

Western Lumber Span Tables

for Floor and Ceiling Joists and Roof Rafters



Western Wood Products Association

computed with



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FLOOR JOISTS

| | | | | |
|-------|--------|-------|-------|----|
| FJ-1 | 30#LL | 10#DL | L/360 | 8 |
| FJ-2 | 30#LL | 25#DL | L/360 | 8 |
| FJ-3 | 40#LL | 10#DL | L/360 | 9 |
| FJ-4 | 40#LL | 20#DL | L/360 | 9 |
| FJ-5 | 40#LL | 25#DL | L/360 | 10 |
| FJ-6 | 50#LL | 10#DL | L/360 | 10 |
| FJ-7 | 50#LL | 20#DL | L/360 | 11 |
| FJ-8 | 50#LL | 25#DL | L/360 | 11 |
| FJ-9 | 60#LL | 10#DL | L/360 | 12 |
| FJ-10 | 60#LL | 20#DL | L/360 | 12 |
| FJ-11 | 60#LL | 25#DL | L/360 | 13 |
| FJ-12 | 75#LL | 10#DL | L/360 | 13 |
| FJ-13 | 75#LL | 20#DL | L/360 | 14 |
| FJ-14 | 75#LL | 25#DL | L/360 | 14 |
| FJ-15 | 80#LL | 10#DL | L/360 | 15 |
| FJ-16 | 80#LL | 20#DL | L/360 | 15 |
| FJ-17 | 80#LL | 25#DL | L/360 | 16 |
| FJ-18 | 100#LL | 10#DL | L/360 | 16 |
| FJ-19 | 100#LL | 20#DL | L/360 | 17 |
| FJ-20 | 100#LL | 25#DL | L/360 | 17 |
| FJ-21 | 125#LL | 10#DL | L/360 | 18 |
| FJ-22 | 125#LL | 20#DL | L/360 | 18 |

CEILING JOISTS

| | | | | |
|------|-------|-------|-------|----|
| CJ-1 | 20#LL | 10#DL | L/360 | 19 |
| CJ-2 | 20#LL | 10#DL | L/240 | 19 |
| CJ-3 | 10#LL | 10#DL | L/360 | 20 |
| CJ-4 | 10#LL | 5#DL | L/240 | 20 |

ROOF RAFTERS

| | | | | |
|-------|--------|-------|-------|----|
| RR-1 | 20#LL | 10#DL | L/240 | 21 |
| RR-2 | 20#LL | 15#DL | L/180 | 21 |
| RR-3 | 20#LL | 15#DL | L/240 | 22 |
| RR-4 | 20#LL | 15#DL | L/360 | 22 |
| RR-5 | 20#LL | 25#DL | L/240 | 23 |
| RR-6 | 20#LL | 30#DL | L/360 | 23 |
| RR-7 | 20#SL | 10#DL | L/240 | 24 |
| RR-8 | 25#SL | 10#DL | L/180 | 24 |
| RR-9 | 25#SL | 10#DL | L/240 | 25 |
| RR-10 | 30#SL | 10#DL | L/240 | 25 |
| RR-11 | 40#SL | 10#DL | L/240 | 26 |
| RR-12 | 60#SL | 10#DL | L/240 | 26 |
| RR-13 | 20#SL | 7#DL | L/180 | 27 |
| RR-14 | 25#SL | 7#DL | L/180 | 27 |
| RR-15 | 30#SL | 7#DL | L/180 | 28 |
| RR-16 | 40#SL | 7#DL | L/180 | 28 |
| RR-17 | 60#SL | 7#DL | L/180 | 29 |
| RR-18 | 80#SL | 7#DL | L/180 | 29 |
| RR-19 | 100#SL | 7#DL | L/180 | 30 |
| RR-20 | 20#SL | 15#DL | L/180 | 30 |
| RR-21 | 25#SL | 15#DL | L/180 | 31 |
| RR-22 | 30#SL | 15#DL | L/180 | 31 |
| RR-23 | 40#SL | 15#DL | L/180 | 32 |
| RR-24 | 60#SL | 15#DL | L/180 | 32 |
| RR-25 | 80#SL | 15#DL | L/180 | 33 |
| RR-26 | 100#SL | 15#DL | L/180 | 33 |
| RR-27 | 20#SL | 15#DL | L/240 | 34 |
| RR-28 | 25#SL | 15#DL | L/240 | 34 |
| RR-29 | 30#SL | 15#DL | L/240 | 35 |
| RR-30 | 40#SL | 15#DL | L/240 | 35 |
| RR-31 | 60#SL | 15#DL | L/240 | 36 |
| RR-32 | 80#SL | 15#DL | L/240 | 36 |
| RR-33 | 100#SL | 15#DL | L/240 | 37 |
| RR-34 | 20#SL | 25#DL | L/240 | 37 |
| RR-35 | 25#SL | 25#DL | L/240 | 38 |

| | | | | |
|-------|--------|-------|-------|----|
| RR-36 | 30#SL | 25#DL | L/240 | 38 |
| RR-37 | 40#SL | 25#DL | L/240 | 39 |
| RR-38 | 60#SL | 25#DL | L/240 | 39 |
| RR-39 | 80#SL | 25#DL | L/240 | 40 |
| RR-40 | 100#SL | 25#DL | L/240 | 40 |
| | | | | |
| RR-41 | 20#SL | 15#DL | L/360 | 41 |
| RR-42 | 25#SL | 15#DL | L/360 | 41 |
| RR-43 | 30#SL | 15#DL | L/360 | 42 |
| RR-44 | 40#SL | 15#DL | L/360 | 42 |
| RR-45 | 60#SL | 15#DL | L/360 | 43 |
| RR-46 | 80#SL | 15#DL | L/360 | 43 |
| RR-47 | 100#SL | 15#DL | L/360 | 44 |
| | | | | |
| RR-48 | 20#SL | 30#DL | L/360 | 44 |
| RR-49 | 25#SL | 30#DL | L/360 | 45 |
| RR-50 | 30#SL | 30#DL | L/360 | 45 |
| RR-51 | 40#SL | 30#DL | L/360 | 46 |
| RR-52 | 60#SL | 30#DL | L/360 | 46 |
| RR-53 | 80#SL | 30#DL | L/360 | 47 |
| RR-54 | 100#