | | 6 - 10 | 11 - 8 | 16 - 10 | 20 - 10 | 24 - 2 | 6 - 5 | 10 - 9 | 15 - 5 | 19 - 9 | 22 - 11 | 6 - 0 | 10 - 0 | 14 - 2 | 18 - 9 | 21 - 9 |
| | SP | SS | | 8 - 1 | 14 - 3 | 19 - 9 | 25 - 2 | 26-0† | 7 - 9 | 13 - 7 | 19 - 1 | 24 - 4 | 26-0† | 7 - 5 | 13 - 0 | 18 - 5 | 23 - 6 | 26-0† |
| | SP | No.1 | | 7 - 8 | 13 - 6 | 19 - 0 | 24 - 3 | 26-0† | 7 - 5 | 12 - 11 | 18 - 4 | 23 - 5 | 26-0† | 7 - 1 | 12 - 4 | 17 - 8 | 22 - 7 | 26-0† |
| | SP | No.2 | | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | SP | No.3 | | 6 - 3 | 10 - 8 | 15 - 1 | 19 - 4 | 22 - 11 | 5 - 10 | 9 - 10 | 13 - 10 | 18 - 4 | 21 - 8 | 5 - 6 | 9 - 2 | 12 - 10 | 17 - 5 | 20 - 7 |
| | SPF | SS | | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 9 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 11 | 26-0† | 6 - 11 | 12 - 0 | 17 - 4 | 22 - 1 | 26-0† |
| | SPF | No.1 | | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | SPF | No.2 | | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† |
| | SPF | No.3 | | 6 - 10 | 11 - 8 | 16 - 10 | 20 - 10 | 24 - 2 | 6 - 5 | 10 - 9 | 15 - 5 | 19 - 9 | 22 - 11 | 6 - 0 | 10 - 0 | 14 - 2 | 18 - 9 | 21 - 9 |
| 19.2 | DFL | SS | | 7 - 8 | 13 - 6 | 18 - 11 | 24 - 2 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 7 - 1 | 12 - 4 | 17 - 8 | 22 - 6 | 26-0† |
| | DFL | No.1 | | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 3 | 26-0† | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 5 | 26-0† | 6 - 9 | 11 - 9 | 16 - 11 | 21 - 8 | 26-0† |
| | DFL | No.2 | | 7 - 2 | 12 - 6 | 17 - 11 | 22 - 10 | 26-0† | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 10 |
| | DFL | No.3 | | 6 - 4 | 10 - 7 | 15 - 1 | 19 - 6 | 22 - 7 | 5 - 11 | 9 - 10 | 13 - 10 | 18 - 5 | 21 - 5 | 5 - 6 | 9 - 1 | 12 - 10 | 17 - 6 | 20 - 4 |
| | HF | SS | | 7 - 2 | 12 - 6 | 17 - 11 | 22 - 10 | 26-0† | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 10 |
| | HF | No.1 | | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 8 | 11 - 7 | 16 - 8 | 21 - 6 | 26-0† | 6 - 5 | 11 - 1 | 15 - 11 | 20 - 10 | 25 - 4 |
| | HF | No.2 | | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 11 | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 6 | 25 - 0 | 6 - 1 | 10 - 6 | 14 - 11 | 19 - 10 | 24 - 2 |
| | HF | No.3 | | 6 - 1 | 10 - 3 | 14 - 6 | 19 - 0 | 22 - 1 | 5 - 9 | 9 - 6 | 13 - 4 | 18 - 0 | 20 - 11 | 5 - 4 | 8 - 10 | 12 - 4 | 16 - 11 | 19 - 10 |
| | SP | SS | | 7 - 6 | 13 - 2 | 18 - 7 | 23 - 9 | 26-0† | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 11 | 26-0† | 6 - 11 | 12 - 0 | 17 - 4 | 22 - 1 | 26-0† |
| | SP | No.1 | | 7 - 2 | 12 - 6 | 17 - 11 | 22 - 10 | 26-0† | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 10 |
| | SP | No.2 | | 6 - 10 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 1 | 25 - 7 | 6 - 3 | 10 - 10 | 15 - 5 | 20 - 4 | 24 - 4 |
| | SP | No.3 | | 5 - 7 | 9 - 4 | 13 - 1 | 17 - 8 | 20 - 11 | 5 - 3 | 8 - 8 | 12 - 1 | 16 - 4 | 19 - 10 | 4 - 11 | 8 - 1 | 11 - 2 | 15 - 0 | 18 - 10 |
| | SPF | SS | | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 8 | 11 - 7 | 16 - 8 | 21 - 6 | 26-0† | 6 - 5 | 11 - 1 | 15 - 11 | 20 - 10 | 25 - 4 |
| | SPF | No.1 | | 6 - 10 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 1 | 25 - 7 | 6 - 3 | 10 - 10 | 15 - 5 | 20 - 4 | 24 - 9 |
| | SPF | No.2 | | 6 - 10 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 1 | 25 - 7 | 6 - 3 | 10 - 10 | 15 - 5 | 20 - 4 | 24 - 9 |
| | SPF | No.3 | | 6 - 1 | 10 - 3 | 14 - 6 | 19 - 0 | 22 - 1 | 5 - 9 | 9 - 6 | 13 - 4 | 18 - 0 | 20 - 11 | 5 - 4 | 8 - 10 | 12 - 4 | 16 - 11 | 19 - 10 |
| 24 | DFL | SS | | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 5 | 26-0† | 6 - 9 | 11 - 8 | 16 - 10 | 21 - 8 | 26-0† | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 11 | 25 - 5 |
| | DFL | No.1 | | 6 - 9 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 10 | 25 - 4 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | DFL | No.2 | | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 3 | 10 - 10 | 15 - 7 | 20 - 5 | 24 - 10 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 23 - 10 |
| | DFL | No.3 | | 5 - 6 | 9 - 0 | 12 - 8 | 17 - 5 | 20 - 2 | 5 - 1 | 8 - 5 | 11 - 8 | 16 - 0 | 19 - 2 | 4 - 10 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 |
| | HF | SS | | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 3 | 10 - 10 | 15 - 7 | 20 - 5 | 24 - 10 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 |
| | HF | No.1 | | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 9 | 25 - 2 | 6 - 2 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 4 | 5 - 11 | 10 - 2 | 14 - 5 | 19 - 4 | 23 - 6 |
| | HF | No.2 | | 6 - 1 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 | 5 - 10 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 2 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 5 | 22 - 5 |
| | HF | No.3 | | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 9 | 4 - 11 | 8 - 1 | 11 - 4 | 15 - 4 | 18 - 8 | 4 - 8 | 7 - 7 | 10 - 6 | 14 - 2 | 17 - 9 |
| | SP | SS | | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 7 | 11 - 5 | 16 - 5 | 21 - 3 | 25 - 10 | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 6 | 25 - 0 |
| | SP | No.1 | | 6 - 7 | 11 - 4 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 3 | 10 - 10 | 15 - 7 | 20 - 5 | 24 - 10 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 |
| | SP | No.2 | | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 2 | 6 - 0 | 10 - 3 | 14 - 8 | 19 - 5 | 22 - 11 | 5 - 9 | 9 - 10 | 14 - 0 | 18 - 5 | 21 - 9 |
| | SP | No.3 | | 4 - 10 | 8 - 1 | 11 - 1 | 14 - 10 | 18 - 8 | 4 - 6 | 7 - 6 | 10 - 3 | 13 - 8 | 17 - 9 | 4 - 3 | 7 - 0 | 9 - 7 | 12 - 8 | 16 - 6 |
| | SPF | SS | | 6 - 5 | 11 - 1 | 15 - 10 | 20 - 9 | 25 - 2 | 6 - 2 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 4 | 5 - 11 | 10 - 2 | 14 - 5 | 19 - 4 | 23 - 6 |
| | SPF | No.1 | | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 8 | 6 - 0 | 10 - 3 | 14 - 8 | 19 - 6 | 23 - 9 | 5 - 9 | 9 - 10 | 14 - 0 | 18 - 11 | 23 - 0 |
| | SPF | No.2 | | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 8 | 6 - 0 | 10 - 3 | 14 - 8 | 19 - 6 | 23 - 9 | 5 - 9 | 9 - 10 | 14 - 0 | 18 - 11 | 23 - 0 |
| | SPF | No.3 | | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 9 | 4 - 11 | 8 - 1 | 11 - 4 | 15 - 4 | 18 - 8 | 4 - 8 | 7 - 7 | 10 - 6 | 14 - 2 | 17 - 9 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

# Exposure C

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Rafter Spacing (in.) | Species | Grade | Wind Speed 3-second gust (mph) | 105 | | | | | 110 | | | | | 115 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | | 8 - 2 | 14 - 5 | 20 - 0 | 25 - 6 | 26-0† | 7 - 11 | 13 - 10 | 19 - 4 | 24 - 9 | 26-0† | 7 - 7 | 13 - 4 | 18 - 10 | 24 - 0 | 26-0† |
| | DFL | No.1 | | 7 - 10 | 13 - 9 | 19 - 3 | 24 - 7 | 26-0† | 7 - 6 | 13 - 3 | 18 - 8 | 23 - 10 | 26-0† | 7 - 3 | 12 - 9 | 18 - 1 | 23 - 1 | 26-0† |
| | DFL | No.2 | | 7 - 8 | 13 - 5 | 18 - 10 | 24 - 1 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 7 - 1 | 12 - 5 | 17 - 9 | 22 - 8 | 26-0† |
| | DFL | No.3 | | 7 - 0 | 11 - 11 | 17 - 3 | 21 - 1 | 24 - 6 | 6 - 7 | 11 - 1 | 15 - 11 | 20 - 2 | 23 - 5 | 6 - 3 | 10 - 5 | 14 - 10 | 19 - 3 | 22 - 4 |
| | HF | SS | | 7 - 8 | 13 - 5 | 18 - 10 | 24 - 1 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 7 - 1 | 12 - 5 | 17 - 9 | 22 - 8 | 26-0† |
| | HF | No.1 | | 7 - 5 | 13 - 0 | 18 - 6 | 23 - 7 | 26-0† | 7 - 2 | 12 - 6 | 17 - 11 | 22 - 10 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 2 | 26-0† |
| | HF | No.2 | | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† | 6 - 9 | 11 - 9 | 17 - 0 | 21 - 9 | 26-0† | 6 - 7 | 11 - 4 | 16 - 3 | 21 - 2 | 25 - 9 |
| | HF | No.3 | | 6 - 10 | 11 - 6 | 16 - 7 | 20 - 7 | 23 - 11 | 6 - 5 | 10 - 9 | 15 - 4 | 19 - 8 | 22 - 10 | 6 - 1 | 10 - 1 | 14 - 3 | 18 - 10 | 21 - 10 |
| | SP | SS | | 8 - 0 | 14 - 1 | 19 - 7 | 25 - 0 | 26-0† | 7 - 9 | 13 - 7 | 19 - 0 | 24 - 3 | 26-0† | 7 - 5 | 13 - 0 | 18 - 6 | 23 - 7 | 26-0† |
| | SP | No.1 | | 7 - 8 | 13 - 5 | 18 - 10 | 24 - 1 | 26-0† | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 7 - 1 | 12 - 5 | 17 - 9 | 22 - 8 | 26-0† |
| | SP | No.2 | | 7 - 3 | 12 - 8 | 18 - 1 | 23 - 0 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 9 | 11 - 8 | 16 - 10 | 21 - 8 | 26-0† |
| | SP | No.3 | | 6 - 2 | 10 - 6 | 14 - 10 | 19 - 2 | 22 - 8 | 5 - 10 | 9 - 10 | 13 - 9 | 18 - 3 | 21 - 8 | 5 - 6 | 9 - 3 | 12 - 11 | 17 - 6 | 20 - 8 |
| | SPF | SS | | 7 - 5 | 13 - 0 | 18 - 6 | 23 - 7 | 26-0† | 7 - 2 | 12 - 6 | 17 - 11 | 22 - 10 | 26-0† | 6 - 11 | 12 - 1 | 17 - 5 | 22 - 2 | 26-0† |
| | SPF | No.1 | | 7 - 3 | 12 - 8 | 18 - 1 | 23 - 0 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 9 | 11 - 8 | 16 - 10 | 21 - 8 | 26-0† |
| | SPF | No.2 | | 7 - 3 | 12 - 8 | 18 - 1 | 23 - 0 | 26-0† | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 9 | 11 - 8 | 16 - 10 | 21 - 8 | 26-0† |
| | SPF | No.3 | | 6 - 10 | 11 - 6 | 16 - 7 | 20 - 7 | 23 - 11 | 6 - 5 | 10 - 9 | 15 - 4 | 19 - 8 | 22 - 10 | 6 - 1 | 10 - 1 | 14 - 3 | 18 - 10 | 21 - 10 |
| 16 | DFL | SS | | 7 - 4 | 12 - 9 | 18 - 2 | 23 - 2 | 26-0† | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 5 | 26-0† | 6 - 9 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† |
| | DFL | No.1 | | 7 - 0 | 12 - 2 | 17 - 6 | 22 - 4 | 26-0† | 6 - 9 | 11 - 8 | 16 - 10 | 21 - 8 | 26-0† | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 0 | 25 - 7 |
| | DFL | No.2 | | 6 - 10 | 11 - 10 | 17 - 1 | 21 - 10 | 26-0† | 6 - 7 | 11 - 5 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 4 | 11 - 0 | 15 - 9 | 20 - 7 | 25 - 0 |
| | DFL | No.3 | | 5 - 10 | 9 - 8 | 13 - 8 | 18 - 3 | 21 - 3 | 5 - 6 | 9 - 1 | 12 - 9 | 17 - 6 | 20 - 3 | 5 - 2 | 8 - 6 | 11 - 11 | 16 - 3 | 19 - 4 |
| | HF | SS | | 6 - 10 | 11 - 10 | 17 - 1 | 21 - 10 | 26-0† | 6 - 7 | 11 - 5 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 4 | 11 - 0 | 15 - 9 | 20 - 7 | 25 - 0 |
| | HF | No.1 | | 6 - 8 | 11 - 6 | 16 - 7 | 21 - 5 | 26-0† | 6 - 5 | 11 - 1 | 15 - 11 | 20 - 9 | 25 - 3 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | HF | No.2 | | 6 - 3 | 10 - 10 | 15 - 6 | 20 - 5 | 24 - 10 | 6 - 1 | 10 - 5 | 14 - 11 | 19 - 9 | 24 - 1 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 2 | 23 - 4 |
| | HF | No.3 | | 5 - 8 | 9 - 4 | 13 - 2 | 17 - 10 | 20 - 8 | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 10 | 19 - 9 | 5 - 0 | 8 - 3 | 11 - 6 | 15 - 8 | 18 - 11 |
| | SP | SS | | 7 - 2 | 12 - 5 | 17 - 10 | 22 - 9 | 26-0† | 6 - 11 | 12 - 0 | 17 - 3 | 22 - 1 | 26-0† | 6 - 8 | 11 - 6 | 16 - 7 | 21 - 5 | 26-0† |
| | SP | No.1 | | 6 - 10 | 11 - 10 | 17 - 1 | 21 - 10 | 26-0† | 6 - 7 | 11 - 5 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 4 | 11 - 0 | 15 - 9 | 20 - 7 | 25 - 0 |
| | SP | No.2 | | 6 - 6 | 11 - 2 | 16 - 1 | 20 - 11 | 25 - 4 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 2 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 8 | 23 - 2 |
| | SP | No.3 | | 5 - 2 | 8 - 7 | 11 - 11 | 16 - 1 | 19 - 8 | 4 - 10 | 8 - 1 | 11 - 1 | 14 - 11 | 18 - 9 | 4 - 7 | 7 - 7 | 10 - 5 | 13 - 11 | 17 - 11 |
| | SPF | SS | | 6 - 8 | 11 - 6 | 16 - 7 | 21 - 5 | 26-0† | 6 - 5 | 11 - 1 | 15 - 11 | 20 - 9 | 25 - 3 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | SPF | No.1 | | 6 - 6 | 11 - 2 | 16 - 1 | 20 - 11 | 25 - 5 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 8 | 23 - 11 |
| | SPF | No.2 | | 6 - 6 | 11 - 2 | 16 - 1 | 20 - 11 | 25 - 5 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 8 | 23 - 11 |
| | SPF | No.3 | | 5 - 8 | 9 - 4 | 13 - 2 | 17 - 10 | 20 - 8 | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 10 | 19 - 9 | 5 - 0 | 8 - 3 | 11 - 6 | 15 - 8 | 18 - 11 |
| 19.2 | DFL | SS | | 6 - 9 | 11 - 10 | 17 - 0 | 21 - 10 | 26-0† | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 2 | 25 - 8 | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 6 | 24 - 11 |
| | DFL | No.1 | | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 0 | 25 - 6 | 6 - 3 | 10 - 10 | 15 - 6 | 20 - 4 | 24 - 9 | 6 - 1 | 10 - 5 | 14 - 11 | 19 - 9 | 24 - 0 |
| | DFL | No.2 | | 6 - 4 | 11 - 0 | 15 - 8 | 20 - 7 | 25 - 0 | 6 - 1 | 10 - 7 | 15 - 1 | 19 - 11 | 24 - 2 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 4 | 23 - 2 |
| | DFL | No.3 | | 5 - 2 | 8 - 6 | 11 - 11 | 16 - 3 | 19 - 4 | 4 - 11 | 8 - 0 | 11 - 1 | 15 - 1 | 18 - 6 | 4 - 8 | 7 - 7 | 10 - 5 | 14 - 1 | 17 - 8 |
| | HF | SS | | 6 - 4 | 11 - 0 | 15 - 8 | 20 - 7 | 25 - 0 | 6 - 1 | 10 - 7 | 15 - 1 | 19 - 11 | 24 - 3 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 4 | 23 - 7 |
| | HF | No.1 | | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 | 6 - 0 | 10 - 3 | 14 - 8 | 19 - 6 | 23 - 9 | 5 - 9 | 9 - 11 | 14 - 1 | 18 - 11 | 23 - 1 |
| | HF | No.2 | | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 2 | 23 - 4 | 5 - 8 | 9 - 8 | 13 - 9 | 18 - 7 | 22 - 8 | 5 - 5 | 9 - 4 | 13 - 3 | 18 - 1 | 22 - 0 |
| | HF | No.3 | | 5 - 0 | 8 - 3 | 11 - 6 | 15 - 8 | 18 - 11 | 4 - 9 | 7 - 9 | 10 - 9 | 14 - 6 | 18 - 0 | 4 - 6 | 7 - 4 | 10 - 1 | 13 - 6 | 17 - 2 |
| | SP | SS | | 6 - 8 | 11 - 6 | 16 - 7 | 21 - 5 | 26-0† | 6 - 5 | 11 - 1 | 15 - 11 | 20 - 9 | 25 - 3 | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 |
| | SP | No.1 | | 6 - 4 | 11 - 0 | 15 - 8 | 20 - 7 | 25 - 0 | 6 - 1 | 10 - 7 | 15 - 1 | 19 - 11 | 24 - 3 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 4 | 23 - 7 |
| | SP | No.2 | | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 8 | 23 - 2 | 5 - 10 | 10 - 0 | 14 - 2 | 18 - 9 | 22 - 1 | 5 - 7 | 9 - 8 | 13 - 8 | 17 - 11 | 21 - 2 |
| | SP | No.3 | | 4 - 7 | 7 - 7 | 10 - 5 | 13 - 11 | 17 - 11 | 4 - 4 | 7 - 2 | 9 - 9 | 12 - 11 | 17 - 0 | 4 - 1 | 6 - 9 | 9 - 2 | 12 - 1 | 15 - 9 |
| | SPF | SS | | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 2 | 24 - 6 | 6 - 0 | 10 - 3 | 14 - 8 | 19 - 6 | 23 - 9 | 5 - 9 | 9 - 11 | 14 - 1 | 18 - 11 | 23 - 1 |
| | SPF | No.1 | | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 8 | 23 - 11 | 5 - 10 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 3 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 6 | 22 - 6 |
| | SPF | No.2 | | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 8 | 23 - 11 | 5 - 10 | 10 - 0 | 14 - 2 | 19 - 1 | 23 - 3 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 6 | 22 - 6 |
| | SPF | No.3 | | 5 - 0 | 8 - 3 | 11 - 6 | 15 - 8 | 18 - 11 | 4 - 9 | 7 - 9 | 10 - 9 | 14 - 6 | 18 - 0 | 4 - 6 | 7 - 4 | 10 - 1 | 13 - 6 | 17 - 2 |
| 24 | DFL | SS | | 6 - 3 | 10 - 9 | 15 - 4 | 20 - 3 | 24 - 7 | 6 - 0 | 10 - 4 | 14 - 9 | 19 - 7 | 23 - 10 | 5 - 9 | 9 - 11 | 14 - 2 | 19 - 0 | 23 - 2 |
| | DFL | No.1 | | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 9 | 5 - 9 | 9 - 10 | 14 - 0 | 18 - 11 | 22 - 10 | 5 - 6 | 9 - 6 | 13 - 6 | 18 - 4 | 21 - 10 |
| | DFL | No.2 | | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 1 | 22 - 8 | 5 - 7 | 9 - 7 | 13 - 8 | 18 - 6 | 21 - 8 | 5 - 5 | 9 - 3 | 13 - 2 | 17 - 10 | 20 - 8 |
| | DFL | No.3 | | 4 - 6 | 7 - 4 | 10 - 2 | 13 - 7 | 17 - 4 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 8 | 16 - 0 | 4 - 0 | 6 - 6 | 8 - 11 | 11 - 10 | 14 - 11 |
| | HF | SS | | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 1 | 23 - 3 | 5 - 7 | 9 - 7 | 13 - 8 | 18 - 6 | 22 - 6 | 5 - 5 | 9 - 3 | 13 - 2 | 18 - 0 | 21 - 10 |
| | HF | No.1 | | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 8 | 22 - 9 | 5 - 6 | 9 - 4 | 13 - 3 | 18 - 2 | 22 - 1 | 5 - 3 | 9 - 0 | 12 - 9 | 17 - 7 | 21 - 5 |
| | HF | No.2 | | 5 - 4 | 9 - 2 | 13 - 0 | 17 - 10 | 21 - 8 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 3 | 21 - 0 | 5 - 0 | 8 - 6 | 12 - 0 | 16 - 7 | 20 - 1 |
| | HF | No.3 | | 4 - 4 | 7 - 1 | 9 - 10 | 13 - 1 | 16 - 7 | 4 - 2 | 6 - 8 | 9 - 2 | 12 - 3 | 15 - 4 | 3 - 11 | 6 - 4 | 8 - 8 | 11 - 5 | 14 - 4 |
| | SP | SS | | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 10 | 24 - 2 | 5 - 10 | 10 - 1 | 14 - 5 | 19 - 3 | 23 - 5 | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 8 | 22 - 9 |
| | SP | No.1 | | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 1 | 23 - 3 | 5 - 7 | 9 - 7 | 13 - 8 | 18 - 6 | 22 - 6 | 5 - 5 | 9 - 3 | 13 - 2 | 18 - 0 | 21 - 10 |
| | SP | No.2 | | 5 - 6 | 9 - 6 | 13 - 5 | 17 - 7 | 20 - 8 | 5 - 3 | 8 - 11 | 12 - 6 | 16 - 5 | 19 - 9 | 5 - 0 | 8 - 5 | 11 - 9 | 15 - 3 | 18 - 11 |
| | SP | No.3 | | 4 - 0 | 6 - 7 | 8 - 11 | 11 - 9 | 15 - 3 | 3 - 10 | 6 - 2 | 8 - 5 | 11 - 0 | 14 - 2 | 3 - 8 | 5 - 10 | 7 - 11 | 10 - 4 | 13 - 2 |
| | SPF | SS | | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 8 | 22 - 9 | 5 - 6 | 9 - 4 | 13 - 3 | 18 - 2 | 22 - 1 | 5 - 3 | 9 - 0 | 12 - 9 | 17 - 7 | 21 - 5 |
| | SPF | No.1 | | 5 - 6 | 9 - 6 | 13 - 5 | 18 - 3 | 22 - 3 | 5 - 4 | 9 - 1 | 12 - 11 | 17 - 9 | 21 - 4 | 5 - 2 | 8 - 9 | 12 - 5 | 17 - 2 | 20 - 5 |
| | SPF | No.2 | | 5 - 6 | 9 - 6 | 13 - 5 | 18 - 3 | 22 - 3 | 5 - 4 | 9 - 1 | 12 - 11 | 17 - 9 | 21 - 4 | 5 - 2 | 8 - 9 | 12 - 5 | 17 - 2 | 20 - 5 |
| | SPF | No.3 | | 4 - 4 | 7 - 1 | 9 - 10 | 13 - 1 | 16 - 7 | 4 - 2 | 6 - 8 | 9 - 2 | 12 - 3 | 15 - 4 | 3 - 11 | 6 - 4 | 8 - 8 | 11 - 5 | 14 - 4 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

# Exposure C

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Wind Speed 3-second gust (mph) | | | 120 | | | | | 130 | | | | | 140 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 7 - 4 | 12 - 10 | 18 - 3 | 23 - 4 | 26-0† | 6 - 11 | 12 - 0 | 17 - 4 | 22 - 1 | 26-0† | 6 - 6 | 11 - 3 | 16 - 2 | 21 - 0 | 25 - 7 |
| | DFL | No.1 | 7 - 0 | 12 - 3 | 17 - 7 | 22 - 6 | 26-0† | 6 - 7 | 11 - 5 | 16 - 6 | 21 - 4 | 25 - 11 | 6 - 3 | 10 - 9 | 15 - 5 | 20 - 3 | 24 - 8 |
| | DFL | No.2 | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 11 | 25 - 5 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 10 | 24 - 1 |
| | DFL | No.3 | 5 - 11 | 9 - 10 | 13 - 11 | 18 - 6 | 21 - 5 | 5 - 4 | 8 - 9 | 12 - 3 | 16 - 10 | 19 - 9 | 4 - 10 | 7 - 11 | 11 - 0 | 14 - 11 | 18 - 4 |
| | HF | SS | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 11 | 25 - 5 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 10 | 24 - 2 |
| | HF | No.1 | 6 - 8 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† | 6 - 3 | 10 - 10 | 15 - 7 | 20 - 5 | 24 - 10 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 5 | 23 - 8 |
| | HF | No.2 | 6 - 4 | 10 - 11 | 15 - 8 | 20 - 7 | 25 - 0 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 6 | 23 - 8 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 6 | 22 - 7 |
| | HF | No.3 | 5 - 9 | 9 - 6 | 13 - 4 | 18 - 0 | 20 - 11 | 5 - 2 | 8 - 6 | 11 - 10 | 16 - 2 | 19 - 4 | 4 - 8 | 7 - 8 | 10 - 8 | 14 - 4 | 17 - 11 |
| | SP | SS | 7 - 2 | 12 - 7 | 17 - 11 | 22 - 11 | 26-0† | 6 - 9 | 11 - 9 | 16 - 11 | 21 - 9 | 26-0† | 6 - 4 | 11 - 0 | 15 - 10 | 20 - 8 | 25 - 2 |
| | SP | No.1 | 6 - 10 | 11 - 11 | 17 - 3 | 22 - 0 | 26-0† | 6 - 5 | 11 - 2 | 16 - 0 | 20 - 11 | 25 - 5 | 6 - 1 | 10 - 6 | 15 - 0 | 19 - 10 | 24 - 2 |
| | SP | No.2 | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 7 | 6 - 1 | 10 - 7 | 15 - 1 | 20 - 0 | 23 - 8 | 5 - 9 | 9 - 11 | 14 - 1 | 18 - 8 | 21 - 11 |
| | SP | No.3 | 5 - 3 | 8 - 9 | 12 - 1 | 16 - 4 | 19 - 10 | 4 - 9 | 7 - 10 | 10 - 9 | 14 - 5 | 18 - 4 | 4 - 4 | 7 - 1 | 9 - 8 | 12 - 10 | 16 - 9 |
| | SPF | SS | 6 - 8 | 11 - 8 | 16 - 9 | 21 - 7 | 26-0† | 6 - 3 | 10 - 10 | 15 - 7 | 20 - 5 | 24 - 10 | 5 - 11 | 10 - 3 | 14 - 7 | 19 - 5 | 23 - 8 |
| | SPF | No.1 | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 7 | 6 - 1 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 3 | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 23 - 1 |
| | SPF | No.2 | 6 - 6 | 11 - 4 | 16 - 3 | 21 - 1 | 25 - 7 | 6 - 1 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 3 | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 23 - 1 |
| | SPF | No.3 | 5 - 9 | 9 - 6 | 13 - 4 | 18 - 0 | 20 - 11 | 5 - 2 | 8 - 6 | 11 - 10 | 16 - 2 | 19 - 4 | 4 - 8 | 7 - 8 | 10 - 8 | 14 - 4 | 17 - 11 |
| 16 | DFL | SS | 6 - 7 | 11 - 5 | 16 - 4 | 21 - 2 | 25 - 9 | 6 - 2 | 10 - 8 | 15 - 2 | 20 - 1 | 24 - 5 | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 1 | 23 - 3 |
| | DFL | No.1 | 6 - 3 | 10 - 10 | 15 - 6 | 20 - 5 | 24 - 10 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 4 | 23 - 6 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 5 | 21 - 11 |
| | DFL | No.2 | 6 - 2 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 4 | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 22 - 5 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 0 | 20 - 10 |
| | DFL | No.3 | 4 - 11 | 8 - 1 | 11 - 2 | 15 - 2 | 18 - 7 | 4 - 5 | 7 - 3 | 10 - 0 | 13 - 5 | 17 - 0 | 4 - 1 | 6 - 7 | 9 - 0 | 12 - 0 | 15 - 0 |
| | HF | SS | 6 - 2 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 4 | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 23 - 1 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 1 | 21 - 11 |
| | HF | No.1 | 6 - 0 | 10 - 4 | 14 - 8 | 19 - 7 | 23 - 10 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 7 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 6 |
| | HF | No.2 | 5 - 8 | 9 - 9 | 13 - 10 | 18 - 8 | 22 - 8 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 6 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 8 | 20 - 3 |
| | HF | No.3 | 4 - 9 | 7 - 10 | 10 - 10 | 14 - 7 | 18 - 1 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 4 | 3 - 11 | 6 - 4 | 8 - 9 | 11 - 7 | 14 - 5 |
| | SP | SS | 6 - 5 | 11 - 1 | 15 - 11 | 20 - 10 | 25 - 4 | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 | 5 - 8 | 9 - 9 | 13 - 11 | 18 - 9 | 22 - 10 |
| | SP | No.1 | 6 - 2 | 10 - 7 | 15 - 1 | 20 - 0 | 24 - 4 | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 23 - 1 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 1 | 21 - 11 |
| | SP | No.2 | 5 - 10 | 10 - 0 | 14 - 3 | 18 - 10 | 22 - 2 | 5 - 6 | 9 - 4 | 13 - 3 | 17 - 5 | 20 - 6 | 5 - 0 | 8 - 6 | 11 - 10 | 15 - 5 | 19 - 0 |
| | SP | No.3 | 4 - 4 | 7 - 2 | 9 - 10 | 13 - 0 | 17 - 1 | 3 - 11 | 6 - 6 | 8 - 10 | 11 - 7 | 14 - 11 | 3 - 8 | 5 - 11 | 7 - 11 | 10 - 5 | 13 - 4 |
| | SPF | SS | 6 - 0 | 10 - 4 | 14 - 8 | 19 - 7 | 23 - 10 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 7 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 6 |
| | SPF | No.1 | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 2 | 23 - 3 | 5 - 6 | 9 - 5 | 13 - 3 | 18 - 2 | 22 - 1 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 3 | 20 - 6 |
| | SPF | No.2 | 5 - 10 | 10 - 0 | 14 - 3 | 19 - 2 | 23 - 3 | 5 - 6 | 9 - 5 | 13 - 3 | 18 - 2 | 22 - 1 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 3 | 20 - 6 |
| | SPF | No.3 | 4 - 9 | 7 - 10 | 10 - 10 | 14 - 7 | 18 - 1 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 4 | 3 - 11 | 6 - 4 | 8 - 9 | 11 - 7 | 14 - 5 |
| 19.2 | DFL | SS | 6 - 1 | 10 - 7 | 15 - 1 | 19 - 11 | 24 - 3 | 5 - 9 | 9 - 10 | 14 - 0 | 18 - 11 | 23 - 0 | 5 - 5 | 9 - 3 | 13 - 2 | 18 - 0 | 21 - 11 |
| | DFL | No.1 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 3 | 23 - 4 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 3 | 21 - 7 | 5 - 2 | 8 - 10 | 12 - 6 | 17 - 3 | 20 - 0 |
| | DFL | No.2 | 5 - 9 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 2 | 5 - 4 | 9 - 2 | 12 - 11 | 17 - 8 | 20 - 6 | 5 - 1 | 8 - 4 | 11 - 7 | 15 - 9 | 19 - 0 |
| | DFL | No.3 | 4 - 5 | 7 - 2 | 9 - 10 | 13 - 2 | 16 - 8 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 8 | 14 - 7 | 3 - 8 | 5 - 10 | 7 - 11 | 10 - 6 | 13 - 0 |
| | HF | SS | 5 - 9 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 11 | 5 - 4 | 9 - 2 | 13 - 0 | 17 - 10 | 21 - 8 | 5 - 1 | 8 - 8 | 12 - 3 | 16 - 10 | 20 - 8 |
| | HF | No.1 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 5 | 22 - 5 | 5 - 3 | 8 - 11 | 12 - 8 | 17 - 6 | 21 - 3 | 4 - 11 | 8 - 5 | 11 - 11 | 16 - 4 | 19 - 9 |
| | HF | No.2 | 5 - 3 | 9 - 0 | 12 - 9 | 17 - 7 | 21 - 4 | 4 - 11 | 8 - 5 | 11 - 11 | 16 - 5 | 19 - 11 | 4 - 8 | 8 - 0 | 11 - 1 | 15 - 1 | 18 - 6 |
| | HF | No.3 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 8 | 16 - 0 | 3 - 10 | 6 - 3 | 8 - 6 | 11 - 3 | 14 - 1 | 3 - 7 | 5 - 8 | 7 - 8 | 10 - 2 | 12 - 7 |
| | SP | SS | 6 - 0 | 10 - 4 | 14 - 8 | 19 - 7 | 23 - 10 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 7 | 5 - 4 | 9 - 1 | 12 - 10 | 17 - 8 | 21 - 6 |
| | SP | No.1 | 5 - 9 | 9 - 10 | 13 - 11 | 18 - 10 | 22 - 11 | 5 - 4 | 9 - 2 | 13 - 0 | 17 - 10 | 21 - 7 | 5 - 1 | 8 - 8 | 12 - 3 | 16 - 7 | 20 - 0 |
| | SP | No.2 | 5 - 5 | 9 - 3 | 13 - 0 | 17 - 1 | 20 - 3 | 4 - 11 | 8 - 3 | 11 - 6 | 15 - 0 | 18 - 8 | 4 - 5 | 7 - 6 | 10 - 4 | 13 - 4 | 17 - 4 |
| | SP | No.3 | 3 - 11 | 6 - 5 | 8 - 8 | 11 - 4 | 14 - 8 | 3 - 7 | 5 - 9 | 7 - 9 | 10 - 2 | 13 - 0 | 3 - 4 | 5 - 3 | 7 - 1 | 9 - 2 | 11 - 7 |
| | SPF | SS | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 5 | 22 - 5 | 5 - 3 | 8 - 11 | 12 - 8 | 17 - 6 | 21 - 3 | 4 - 11 | 8 - 5 | 11 - 11 | 16 - 4 | 20 - 3 |
| | SPF | No.1 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 0 | 21 - 10 | 5 - 1 | 8 - 9 | 12 - 3 | 17 - 0 | 20 - 2 | 4 - 10 | 8 - 2 | 11 - 4 | 15 - 5 | 18 - 9 |
| | SPF | No.2 | 5 - 5 | 9 - 4 | 13 - 2 | 18 - 0 | 21 - 10 | 5 - 1 | 8 - 9 | 12 - 3 | 17 - 0 | 20 - 2 | 4 - 10 | 8 - 2 | 11 - 4 | 15 - 5 | 18 - 9 |
| | SPF | No.3 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 8 | 16 - 0 | 3 - 10 | 6 - 3 | 8 - 6 | 11 - 3 | 14 - 1 | 3 - 7 | 5 - 8 | 7 - 8 | 10 - 2 | 12 - 7 |
| 24 | DFL | SS | 5 - 7 | 9 - 7 | 13 - 8 | 18 - 6 | 22 - 6 | 5 - 3 | 9 - 0 | 12 - 9 | 17 - 7 | 21 - 4 | 5 - 0 | 8 - 6 | 11 - 11 | 16 - 6 | 20 - 4 |
| | DFL | No.1 | 5 - 4 | 9 - 2 | 13 - 0 | 17 - 10 | 20 - 11 | 5 - 0 | 8 - 6 | 11 - 10 | 16 - 2 | 19 - 4 | 4 - 8 | 7 - 8 | 10 - 8 | 14 - 4 | 17 - 11 |
| | DFL | No.2 | 5 - 3 | 8 - 10 | 12 - 4 | 16 - 11 | 19 - 10 | 4 - 10 | 7 - 11 | 11 - 0 | 14 - 10 | 18 - 4 | 4 - 5 | 7 - 2 | 9 - 11 | 13 - 3 | 16 - 9 |
| | DFL | No.3 | 3 - 10 | 6 - 2 | 8 - 5 | 11 - 2 | 13 - 11 | 3 - 6 | 5 - 7 | 7 - 7 | 9 - 11 | 12 - 4 | 3 - 3 | 5 - 1 | 6 - 10 | 9 - 0 | 11 - 1 |
| | HF | SS | 5 - 3 | 9 - 0 | 12 - 8 | 17 - 6 | 21 - 3 | 4 - 11 | 8 - 5 | 11 - 10 | 16 - 3 | 20 - 2 | 4 - 8 | 7 - 11 | 11 - 1 | 15 - 3 | 19 - 2 |
| | HF | No.1 | 5 - 1 | 8 - 9 | 12 - 4 | 17 - 0 | 20 - 8 | 4 - 10 | 8 - 2 | 11 - 6 | 15 - 10 | 19 - 1 | 4 - 6 | 7 - 7 | 10 - 5 | 14 - 1 | 17 - 8 |
| | HF | No.2 | 4 - 10 | 8 - 3 | 11 - 7 | 15 - 11 | 19 - 3 | 4 - 7 | 7 - 7 | 10 - 6 | 14 - 2 | 17 - 10 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 8 | 16 - 0 |
| | HF | No.3 | 3 - 9 | 6 - 0 | 8 - 2 | 10 - 9 | 13 - 5 | 3 - 5 | 5 - 5 | 7 - 4 | 9 - 7 | 11 - 11 | 3 - 2 | 4 - 11 | 6 - 8 | 8 - 8 | 10 - 8 |
| | SP | SS | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 1 | 5 - 2 | 8 - 10 | 12 - 5 | 17 - 2 | 21 - 0 | 4 - 10 | 8 - 4 | 11 - 8 | 16 - 1 | 19 - 11 |
| | SP | No.1 | 5 - 3 | 9 - 0 | 12 - 8 | 17 - 6 | 20 - 11 | 4 - 11 | 8 - 5 | 11 - 10 | 15 - 7 | 19 - 4 | 4 - 8 | 7 - 11 | 11 - 0 | 13 - 10 | 17 - 11 |
| | SP | No.2 | 4 - 8 | 7 - 11 | 11 - 0 | 14 - 3 | 18 - 1 | 4 - 3 | 7 - 2 | 9 - 10 | 12 - 7 | 16 - 4 | 3 - 11 | 6 - 6 | 8 - 10 | 11 - 3 | 14 - 5 |
| | SP | No.3 | 3 - 6 | 5 - 6 | 7 - 5 | 9 - 8 | 12 - 4 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 8 | 11 - 0 | 3 - 0 | 4 - 7 | 6 - 1 | 7 - 10 | 9 - 11 |
| | SPF | SS | 5 - 1 | 8 - 9 | 12 - 4 | 17 - 0 | 20 - 10 | 4 - 10 | 8 - 2 | 11 - 6 | 15 - 10 | 19 - 9 | 4 - 6 | 7 - 9 | 10 - 10 | 14 - 10 | 18 - 9 |
| | SPF | No.1 | 5 - 0 | 8 - 6 | 12 - 0 | 16 - 6 | 19 - 7 | 4 - 8 | 7 - 9 | 10 - 9 | 14 - 6 | 18 - 1 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 5 |
| | SPF | No.2 | 5 - 0 | 8 - 6 | 12 - 0 | 16 - 6 | 19 - 7 | 4 - 8 | 7 - 9 | 10 - 9 | 14 - 6 | 18 - 1 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 5 |
| | SPF | No.3 | 3 - 9 | 6 - 0 | 8 - 2 | 10 - 9 | 13 - 5 | 3 - 5 | 5 - 5 | 7 - 4 | 9 - 7 | 11 - 11 | 3 - 2 | 4 - 11 | 6 - 8 | 8 - 8 | 10 - 8 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

# Exposure C

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

| Wind Speed 3-second gust (mph) | | | 150 | | | | | 160 | | | | | 170 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | | | | | | |
| 12 | DFL | SS | 6 - 2 | 10 - 8 | 15 - 3 | 20 - 1 | 24 - 5 | 5 - 10 | 10 - 1 | 14 - 4 | 19 - 3 | 23 - 5 | 5 - 7 | 9 - 7 | 13 - 7 | 18 - 6 | 22 - 6 |
| | DFL | No.1 | 5 - 11 | 10 - 2 | 14 - 6 | 19 - 4 | 23 - 7 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 2 | 5 - 4 | 9 - 2 | 13 - 0 | 17 - 10 | 20 - 11 |
| | DFL | No.2 | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 22 - 5 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 21 - 1 | 5 - 3 | 8 - 10 | 12 - 4 | 16 - 11 | 19 - 10 |
| | DFL | No.3 | 4 - 5 | 7 - 3 | 10 - 0 | 13 - 5 | 17 - 0 | 4 - 1 | 6 - 8 | 9 - 2 | 12 - 2 | 15 - 3 | 3 - 10 | 6 - 2 | 8 - 5 | 11 - 1 | 13 - 11 |
| | HF | SS | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 23 - 1 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 1 | 5 - 3 | 8 - 11 | 12 - 8 | 17 - 5 | 21 - 3 |
| | HF | No.1 | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 7 | 5 - 4 | 9 - 2 | 12 - 11 | 17 - 9 | 21 - 8 | 5 - 1 | 8 - 9 | 12 - 4 | 17 - 0 | 20 - 7 |
| | HF | No.2 | 5 - 4 | 9 - 1 | 12 - 11 | 17 - 8 | 21 - 6 | 5 - 1 | 8 - 8 | 12 - 2 | 16 - 10 | 20 - 5 | 4 - 10 | 8 - 3 | 11 - 7 | 15 - 11 | 19 - 3 |
| | HF | No.3 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 4 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 9 | 14 - 8 | 3 - 9 | 6 - 0 | 8 - 2 | 10 - 9 | 13 - 4 |
| | SP | SS | 6 - 0 | 10 - 5 | 14 - 10 | 19 - 9 | 24 - 0 | 5 - 9 | 9 - 10 | 14 - 0 | 18 - 11 | 23 - 0 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 1 |
| | SP | No.1 | 5 - 9 | 9 - 11 | 14 - 1 | 19 - 0 | 23 - 1 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 1 | 5 - 3 | 8 - 11 | 12 - 8 | 17 - 5 | 20 - 11 |
| | SP | No.2 | 5 - 6 | 9 - 5 | 13 - 3 | 17 - 5 | 20 - 6 | 5 - 1 | 8 - 7 | 12 - 0 | 15 - 8 | 19 - 3 | 4 - 8 | 7 - 11 | 11 - 0 | 14 - 2 | 18 - 1 |
| | SP | No.3 | 3 - 11 | 6 - 6 | 8 - 10 | 11 - 7 | 15 - 0 | 3 - 8 | 5 - 11 | 8 - 1 | 10 - 7 | 13 - 6 | 3 - 6 | 5 - 6 | 7 - 5 | 9 - 8 | 12 - 4 |
| | SPF | SS | 5 - 7 | 9 - 8 | 13 - 8 | 18 - 7 | 22 - 7 | 5 - 4 | 9 - 2 | 12 - 11 | 17 - 9 | 21 - 8 | 5 - 1 | 8 - 9 | 12 - 4 | 17 - 0 | 20 - 9 |
| | SPF | No.1 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 1 | 5 - 2 | 8 - 11 | 12 - 7 | 17 - 5 | 20 - 9 | 5 - 0 | 8 - 6 | 11 - 11 | 16 - 6 | 19 - 6 |
| | SPF | No.2 | 5 - 6 | 9 - 5 | 13 - 4 | 18 - 2 | 22 - 1 | 5 - 2 | 8 - 11 | 12 - 7 | 17 - 5 | 20 - 9 | 5 - 0 | 8 - 6 | 11 - 11 | 16 - 6 | 19 - 6 |
| | SPF | No.3 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 4 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 9 | 14 - 8 | 3 - 9 | 6 - 0 | 8 - 2 | 10 - 9 | 13 - 4 |
| 16 | DFL | SS | 5 - 6 | 9 - 5 | 13 - 5 | 18 - 3 | 22 - 2 | 5 - 3 | 9 - 0 | 12 - 8 | 17 - 6 | 21 - 3 | 5 - 0 | 8 - 6 | 12 - 0 | 16 - 7 | 20 - 5 |
| | DFL | No.1 | 5 - 3 | 9 - 0 | 12 - 9 | 17 - 7 | 20 - 6 | 5 - 0 | 8 - 5 | 11 - 9 | 16 - 1 | 19 - 3 | 4 - 9 | 7 - 9 | 10 - 9 | 14 - 7 | 18 - 1 |
| | DFL | No.2 | 5 - 2 | 8 - 7 | 12 - 0 | 16 - 5 | 19 - 5 | 4 - 10 | 7 - 10 | 10 - 11 | 14 - 9 | 18 - 3 | 4 - 5 | 7 - 3 | 10 - 0 | 13 - 5 | 17 - 0 |
| | DFL | No.3 | 3 - 9 | 6 - 0 | 8 - 2 | 10 - 10 | 13 - 6 | 3 - 6 | 5 - 6 | 7 - 6 | 9 - 11 | 12 - 3 | 3 - 4 | 5 - 1 | 6 - 11 | 9 - 1 | 11 - 2 |
| | HF | SS | 5 - 2 | 8 - 10 | 12 - 5 | 17 - 3 | 21 - 0 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 3 | 20 - 1 | 4 - 8 | 8 - 0 | 11 - 2 | 15 - 4 | 19 - 3 |
| | HF | No.1 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 8 | 20 - 3 | 4 - 9 | 8 - 2 | 11 - 6 | 15 - 9 | 19 - 0 | 4 - 7 | 7 - 8 | 10 - 7 | 14 - 3 | 17 - 10 |
| | HF | No.2 | 4 - 9 | 8 - 1 | 11 - 5 | 15 - 7 | 18 - 11 | 4 - 6 | 7 - 7 | 10 - 6 | 14 - 1 | 17 - 9 | 4 - 4 | 7 - 0 | 9 - 7 | 12 - 10 | 16 - 3 |
| | HF | No.3 | 3 - 8 | 5 - 10 | 7 - 11 | 10 - 5 | 13 - 0 | 3 - 5 | 5 - 4 | 7 - 3 | 9 - 7 | 11 - 10 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 9 | 10 - 10 |
| | SP | SS | 5 - 5 | 9 - 3 | 13 - 1 | 17 - 11 | 21 - 10 | 5 - 2 | 8 - 9 | 12 - 5 | 17 - 1 | 20 - 11 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 2 | 20 - 1 |
| | SP | No.1 | 5 - 2 | 8 - 10 | 12 - 5 | 17 - 3 | 20 - 6 | 4 - 11 | 8 - 4 | 11 - 9 | 15 - 5 | 19 - 3 | 4 - 8 | 8 - 0 | 11 - 1 | 14 - 0 | 18 - 1 |
| | SP | No.2 | 4 - 7 | 7 - 9 | 10 - 8 | 13 - 10 | 17 - 9 | 4 - 3 | 7 - 1 | 9 - 9 | 12 - 6 | 16 - 2 | 3 - 11 | 6 - 6 | 9 - 0 | 11 - 5 | 14 - 8 |
| | SP | No.3 | 3 - 5 | 5 - 5 | 7 - 3 | 9 - 5 | 12 - 0 | 3 - 2 | 5 - 0 | 6 - 8 | 8 - 8 | 10 - 11 | 3 - 0 | 4 - 7 | 6 - 2 | 7 - 11 | 10 - 0 |
| | SPF | SS | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 8 | 20 - 6 | 4 - 9 | 8 - 2 | 11 - 6 | 15 - 9 | 19 - 8 | 4 - 7 | 7 - 9 | 10 - 11 | 14 - 11 | 18 - 11 |
| | SPF | No.1 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 0 | 19 - 2 | 4 - 8 | 7 - 9 | 10 - 8 | 14 - 5 | 18 - 0 | 4 - 5 | 7 - 1 | 9 - 10 | 13 - 1 | 16 - 8 |
| | SPF | No.2 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 0 | 19 - 2 | 4 - 8 | 7 - 9 | 10 - 8 | 14 - 5 | 18 - 0 | 4 - 5 | 7 - 1 | 9 - 10 | 13 - 1 | 16 - 8 |
| | SPF | No.3 | 3 - 8 | 5 - 10 | 7 - 11 | 10 - 5 | 13 - 0 | 3 - 5 | 5 - 4 | 7 - 3 | 9 - 7 | 11 - 10 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 9 | 10 - 10 |
| 19.2 | DFL | SS | 5 - 2 | 8 - 9 | 12 - 5 | 17 - 2 | 20 - 11 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 2 | 20 - 0 | 4 - 8 | 7 - 11 | 11 - 2 | 15 - 3 | 19 - 3 |
| | DFL | No.1 | 4 - 11 | 8 - 2 | 11 - 4 | 15 - 4 | 18 - 8 | 4 - 7 | 7 - 6 | 10 - 4 | 13 - 10 | 17 - 6 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 8 | 16 - 0 |
| | DFL | No.2 | 4 - 8 | 7 - 7 | 10 - 6 | 14 - 2 | 17 - 9 | 4 - 3 | 7 - 0 | 9 - 7 | 12 - 10 | 16 - 2 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 8 | 14 - 8 |
| | DFL | No.3 | 3 - 5 | 5 - 4 | 7 - 3 | 9 - 6 | 11 - 9 | 3 - 3 | 4 - 11 | 6 - 8 | 8 - 8 | 10 - 8 | 3 - 0 | 4 - 7 | 6 - 2 | 8 - 0 | 9 - 10 |
| | HF | SS | 4 - 10 | 8 - 2 | 11 - 6 | 15 - 10 | 19 - 9 | 4 - 7 | 7 - 9 | 10 - 11 | 14 - 11 | 18 - 11 | 4 - 4 | 7 - 5 | 10 - 4 | 14 - 2 | 18 - 2 |
| | HF | No.1 | 4 - 8 | 8 - 0 | 11 - 1 | 15 - 1 | 18 - 6 | 4 - 5 | 7 - 4 | 10 - 2 | 13 - 7 | 17 - 4 | 4 - 2 | 6 - 9 | 9 - 4 | 12 - 5 | 15 - 8 |
| | HF | No.2 | 4 - 5 | 7 - 4 | 10 - 1 | 13 - 6 | 17 - 2 | 4 - 2 | 6 - 8 | 9 - 3 | 12 - 3 | 15 - 5 | 3 - 10 | 6 - 2 | 8 - 6 | 11 - 3 | 14 - 0 |
| | HF | No.3 | 3 - 4 | 5 - 2 | 7 - 0 | 9 - 2 | 11 - 4 | 3 - 2 | 4 - 9 | 6 - 5 | 8 - 5 | 10 - 4 | 2 - 11 | 4 - 5 | 6 - 0 | 7 - 9 | 9 - 6 |
| | SP | SS | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 8 | 20 - 6 | 4 - 9 | 8 - 2 | 11 - 6 | 15 - 9 | 19 - 8 | 4 - 7 | 7 - 9 | 10 - 11 | 14 - 11 | 18 - 11 |
| | SP | No.1 | 4 - 10 | 8 - 2 | 11 - 6 | 14 - 10 | 18 - 8 | 4 - 7 | 7 - 8 | 10 - 7 | 13 - 5 | 17 - 6 | 4 - 3 | 7 - 1 | 9 - 9 | 12 - 3 | 16 - 0 |
| | SP | No.2 | 4 - 1 | 6 - 10 | 9 - 5 | 12 - 0 | 15 - 6 | 3 - 10 | 6 - 3 | 8 - 7 | 10 - 11 | 14 - 0 | 3 - 7 | 5 - 10 | 7 - 11 | 10 - 0 | 12 - 9 |
| | SP | No.3 | 3 - 1 | 4 - 10 | 6 - 5 | 8 - 4 | 10 - 6 | 2 - 11 | 4 - 5 | 5 - 11 | 7 - 8 | 9 - 7 | 2 - 9 | 4 - 1 | 5 - 6 | 7 - 1 | 8 - 10 |
| | SPF | SS | 4 - 8 | 8 - 0 | 11 - 2 | 15 - 5 | 19 - 4 | 4 - 5 | 7 - 7 | 10 - 7 | 14 - 6 | 18 - 6 | 4 - 3 | 7 - 3 | 10 - 1 | 13 - 9 | 17 - 9 |
| | SPF | No.1 | 4 - 7 | 7 - 5 | 10 - 3 | 13 - 10 | 17 - 6 | 4 - 3 | 6 - 10 | 9 - 5 | 12 - 6 | 15 - 10 | 3 - 11 | 6 - 4 | 8 - 8 | 11 - 5 | 14 - 4 |
| | SPF | No.2 | 4 - 7 | 7 - 5 | 10 - 3 | 13 - 10 | 17 - 6 | 4 - 3 | 6 - 10 | 9 - 5 | 12 - 6 | 15 - 10 | 3 - 11 | 6 - 4 | 8 - 8 | 11 - 5 | 14 - 4 |
| | SPF | No.3 | 3 - 4 | 5 - 2 | 7 - 0 | 9 - 2 | 11 - 4 | 3 - 2 | 4 - 9 | 6 - 5 | 8 - 5 | 10 - 4 | 2 - 11 | 4 - 5 | 6 - 0 | 7 - 9 | 9 - 6 |
| 24 | DFL | SS | 4 - 9 | 8 - 0 | 11 - 3 | 15 - 6 | 19 - 5 | 4 - 6 | 7 - 7 | 10 - 8 | 14 - 7 | 18 - 7 | 4 - 3 | 7 - 3 | 10 - 2 | 13 - 10 | 17 - 10 |
| | DFL | No.1 | 4 - 4 | 7 - 0 | 9 - 8 | 12 - 11 | 16 - 4 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 9 | 14 - 8 | 3 - 9 | 6 - 0 | 8 - 2 | 10 - 9 | 13 - 4 |
| | DFL | No.2 | 4 - 1 | 6 - 7 | 9 - 0 | 11 - 11 | 15 - 0 | 3 - 9 | 6 - 0 | 8 - 3 | 10 - 10 | 13 - 6 | 3 - 6 | 5 - 7 | 7 - 7 | 10 - 0 | 12 - 4 |
| | DFL | No.3 | 3 - 1 | 4 - 8 | 6 - 3 | 8 - 2 | 10 - 0 | 2 - 10 | 4 - 3 | 5 - 9 | 7 - 6 | 9 - 2 | 2 - 8 | 4 - 0 | 5 - 4 | 6 - 11 | 8 - 5 |
| | HF | SS | 4 - 5 | 7 - 6 | 10 - 6 | 14 - 4 | 18 - 4 | 4 - 2 | 7 - 1 | 9 - 11 | 13 - 7 | 17 - 7 | 4 - 0 | 6 - 9 | 9 - 6 | 12 - 10 | 16 - 8 |
| | HF | No.1 | 4 - 3 | 6 - 11 | 9 - 6 | 12 - 8 | 16 - 0 | 3 - 11 | 6 - 4 | 8 - 8 | 11 - 6 | 14 - 5 | 3 - 8 | 5 - 10 | 8 - 0 | 10 - 7 | 13 - 1 |
| | HF | No.2 | 3 - 11 | 6 - 4 | 8 - 8 | 11 - 5 | 14 - 4 | 3 - 8 | 5 - 10 | 7 - 11 | 10 - 5 | 12 - 11 | 3 - 5 | 5 - 4 | 7 - 4 | 9 - 7 | 11 - 10 |
| | HF | No.3 | 3 - 0 | 4 - 6 | 6 - 1 | 7 - 11 | 9 - 8 | 2 - 10 | 4 - 2 | 5 - 7 | 7 - 3 | 8 - 10 | 2 - 8 | 3 - 10 | 5 - 2 | 6 - 8 | 8 - 2 |
| | SP | SS | 4 - 7 | 7 - 10 | 11 - 0 | 15 - 1 | 19 - 1 | 4 - 5 | 7 - 5 | 10 - 5 | 14 - 3 | 18 - 3 | 4 - 2 | 7 - 1 | 9 - 11 | 13 - 6 | 17 - 6 |
| | SP | No.1 | 4 - 4 | 7 - 2 | 9 - 11 | 12 - 6 | 16 - 4 | 4 - 0 | 6 - 7 | 9 - 1 | 11 - 4 | 14 - 8 | 3 - 9 | 6 - 1 | 8 - 4 | 10 - 5 | 13 - 4 |
| | SP | No.2 | 3 - 7 | 5 - 11 | 8 - 1 | 10 - 3 | 13 - 0 | 3 - 5 | 5 - 5 | 7 - 5 | 9 - 4 | 11 - 10 | 3 - 2 | 5 - 1 | 6 - 10 | 8 - 7 | 10 - 10 |
| | SP | No.3 | 2 - 9 | 4 - 2 | 5 - 7 | 7 - 2 | 9 - 0 | 2 - 7 | 3 - 10 | 5 - 2 | 6 - 7 | 8 - 3 | 2 - 5 | 3 - 8 | 4 - 9 | 6 - 1 | 7 - 7 |
| | SPF | SS | 4 - 4 | 7 - 4 | 10 - 3 | 13 - 11 | 17 - 11 | 4 - 1 | 6 - 11 | 9 - 8 | 13 - 2 | 17 - 1 | 3 - 11 | 6 - 7 | 9 - 3 | 12 - 6 | 16 - 0 |
| | SPF | No.1 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 8 | 14 - 8 | 3 - 9 | 5 - 11 | 8 - 1 | 10 - 8 | 13 - 3 | 3 - 6 | 5 - 6 | 7 - 5 | 9 - 9 | 12 - 1 |
| | SPF | No.2 | 4 - 0 | 6 - 5 | 8 - 10 | 11 - 8 | 14 - 8 | 3 - 9 | 5 - 11 | 8 - 1 | 10 - 8 | 13 - 3 | 3 - 6 | 5 - 6 | 7 - 5 | 9 - 9 | 12 - 1 |
| | SPF | No.3 | 3 - 0 | 4 - 6 | 6 - 1 | 7 - 11 | 9 - 8 | 2 - 10 | 4 - 2 | 5 - 7 | 7 - 3 | 8 - 10 | 2 - 8 | 3 - 10 | 5 - 2 | 6 - 8 | 8 - 2 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Table 3.26M (Cont.) Rafter Deflection Limit = L/180

Maximum Rafter Spans for Common Lumber Species Resisting Uplift Loads due to Wind (12:12 Slope)

# Exposure C

| Wind Speed 3-second gust (mph) | | | 180 | | | | | 195 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rafter Spacing (in.) | Species | Grade | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Allowable Rafter Span (ft-in.)[1] | | | | | | | | | |
| 12 | DFL | SS | 5 - 4 | 9 - 2 | 13 - 0 | 17 - 10 | 21 - 8 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 8 | 20 - 6 |
| | DFL | No.1 | 5 - 1 | 8 - 9 | 12 - 3 | 16 - 9 | 19 - 9 | 4 - 10 | 7 - 10 | 10 - 11 | 14 - 8 | 18 - 2 |
| | DFL | No.2 | 5 - 0 | 8 - 2 | 11 - 4 | 15 - 4 | 18 - 8 | 4 - 6 | 7 - 4 | 10 - 1 | 13 - 7 | 17 - 3 |
| | DFL | No.3 | 3 - 7 | 5 - 9 | 7 - 9 | 10 - 3 | 12 - 9 | 3 - 4 | 5 - 2 | 7 - 0 | 9 - 2 | 11 - 4 |
| | HF | SS | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 7 | 20 - 5 | 4 - 8 | 8 - 0 | 11 - 3 | 15 - 5 | 19 - 5 |
| | HF | No.1 | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 2 | 19 - 6 | 4 - 7 | 7 - 9 | 10 - 8 | 14 - 5 | 18 - 0 |
| | HF | No.2 | 4 - 7 | 7 - 10 | 10 - 10 | 14 - 8 | 18 - 2 | 4 - 4 | 7 - 1 | 9 - 8 | 13 - 0 | 16 - 5 |
| | HF | No.3 | 3 - 6 | 5 - 6 | 7 - 6 | 9 - 11 | 12 - 3 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 10 | 10 - 11 |
| | SP | SS | 5 - 3 | 9 - 0 | 12 - 8 | 17 - 6 | 21 - 3 | 4 - 11 | 8 - 5 | 11 - 10 | 16 - 3 | 20 - 2 |
| | SP | No.1 | 5 - 0 | 8 - 7 | 12 - 1 | 16 - 2 | 19 - 9 | 4 - 8 | 8 - 0 | 11 - 2 | 14 - 2 | 18 - 2 |
| | SP | No.2 | 4 - 4 | 7 - 4 | 10 - 2 | 13 - 0 | 16 - 11 | 3 - 11 | 6 - 7 | 9 - 1 | 11 - 7 | 14 - 10 |
| | SP | No.3 | 3 - 3 | 5 - 2 | 6 - 11 | 8 - 11 | 11 - 4 | 3 - 0 | 4 - 8 | 6 - 3 | 8 - 0 | 10 - 1 |
| | SPF | SS | 4 - 11 | 8 - 4 | 11 - 9 | 16 - 2 | 20 - 0 | 4 - 7 | 7 - 10 | 10 - 11 | 15 - 0 | 19 - 0 |
| | SPF | No.1 | 4 - 9 | 8 - 0 | 11 - 1 | 15 - 0 | 18 - 5 | 4 - 5 | 7 - 2 | 9 - 11 | 13 - 3 | 16 - 10 |
| | SPF | No.2 | 4 - 9 | 8 - 0 | 11 - 1 | 15 - 0 | 18 - 5 | 4 - 5 | 7 - 2 | 9 - 11 | 13 - 3 | 16 - 10 |
| | SPF | No.3 | 3 - 6 | 5 - 6 | 7 - 6 | 9 - 11 | 12 - 3 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 10 | 10 - 11 |
| 16 | DFL | SS | 4 - 9 | 8 - 2 | 11 - 6 | 15 - 9 | 19 - 8 | 4 - 6 | 7 - 8 | 10 - 9 | 14 - 8 | 18 - 8 |
| | DFL | No.1 | 4 - 5 | 7 - 2 | 9 - 11 | 13 - 4 | 16 - 11 | 4 - 0 | 6 - 6 | 8 - 11 | 11 - 10 | 14 - 10 |
| | DFL | No.2 | 4 - 2 | 6 - 9 | 9 - 3 | 12 - 4 | 15 - 6 | 3 - 9 | 6 - 1 | 8 - 3 | 10 - 11 | 13 - 8 |
| | DFL | No.3 | 3 - 2 | 4 - 9 | 6 - 5 | 8 - 5 | 10 - 4 | 2 - 11 | 4 - 4 | 5 - 10 | 7 - 6 | 9 - 3 |
| | HF | SS | 4 - 6 | 7 - 7 | 10 - 8 | 14 - 7 | 18 - 7 | 4 - 3 | 7 - 2 | 10 - 0 | 13 - 7 | 17 - 7 |
| | HF | No.1 | 4 - 4 | 7 - 1 | 9 - 9 | 13 - 1 | 16 - 6 | 3 - 11 | 6 - 5 | 8 - 9 | 11 - 7 | 14 - 6 |
| | HF | No.2 | 4 - 0 | 6 - 6 | 8 - 11 | 11 - 9 | 14 - 9 | 3 - 8 | 5 - 10 | 8 - 0 | 10 - 6 | 13 - 1 |
| | HF | No.3 | 3 - 1 | 4 - 7 | 6 - 3 | 8 - 1 | 10 - 0 | 2 - 10 | 4 - 2 | 5 - 8 | 7 - 4 | 8 - 11 |
| | SP | SS | 4 - 8 | 8 - 0 | 11 - 2 | 15 - 5 | 19 - 4 | 4 - 5 | 7 - 6 | 10 - 6 | 14 - 4 | 18 - 4 |
| | SP | No.1 | 4 - 5 | 7 - 5 | 10 - 3 | 12 - 10 | 16 - 11 | 4 - 0 | 6 - 8 | 9 - 2 | 11 - 5 | 14 - 10 |
| | SP | No.2 | 3 - 8 | 6 - 1 | 8 - 4 | 10 - 6 | 13 - 5 | 3 - 5 | 5 - 6 | 7 - 6 | 9 - 5 | 11 - 11 |
| | SP | No.3 | 2 - 10 | 4 - 3 | 5 - 9 | 7 - 4 | 9 - 3 | 2 - 7 | 3 - 11 | 5 - 2 | 6 - 8 | 8 - 4 |
| | SPF | SS | 4 - 4 | 7 - 5 | 10 - 5 | 14 - 2 | 18 - 2 | 4 - 1 | 6 - 11 | 9 - 9 | 13 - 3 | 17 - 2 |
| | SPF | No.1 | 4 - 1 | 6 - 7 | 9 - 1 | 12 - 0 | 15 - 2 | 3 - 9 | 5 - 11 | 8 - 1 | 10 - 9 | 13 - 4 |
| | SPF | No.2 | 4 - 1 | 6 - 7 | 9 - 1 | 12 - 0 | 15 - 2 | 3 - 9 | 5 - 11 | 8 - 1 | 10 - 9 | 13 - 4 |
| | SPF | No.3 | 3 - 1 | 4 - 7 | 6 - 3 | 8 - 1 | 10 - 0 | 2 - 10 | 4 - 2 | 5 - 8 | 7 - 4 | 8 - 11 |
| 19.2 | DFL | SS | 4 - 6 | 7 - 7 | 10 - 7 | 14 - 6 | 18 - 6 | 4 - 2 | 7 - 1 | 9 - 11 | 13 - 6 | 17 - 7 |
| | DFL | No.1 | 3 - 11 | 6 - 5 | 8 - 9 | 11 - 7 | 14 - 7 | 3 - 8 | 5 - 9 | 7 - 10 | 10 - 4 | 12 - 10 |
| | DFL | No.2 | 3 - 9 | 6 - 0 | 8 - 2 | 10 - 9 | 13 - 5 | 3 - 5 | 5 - 5 | 7 - 4 | 9 - 7 | 11 - 11 |
| | DFL | No.3 | 2 - 10 | 4 - 3 | 5 - 9 | 7 - 5 | 9 - 1 | 2 - 8 | 3 - 10 | 5 - 2 | 6 - 8 | 8 - 2 |
| | HF | SS | 4 - 2 | 7 - 1 | 9 - 11 | 13 - 6 | 17 - 6 | 3 - 11 | 6 - 8 | 9 - 3 | 12 - 7 | 16 - 3 |
| | HF | No.1 | 3 - 11 | 6 - 3 | 8 - 7 | 11 - 5 | 14 - 3 | 3 - 7 | 5 - 8 | 7 - 9 | 10 - 2 | 12 - 7 |
| | HF | No.2 | 3 - 8 | 5 - 9 | 7 - 10 | 10 - 4 | 12 - 10 | 3 - 4 | 5 - 2 | 7 - 1 | 9 - 3 | 11 - 5 |
| | HF | No.3 | 2 - 9 | 4 - 2 | 5 - 7 | 7 - 2 | 8 - 9 | 2 - 7 | 3 - 9 | 5 - 0 | 6 - 6 | 7 - 11 |
| | SP | SS | 4 - 4 | 7 - 5 | 10 - 5 | 14 - 2 | 18 - 2 | 4 - 1 | 6 - 11 | 9 - 9 | 13 - 3 | 17 - 2 |
| | SP | No.1 | 3 - 11 | 6 - 7 | 9 - 0 | 11 - 3 | 14 - 7 | 3 - 8 | 5 - 11 | 8 - 1 | 10 - 0 | 12 - 10 |
| | SP | No.2 | 3 - 4 | 5 - 5 | 7 - 4 | 9 - 3 | 11 - 8 | 3 - 1 | 4 - 11 | 6 - 7 | 8 - 4 | 10 - 5 |
| | SP | No.3 | 2 - 7 | 3 - 10 | 5 - 1 | 6 - 6 | 8 - 2 | 2 - 5 | 3 - 6 | 4 - 7 | 5 - 11 | 7 - 4 |
| | SPF | SS | 4 - 1 | 6 - 11 | 9 - 8 | 13 - 1 | 17 - 0 | 3 - 10 | 6 - 6 | 9 - 0 | 12 - 2 | 15 - 4 |
| | SPF | No.1 | 3 - 8 | 5 - 10 | 8 - 0 | 10 - 7 | 13 - 1 | 3 - 5 | 5 - 4 | 7 - 2 | 9 - 5 | 11 - 8 |
| | SPF | No.2 | 3 - 8 | 5 - 10 | 8 - 0 | 10 - 7 | 13 - 1 | 3 - 5 | 5 - 4 | 7 - 2 | 9 - 5 | 11 - 8 |
| | SPF | No.3 | 2 - 9 | 4 - 2 | 5 - 7 | 7 - 2 | 8 - 9 | 2 - 7 | 3 - 9 | 5 - 0 | 6 - 6 | 7 - 11 |
| 24 | DFL | SS | 4 - 1 | 6 - 11 | 9 - 8 | 13 - 2 | 16 - 11 | 3 - 10 | 6 - 6 | 8 - 11 | 11 - 10 | 14 - 10 |
| | DFL | No.1 | 3 - 6 | 5 - 6 | 7 - 6 | 9 - 11 | 12 - 3 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 10 | 10 - 11 |
| | DFL | No.2 | 3 - 4 | 5 - 2 | 7 - 0 | 9 - 2 | 11 - 4 | 3 - 1 | 4 - 8 | 6 - 4 | 8 - 3 | 10 - 1 |
| | DFL | No.3 | 2 - 7 | 3 - 9 | 5 - 0 | 6 - 5 | 7 - 10 | 2 - 4 | 3 - 5 | 4 - 6 | 5 - 9 | 7 - 0 |
| | HF | SS | 3 - 10 | 6 - 6 | 9 - 0 | 12 - 3 | 15 - 10 | 3 - 8 | 6 - 1 | 8 - 6 | 11 - 3 | 14 - 0 |
| | HF | No.1 | 3 - 6 | 5 - 5 | 7 - 5 | 9 - 9 | 12 - 0 | 3 - 3 | 4 - 11 | 6 - 8 | 8 - 8 | 10 - 9 |
| | HF | No.2 | 3 - 3 | 5 - 0 | 6 - 9 | 8 - 10 | 10 - 11 | 3 - 0 | 4 - 6 | 6 - 1 | 7 - 11 | 9 - 9 |
| | HF | No.3 | 2 - 6 | 3 - 8 | 4 - 10 | 6 - 3 | 7 - 7 | 2 - 4 | 3 - 4 | 4 - 4 | 5 - 7 | 6 - 10 |
| | SP | SS | 4 - 0 | 6 - 9 | 9 - 6 | 12 - 10 | 16 - 8 | 3 - 9 | 6 - 4 | 8 - 10 | 12 - 0 | 15 - 6 |
| | SP | No.1 | 3 - 6 | 5 - 8 | 7 - 9 | 9 - 7 | 12 - 3 | 3 - 3 | 5 - 2 | 7 - 0 | 8 - 7 | 10 - 11 |
| | SP | No.2 | 3 - 0 | 4 - 8 | 6 - 4 | 7 - 11 | 10 - 0 | 2 - 9 | 4 - 3 | 5 - 9 | 7 - 2 | 8 - 11 |
| | SP | No.3 | 2 - 4 | 3 - 5 | 4 - 5 | 5 - 8 | 7 - 1 | 2 - 2 | 3 - 2 | 4 - 0 | 5 - 1 | 6 - 4 |
| | SPF | SS | 3 - 9 | 6 - 4 | 8 - 9 | 11 - 7 | 14 - 7 | 3 - 7 | 5 - 9 | 7 - 10 | 10 - 4 | 12 - 10 |
| | SPF | No.1 | 3 - 4 | 5 - 1 | 6 - 11 | 9 - 0 | 11 - 1 | 3 - 1 | 4 - 7 | 6 - 3 | 8 - 1 | 9 - 11 |
| | SPF | No.2 | 3 - 4 | 5 - 1 | 6 - 11 | 9 - 0 | 11 - 1 | 3 - 1 | 4 - 7 | 6 - 3 | 8 - 1 | 9 - 11 |
| | SPF | No.3 | 2 - 6 | 3 - 8 | 4 - 10 | 6 - 3 | 7 - 7 | 2 - 4 | 3 - 4 | 4 - 4 | 5 - 7 | 6 - 10 |

[1] See Table 3.26M footnotes.

† Spans are limited to 26 feet in length.

## Footnotes to Table 3.26M

[1] Tabulated rafter spans (horizontal projection) in Table 3.26M are based on a 12:12 roof pitch and L/180 deflection limit. For other roof pitches and deflection criteria, multiply tabulated values by the following adjustments.

| Deflection Limit | Roof Pitch | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.5:12 | 2:12 | 3:12 | 4:12 | 5:12 | 6:12 | 7:12 | 8:12 | 9:12 | 10:12 | 11:12 | 12:12 |
| L/180 | 1.08 | 1.07 | 1.06 | 1.03 | 1.12 | 1.09 | 1.22 | 1.18 | 1.13 | 1.09 | 1.04 | 1.00 |
| L/240 | 1.07 | 1.06 | 1.04 | 1.02 | 1.07 | 1.04 | 1.07 | 1.04 | 1.00 | 0.96 | 0.92 | 0.88 |
| L/360 | 0.91 | 0.91 | 0.89 | 0.87 | 0.94 | 0.91 | 0.89 | 0.86 | 0.83 | 0.79 | 0.76 | 0.73 |

## Table 3.27 Representative Metal Plate Connected Wood Roof Truss Spans

Actual Design Spans Shall Be Obtained from the Truss Manufacturer

(Top Chord Live Load = 20 psf; Top Chord Dead Load = 10 psf; Bottom Chord Dead Load = 10 psf)

| | | Queen Post | | Fink | | Scissors | |
|---|---|---|---|---|---|---|---|
| | | 2x4 | 2x6 | 2x4 | 2x6 | 2x4 | 2x6 |
| | | Representative Roof Truss Spans for 24" o.c. Spacing | | | | | |
| Roof Pitch | Species and Grade | (ft- in.) | (ft- in.) | (ft- in.) | (ft- in.) | (ft- in.) | (ft- in.) |
| 3:12 | Douglas Fir-Larch SS | (22-4) 22-4 | (29-0) 29-0 | (30-5) 30-10 | (36-0) 36-0 | (24-8) 25-1 | (36-0) 36-0 |
| | Douglas Fir-Larch #1 | (19-0) 19-0 | (27-0) 27-0 | (27-10) 28-3 | (36-0) 36-0 | (21-9) 23-2 | (29-3) 32-9 |
| | Douglas Fir-Larch #2 | (17-3) 17-3 | (26-0) 26-0 | (25-7) 25-7 | (36-0) 36-0 | (19-3) 20-9 | (26-0) 28-6 |
| | Hem-Fir SS | (20-8) 20-8 | (26-8) 26-8 | (29-1) 29-6 | (36-0) 36-0 | (23-4) 23-10 | (35-0) 35-8 |
| | Hem-Fir #1 | (18-1) 18-1 | (25-5) 25-5 | (26-10) 26-10 | (36-0) 36-0 | (19-10) 21-5 | (27-4) 29-6 |
| | Hem-Fir #2 | (16-6) 16-6 | (23-8) 23-8 | (24-5) 24-5 | (35-2) 35-2 | (16-10) 18-2 | (23-6) 25-4 |
| | Southern Pine SS | (22-4) 22-4 | (29-0) 29-0 | (30-5) 30-10 | (36-0) 36-0 | (24-8) 25-1 | (36-0) 36-0 |
| | Southern Pine #1 | (20-8) 20-8 | (27-5) 27-5 | (28-11) 29-5 | (36-0) 36-0 | (23-0) 24-0 | (31-7) 34-1 |
| | Southern Pine #2 | (18-9) 18-9 | (26-3) 26-3 | (27-1) 27-10 | (36-0) 36-0 | (18-6) 19-11 | (25-11) 27-11 |
| | Spruce-Pine-Fir SS | (19-9) 19-9 | (25-10) 25-10 | (28-2) 28-7 | (36-0) 36-0 | (22-1) 23-0 | (30-10) 33-3 |
| | Spruce-Pine-Fir #1 | (16-10) 16-10 | (24-6) 24-6 | (23-4) 24-10 | (32-7) 34-8 | (16-3) 17-6 | (21-0) 23-9 |
| | Spruce-Pine-Fir #2 | (16-10) 16-10 | (24-6) 24-6 | (23-4) 24-10 | (32-7) 34-8 | (14-11) 16-1 | (20-6) 22-0 |
| 4:12 | Douglas Fir-Larch SS | (22-4) 22-4 | (29-0) 29-0 | (33-2) 33-2 | (36-0) 36-0 | (28-3) 28-9 | (36-0) 36-0 |
| | Douglas Fir-Larch #1 | (19-0) 19-0 | (27-0) 27-0 | (28-3) 28-3 | (36-0) 36-0 | (26-0) 26-7 | (36-0) 36-0 |
| | Douglas Fir-Larch #2 | (17-3) 17-3 | (26-0) 26-0 | (25-7) 25-7 | (36-0) 36-0 | (24-2) 25-5 | (32-6) 35-9 |
| | Hem-Fir SS | (20-8) 20-8 | (26-8) 26-8 | (30-9) 30-9 | (36-0) 36-0 | (26-10) 27-4 | (36-0) 36-0 |
| | Hem-Fir #1 | (18-1) 18-1 | (25-5) 25-5 | (26-10) 26-10 | (36-0) 36-0 | (24-10) 25-5 | (34-4) 36-0 |
| | Hem-Fir #2 | (16-6) 16-6 | (23-8) 23-8 | (24-5) 24-5 | (35-2) 35-2 | (21-3) 22-11 | (29-5) 31-9 |
| | Southern Pine SS | (22-4) 22-4 | (29-0) 29-0 | (33-2) 33-2 | (36-0) 36-0 | (28-3) 28-9 | (36-0) 36-0 |
| | Southern Pine #1 | (20-8) 20-8 | (27-5) 27-5 | (30-8) 30-8 | (36-0) 36-0 | (27-0) 27-6 | (36-0) 36-0 |
| | Southern Pine #2 | (18-9) 18-9 | (26-3) 26-3 | (27-10) 27-10 | (36-0) 36-0 | (23-4) 25-2 | (32-6) 35-1 |
| | Spruce-Pine-Fir SS | (19-9) 19-9 | (25-10) 25-10 | (29-4) 29-4 | (36-0) 36-0 | (25-11) 26-5 | (36-0) 36-0 |
| | Spruce-Pine-Fir #1 | (16-10) 16-10 | (24-6) 24-6 | (25-0) 25-0 | (36-0) 36-0 | (18-10) 20-4 | (25-7) 27-7 |
| | Spruce-Pine-Fir #2 | (16-10) 16-10 | (24-6) 24-6 | (25-0) 25-0 | (36-0) 36-0 | (18-10) 20-4 | (25-7) 27-7 |
| 5:12 | Douglas Fir-Larch SS | (22-4) 22-4 | (29-0) 29-0 | (33-2) 33-2 | (36-0) 36-0 | (31-1) 31-7 | (36-0) 36-0 |
| | Douglas Fir-Larch #1 | (19-0) 19-0 | (27-0) 27-0 | (28-3) 28-3 | (36-0) 36-0 | (28-8) 29-3 | (36-0) 36-0 |
| | Douglas Fir-Larch #2 | (17-3) 17-3 | (26-0) 26-0 | (25-7) 25-7 | (36-0) 36-0 | (27-5) 28-0 | (36-0) 36-0 |
| | Hem-Fir SS | (20-8) 20-8 | (26-8) 26-8 | (30-9) 30-9 | (36-0) 36-0 | (29-7) 30-1 | (36-0) 36-0 |
| | Hem-Fir #1 | (18-1) 18-1 | (25-5) 25-5 | (26-10) 26-10 | (36-0) 36-0 | (27-6) 28-1 | (36-0) 36-0 |
| | Hem-Fir #2 | (16-6) 16-6 | (23-8) 23-8 | (24-5) 24-5 | (35-2) 35-2 | (25-3) 26-10 | (35-1) 36-0 |
| | Southern Pine SS | (22-4) 22-4 | (29-0) 29-0 | (33-2) 33-2 | (36-0) 36-0 | (31-1) 31-7 | (36-0) 36-0 |
| | Southern Pine #1 | (20-8) 20-8 | (27-5) 27-5 | (30-8) 30-8 | (36-0) 36-0 | (29-9) 30-2 | (36-0) 36-0 |
| | Southern Pine #2 | (18-9) 18-9 | (26-3) 26-3 | (27-10) 27-10 | (36-0) 36-0 | (27-8) 28-10 | (36-0) 36-0 |
| | Spruce-Pine-Fir SS | (19-9) 19-9 | (25-10) 25-10 | (29-4) 29-4 | (36-0) 36-0 | (28-7) 29-1 | (36-0) 36-0 |
| | Spruce-Pine-Fir #1 | (16-10) 16-10 | (24-6) 24-6 | (25-0) 25-0 | (36-0) 36-0 | (22-6) 24-3 | (30-6) 33-0 |
| | Spruce-Pine-Fir #2 | (16-10) 16-10 | (24-6) 24-6 | (25-0) 25-0 | (36-0) 36-0 | (22-6) 24-3 | (30-6) 33-0 |

GENERAL NOTES

- This table provides examples for the parameters shown and is intended to be used for actual design purposes. Spans have been determined in accordance with the 2007 edition of the Truss Plate Institute's *National Design Standard for Metal Plate Connected Wood Truss Construction, ANSI/TPI 1-07*, and the 2009 *International Residential Code® (IRC®)*. Truss spans based on different loads, lumber species and grades, truss depths and web configurations are possible. Roof spans greater than 36 feet are possible but are limited by the context of this manual. Contact a truss manufacturer for actual roof truss designs and solutions to each specific application.
- This table applies only to wood roof trusses that are shop-built and designed and manufactured in accordance with ANSI/TPI 1.
- The spans apply to roof trusses used in enclosed structures or where the moisture content in use does not exceed 19 percent for an extended period of time.
- Representative spans for the scissors trusses assume the bottom chord pitch is one half the top chord pitch.
- Spans in parentheses are for ground snow loads equal to 30 psf that have been reduced to a flat roof snow load of 23.1 psf per the provisions of ASCE 7-05 for a Category II building, with and Exposure factor, $C_e$ = 1.0 and a Thermal Factor, $C_t$ = 1.1. Unbalanced snow loads have also been considered. Spans not in parentheses are for uniform roof live loads equal to 20 psf. Unbalanced roof live loads have also been considered. These trusses have also been designed for a 10 psf bottom chord live load applied non-concurrently with any other live loads. Wind loads have not been considered.

## Table 3.28 Hip and Valley Beam Sizes

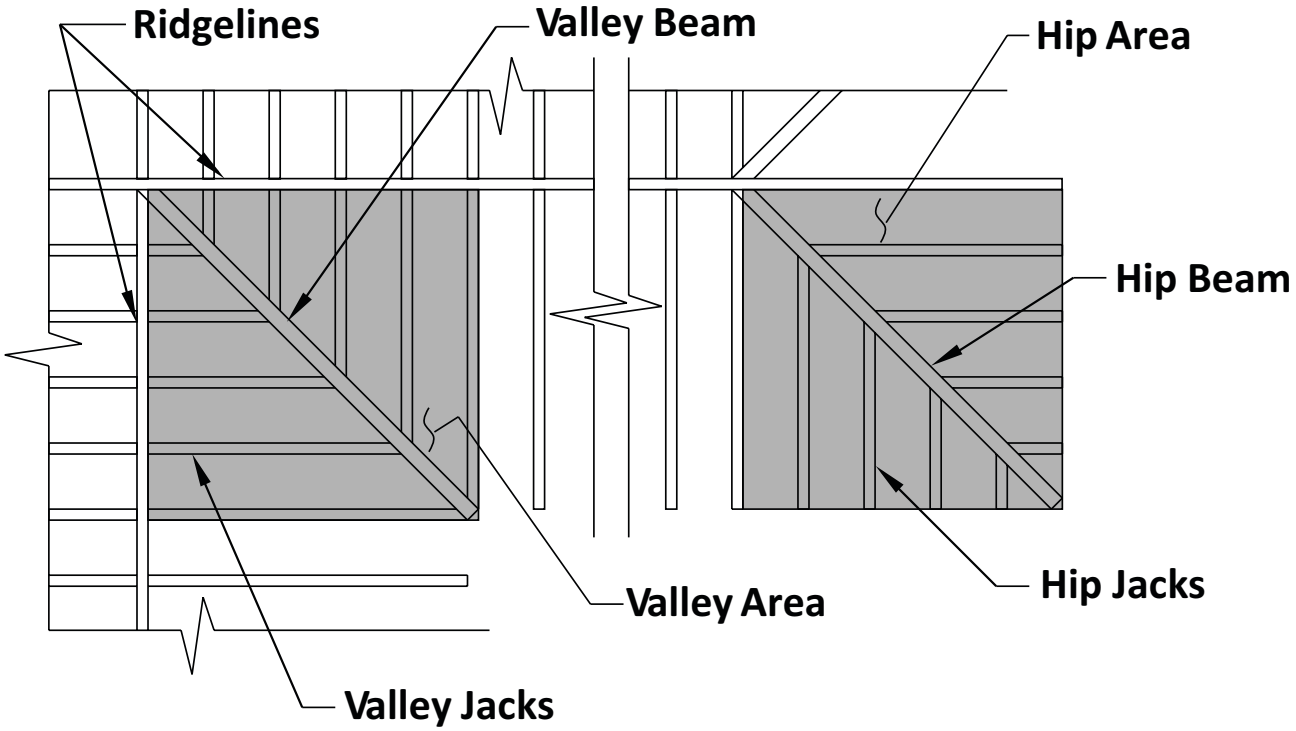
$L/\Delta_{LL} = 180$

| | | Roof Live Load | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | 30 psf | | 50 psf | | 70 psf | |
| | | Roof Dead Load | | | | | | | |
| Hip or Valley Beam | | 10 psf | 20 psf | 10 psf | 20 psf | 10 psf | 20 psf | 10 psf | 20 psf |
| Horizontal Span (ft - in.) | Hip or Valley Area (ft x ft) | Hip and Valley Beam Size[2,3] | | | | | | | |
| 5-8 | 4'x 4' | 1-2x6 | 1-2x6 | 1-2x6 | 1-2x6 | 1-2x6 | 1-2x6 | 1-2x6 | 1-2x6 |
| 8-6 | 6'x 6' | 1-2x6 | 1-2x6 | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x6 | 2-2x6 | 2-2x6 |
| 11-4 | 8'x 8' | 2-2x6 | 2-2x8 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x10 |
| 14-2 | 10'x 10' | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 | 3-2x12 | 3-2x12 |
| 17-0 | 12'x 12' | 2-2x12 | 3-2x10 | 3-2x10 | 3-2x12 | 4-2x12 | 4-2x12 | - | - |
| 19-10 | 14'x 14' | 3-2x12 | 4-2x12 | 4-2x12 | - | - | - | - | - |
| 22-8 | 16'x 16' | 4-2x12 | - | - | - | - | - | - | - |

1 Tabulated sizes are calculated using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22 and assume a thermal factor, $C_t$=1.2. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

2 Tabulated sizes are based on the lowest $F_b$ and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern PIne, and Spruce-Pine-Fir.

3 Tabulated sizes are checked for live load deflection only.



## Table 3.29 Ridge Beam Spans

Dead Load Assumptions: Roof/Ceiling Assembly = 20 psf, $L/\Delta_{LL}$ = 240

| | | Roof Live Load | | | ASD Ground Snow Load[1], $p_{g(ASD)}$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 20 psf | | | 30 psf | | | 50 psf | | | 70 psf | | |
| | | Building Width (ft) | | | | | | | | | | | |
| | | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 | 12 | 24 | 36 |
| Ridge Beam Supporting | Size | Maximum Ridge Beam Spans (ft-in.) for Common Lumber Species[2,4] | | | | | | | | | | | |
| Roof and Ceiling (attached to rafters)  | 1-2x6 | 5 - 1 | 3 - 7 | 3 - 0 | 4 - 7 | 3 - 3 | 2 - 8 | 3 - 11 | 2 - 9 | 2 - 3 | 3 - 6 | 2 - 6 | 2 - 0 |
| | 1-2x8 | 6 - 6 | 4 - 7 | 3 - 9 | 5 - 10 | 4 - 2 | 3 - 5 | 5 - 0 | 3 - 6 | 2 - 11 | 4 - 5 | 3 - 2 | 2 - 7 |
| | 1-2x10 | 7 - 9 | 5 - 5 | 4 - 5 | 6 - 11 | 4 - 11 | 4 - 0 | 5 - 11 | 4 - 2 | 3 - 5 | 5 - 3 | 3 - 9 | 3 - 0 |
| | 1-2x12 | 9 - 1 | 6 - 5 | 5 - 3 | 8 - 2 | 5 - 9 | 4 - 9 | 7 - 0 | 4 - 11 | 4 - 0 | 6 - 2 | 4 - 5 | 3 - 7 |
| | 2-2x4 | 5 - 1 | 3 - 7 | 2 - 11 | 4 - 7 | 3 - 3 | 2 - 8 | 3 - 11 | 2 - 9 | 2 - 3 | 3 - 6 | 2 - 5 | 2 - 0 |
| | 2-2x6 | 7 - 7 | 5 - 4 | 4 - 5 | 6 - 10 | 4 - 10 | 4 - 0 | 5 - 10 | 4 - 2 | 3 - 5 | 5 - 2 | 3 - 8 | 3 - 0 |
| | 2-2x8 | 9 - 8 | 6 - 10 | 5 - 7 | 8 - 8 | 6 - 2 | 5 - 0 | 7 - 5 | 5 - 3 | 4 - 3 | 6 - 7 | 4 - 8 | 3 - 10 |
| | 2-2x10 | 11 - 5 | 8 - 1 | 6 - 7 | 10 - 4 | 7 - 4 | 5 - 11 | 8 - 10 | 6 - 3 | 5 - 1 | 7 - 10 | 5 - 6 | 4 - 6 |
| | 2-2x12 | 13 - 6 | 9 - 6 | 7 - 9 | 12 - 2 | 8 - 7 | 7 - 0 | 10 - 4 | 7 - 4 | 6 - 0 | 9 - 2 | 6 - 6 | 5 - 4 |
| | 3-2x8 | 12 - 1 | 8 - 6 | 7 - 0 | 10 - 11 | 7 - 8 | 6 - 3 | 9 - 4 | 6 - 7 | 5 - 4 | 8 - 3 | 5 - 10 | 4 - 9 |
| | 3-2x10 | 14 - 4 | 10 - 1 | 8 - 3 | 12 - 11 | 9 - 2 | 7 - 6 | 11 - 0 | 7 - 10 | 6 - 4 | 9 - 9 | 6 - 11 | 5 - 8 |
| | 3-2x12 | 16 - 10 | 11 - 11 | 9 - 9 | 15 - 3 | 10 - 9 | 8 - 9 | 13 - 0 | 9 - 2 | 7 - 6 | 11 - 6 | 8 - 2 | 6 - 8 |
| | 4-2x8 | 13 - 11 | 9 - 10 | 8 - 1 | 12 - 7 | 8 - 11 | 7 - 3 | 10 - 9 | 7 - 7 | 6 - 2 | 9 - 6 | 6 - 9 | 5 - 6 |
| | 4-2x10 | 16 - 6 | 11 - 8 | 9 - 7 | 14 - 11 | 10 - 7 | 8 - 7 | 12 - 9 | 9 - 0 | 7 - 4 | 11 - 4 | 8 - 0 | 6 - 6 |
| | 4-2x12 | 19 - 6 | 13 - 9 | 11 - 3 | 17 - 7 | 12 - 5 | 10 - 2 | 15 - 0 | 10 - 7 | 8 - 8 | 13 - 4 | 9 - 5 | 7 - 8 |
| | Size | Maximum Ridge Beam Spans (ft-in.) for Glued Laminated Timber Beams[3,4] | | | | | | | | | | | |
| | 3.125x5.500 | 10 - 6 | 7 - 5 | 6 - 0 | 9 - 5 | 6 - 8 | 5 - 5 | 8 - 1 | 5 - 8 | 4 - 8 | 7 - 2 | 5 - 1 | 4 - 2 |
| | 3.125x6.875 | 13 - 1 | 9 - 3 | 7 - 7 | 11 - 10 | 8 - 4 | 6 - 10 | 10 - 1 | 7 - 1 | 5 - 10 | 8 - 11 | 6 - 4 | 5 - 2 |
| | 3.125x8.250 | 15 - 8 | 11 - 1 | 9 - 1 | 14 - 2 | 10 - 0 | 8 - 2 | 12 - 1 | 8 - 7 | 7 - 0 | 10 - 9 | 7 - 7 | 6 - 2 |
| | 3.125x9.625 | 18 - 4 | 12 - 11 | 10 - 7 | 16 - 6 | 11 - 8 | 9 - 6 | 14 - 1 | 10 - 0 | 8 - 2 | 12 - 6 | 8 - 10 | 7 - 3 |
| | 3.125x11.000 | 20 - 11 | 14 - 10 | 12 - 1 | 18 - 11 | 13 - 4 | 10 - 11 | 16 - 1 | 11 - 5 | 9 - 4 | 14 - 4 | 10 - 1 | 8 - 3 |
| | 3.125x12.375 | 23 - 6 | 16 - 8 | 13 - 7 | 21 - 3 | 15 - 0 | 12 - 3 | 18 - 2 | 12 - 10 | 10 - 6 | 16 - 1 | 11 - 4 | 9 - 3 |
| | 3.125x13.750 | 26 - 2 | 18 - 6 | 15 - 1 | 23 - 7 | 16 - 8 | 13 - 7 | 20 - 2 | 14 - 3 | 11 - 8 | 17 - 10 | 12 - 8 | 10 - 4 |
| | 3.125x15.125 | 28 - 8 | 20 - 4 | 16 - 7 | 25 - 11 | 18 - 4 | 15 - 0 | 22 - 2 | 15 - 8 | 12 - 10 | 19 - 8 | 13 - 11 | 11 - 4 |
| | 3.125x16.500 | 31 - 1 | 22 - 2 | 18 - 1 | 28 - 1 | 20 - 0 | 16 - 4 | 24 - 2 | 17 - 1 | 13 - 11 | 21 - 5 | 15 - 2 | 12 - 5 |
| | 3.125x17.875 | 33 - 5 | 24 - 0 | 19 - 8 | 30 - 3 | 21 - 8 | 17 - 9 | 26 - 0 | 18 - 6 | 15 - 1 | 23 - 2 | 16 - 5 | 13 - 5 |
| | 3.125x19.250 | 35 - 8 | 25 - 8 | 21 - 2 | 32 - 4 | 23 - 3 | 19 - 1 | 27 - 10 | 19 - 11 | 16 - 3 | 24 - 10 | 17 - 8 | 14 - 5 |
| | 3.125x20.625 | 38 - 0 | 27 - 4 | 22 - 6 | 34 - 5 | 24 - 9 | 20 - 5 | 29 - 7 | 21 - 3 | 17 - 5 | 26 - 5 | 18 - 11 | 15 - 6 |
| | 3.125x22.000 | 40 - 3 | 28 - 11 | 23 - 10 | 36 - 6 | 26 - 3 | 21 - 7 | 31 - 4 | 22 - 7 | 18 - 7 | 28 - 0 | 20 - 1 | 16 - 6 |
| | 3.125x23.375 | 42 - 7 | 30 - 7 | 25 - 3 | 38 - 6 | 27 - 8 | 22 - 10 | 33 - 2 | 23 - 10 | 19 - 8 | 29 - 7 | 21 - 3 | 17 - 6 |
| | 3.125x24.750 | 44 - 10 | 32 - 2 | 26 - 7 | 40 - 7 | 29 - 2 | 24 - 1 | 34 - 11 | 25 - 1 | 20 - 8 | 31 - 2 | 22 - 5 | 18 - 5 |
| | 5.125x5.500 | 12 - 7 | 9 - 6 | 7 - 9 | 11 - 7 | 8 - 7 | 7 - 0 | 9 - 10 | 7 - 4 | 5 - 11 | 8 - 9 | 6 - 6 | 5 - 3 |
| | 5.125x6.875 | 15 - 8 | 11 - 10 | 9 - 8 | 14 - 6 | 10 - 8 | 8 - 9 | 12 - 3 | 9 - 1 | 7 - 5 | 10 - 11 | 8 - 1 | 6 - 7 |
| | 5.125x8.250 | 18 - 10 | 14 - 2 | 11 - 7 | 17 - 5 | 12 - 10 | 10 - 6 | 14 - 8 | 10 - 11 | 8 - 11 | 13 - 2 | 9 - 9 | 7 - 11 |
| | 5.125x9.625 | 21 - 11 | 16 - 7 | 13 - 6 | 20 - 4 | 14 - 11 | 12 - 3 | 17 - 2 | 12 - 9 | 10 - 5 | 15 - 4 | 11 - 4 | 9 - 3 |
| | 5.125x11.000 | 25 - 1 | 18 - 11 | 15 - 6 | 23 - 3 | 17 - 1 | 13 - 11 | 19 - 7 | 14 - 7 | 11 - 11 | 17 - 6 | 12 - 11 | 10 - 7 |
| | 5.125x12.375 | 28 - 3 | 21 - 3 | 17 - 5 | 26 - 2 | 19 - 3 | 15 - 8 | 22 - 0 | 16 - 5 | 13 - 5 | 19 - 8 | 14 - 7 | 11 - 11 |
| | 5.125x13.750 | 31 - 4 | 23 - 5 | 19 - 3 | 29 - 0 | 21 - 2 | 17 - 5 | 24 - 6 | 18 - 3 | 14 - 11 | 21 - 11 | 16 - 2 | 13 - 3 |
| | 5.125x15.125 | 34 - 6 | 25 - 6 | 21 - 0 | 31 - 11 | 23 - 1 | 19 - 0 | 26 - 11 | 19 - 10 | 16 - 5 | 24 - 1 | 17 - 9 | 14 - 6 |
| | 5.125x16.500 | 37 - 8 | 27 - 7 | 22 - 9 | 34 - 9 | 25 - 0 | 20 - 7 | 29 - 5 | 21 - 6 | 17 - 9 | 26 - 3 | 19 - 2 | 15 - 10 |
| | 5.125x17.875 | 40 - 9 | 29 - 8 | 24 - 5 | 37 - 4 | 26 - 10 | 22 - 2 | 31 - 10 | 23 - 1 | 19 - 1 | 28 - 5 | 20 - 7 | 17 - 0 |
| | 5.125x19.250 | 43 - 11 | 31 - 9 | 26 - 2 | 40 - 0 | 28 - 9 | 23 - 8 | 34 - 3 | 24 - 8 | 20 - 4 | 30 - 8 | 22 - 0 | 18 - 2 |
| | 5.125x20.625 | 47 - 0 | 33 - 9 | 27 - 10 | 42 - 6 | 30 - 7 | 25 - 2 | 36 - 7 | 26 - 4 | 21 - 8 | 32 - 8 | 23 - 5 | 19 - 4 |
| | 5.125x22.000 | 49 - 9 | 35 - 9 | 29 - 6 | 45 - 1 | 32 - 5 | 26 - 9 | 38 - 9 | 27 - 11 | 23 - 0 | 34 - 7 | 24 - 10 | 20 - 6 |
| | 5.125x23.375 | 52 - 7 | 37 - 10 | 31 - 2 | 47 - 8 | 34 - 3 | 28 - 3 | 41 - 0 | 29 - 5 | 24 - 3 | 36 - 7 | 26 - 3 | 21 - 8 |
| | 5.125x24.750 | 55 - 5 | 39 - 10 | 32 - 10 | 50 - 2 | 36 - 1 | 29 - 9 | 43 - 2 | 31 - 0 | 25 - 7 | 38 - 6 | 27 - 8 | 22 - 10 |

1 Tabulated spans are calculated using allowable stress design (ASD) ground snow loads, $p_{g(ASD)}$=30, 50, and 70 psf in ASCE 7-22 and assume a thermal factor, $C_t$=1.2. ASD ground snow loads, $p_{g(ASD)}$, are determined using ASCE 7-22 ground snow loads, $p_g$, as follows: $p_{g(ASD)}=0.7p_g$.

2 Tabulated spans are based on the lowest $F_b$, $F_v$, and E for #2 Grade Douglas Fir-Larch, Hem-Fir, Southern PIne, and Spruce-Pine-Fir. For #3 Grade lumber, spans shall be multiplied by 0.75.

3 Tabulated spans assume 20F combination glulam with a minimum $F_{bx}$=2,000psi, $F_{vx}$=210psi, and E=1,500,000psi.

4 Spans checked for live load deflection only.

# List of Appendix A Wind Load Tables for Uplift Strap and Ridge Strap Connections

A-3.4 Uplift Strap Connection Requirements (Roof-to-Wall, Wall-to-Wall, and Wall-to-Foundation) - Exposure B..... 338

A-3.4 Uplift Strap Connection Requirements (Roof-to-Wall, Wall-to-Wall, and Wall-to-Foundation) - Exposure C..... 339

A-3.6 Ridge Tension Strap Connection Requirements for Wind - Exposure B..... 340

A-3.6 Ridge Tension Strap Connection Requirements for Wind - Exposure C..... 341

## Table A-3.4 Uplift Strap Connection Requirements (Roof-to-Wall, Wall-to-Wall, and Wall-to-Foundation)

# Exposure B

(Prescriptive Alternative to Table 3.4)

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Framing Spacing (in.) | Roof Span (ft.) | Number of 8d Common Nails or 10d Box Nails in Each End of 1-1/4" x 20 gage Strap[1,2,3] | | | | | | | | | | | | | |
| 12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 32 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 |
| | 36 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| 16 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 7 |
| | 32 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 |
| | 36 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 7 | - |
| 19.2 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 7 |
| | 28 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 6 | - |
| | 32 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 7 | - |
| | 36 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 5 | 6 | 7 | - | - |
| 24 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 6 |
| | 20 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | - |
| | 24 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 7 | - |
| | 28 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 5 | 6 | 7 | - | - |
| | 32 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | - | - | - |
| | 36 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 5 | 6 | 7 | - | - | - |

1 Prescriptive limits are based on assumptions in Table 3.4.

2 Tabulated uplift connection requirements assume a roof and ceiling assembly dead load of 9 psf (0.60 x 15 psf = 9 psf). If a ceiling assembly is not present or if the ceiling assembly is not connected to the roof assembly, the tabulated number of nails shall be increased by 1 nail at each end of the strap.

3 Minimum ASTM A653 Grade 33 steel strap.

4 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table A-3.4 Uplift Strap Connection Requirements (Roof-to-Wall, Wall-to-Wall, and Wall-to-Foundation) Exposure C

(Prescriptive Alternative to Table 3.4)

Dead Load Assumptions: Roof/Ceiling Assembly DL = 15 psf

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Framing Spacing (in.) | Roof Span (ft.) | Number of 8d Common Nails or 10d Box Nails in Each End of 1-1/4" x 20 gage Strap[1,2,3] | | | | | | | | | | | | | |
| 12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 20 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 24 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | 28 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 |
| | 32 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - |
| | 36 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 6 | 7 | - |
| 16 | 12 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 |
| | 16 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | 20 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 5 | 6 | - |
| | 24 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - |
| | 28 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - | - |
| | 32 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 7 | - | - | - |
| | 36 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 | - | - | - |
| 19.2 | 12 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | 16 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 6 | - |
| | 20 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 6 | 7 | - |
| | 24 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - | - |
| | 28 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 | - | - | - |
| | 32 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 7 | - | - | - | - |
| | 36 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - | - | - | - |
| 24 | 12 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - |
| | 16 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - | - |
| | 20 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 | - | - | - |
| | 24 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 | - | - | - | - |
| | 28 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | - | - | - | - | - |
| | 32 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 | - | - | - | - | - |
| | 36 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | - | - | - | - | - | - |

1 Prescriptive limits are based on assumptions in Table 3.4.

2 Tabulated uplift connection requirements assume a roof and ceiling assembly dead load of 9 psf (0.60 x 15 psf = 9 psf). If a ceiling assembly is not present or if the ceiling assembly is not connected to the roof assembly, the tabulated number of nails shall be increased by 1 nail at each end of the strap.

3 Minimum ASTM A653 Grade 33 steel strap.

4 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table A-3.6 Ridge Tension Strap Connection Requirements for Wind

# Exposure B

(Prescriptive Alternative to Table 3.6)

Dead Load Assumptions: Roof Assembly DL = 10 psf

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roof Pitch | Roof Span (ft) | Number of 8d Common Nails or 10d Box Nails in each end of 1-1/4" Strap[1,2,3,4,5,6,7] | | | | | | | | | | | | | |
| 3:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 20 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 24 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 |
| | 28 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 7 | - |
| | 32 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 7 | - | - |
| | 36 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 6 | 6 | - | - | - |
| 4:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 24 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 28 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 |
| | 32 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 6 | - |
| | 36 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - |
| 5:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 |
| | 32 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 36 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 |
| 6:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 32 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 |
| | 36 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| 7:12-12:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 |
| | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| | 24 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 28 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 |
| | 32 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 |
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1 Tabulated connection requirements shall be permitted to be multiplied by 0.70 for framing not located within 8 feet of building corners.

2 Tabulated connection requirements are based on total uplift minus the roof assembly dead load of 6 psf (0.6 x 10 psf = 6 psf).

3 Tabulated connection requirements are based on a 12 inch ridge strap spacing, for different ridge strap spacing, multiply the tabulated values by the appropriate multiplier below:

| Ridge Strap Spacing (in.) | 12 | 16 | 19.2 | 24 | 48 |
|---|---|---|---|---|---|
| Multiplier | 1.00 | 1.33 | 1.60 | 2.00 | 4.00 |

When the tabulated connection requirements are adjusted for the ridge strap spacing and the number of required nails exceeds 7, Table A-3.6 does not apply. Use loads from Table 3.6.

4 When the tabulated number of nails required in each end of the strap is equal to 1 and the framing is attached in accordance with Table 3.1, the ridge strap and additional nailing is not required.

5 When a collar tie is used in lieu of a ridge strap, the number of 10d common nails required in each end of the collar tie need not exceed the tabulated number of 8d common nails in a steel strap, or the number of 12d box nails in each end of the collar tie need not exceed the tabulated number of 10d box nails in a steel strap.

6 1-1/4" 20 gage ridge strap shall be of ASTM A653 grade 33 steel or equivalent.

7 For jack rafter uplift connections, use a roof span equal to twice the jack rafter length. The jack rafter length includes the overhang length and the jack span.

## Table A-3.6 Ridge Tension Strap Connection Requirements for Wind — Exposure C

(Prescriptive Alternative to Table 3.6)

Dead Load Assumptions: Roof Assembly DL = 10 psf

| Wind Speed 3-second gust (mph) | | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roof Pitch | Roof Span (ft) | Number of 8d Common Nails or 10d Box Nails in each end of 1-1/4" Strap[1,2,3,4,5,6,7] | | | | | | | | | | | | | |
| 3:12 | 12 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 |
| | 16 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 |
| | 20 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - |
| | 24 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 6 | 7 | - | - |
| | 28 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | - | - | - | - |
| | 32 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - | - | - | - |
| | 36 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - | - | - | - | - |
| 4:12 | 12 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 |
| | 16 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 20 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 |
| | 24 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - |
| | 28 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - | - |
| | 32 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - | - | - |
| | 36 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | - | - | - | - |
| 5:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 |
| | 20 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 |
| | 24 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | 28 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | - |
| | 32 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | - |
| | 36 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - | - |
| 6:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 20 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 |
| | 24 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 |
| | 28 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 |
| | 32 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | - |
| | 36 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | - |
| 7:12-12:12 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 |
| | 16 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| | 20 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 |
| | 24 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 |
| | 28 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| | 32 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 7 |
| | 36 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | - |

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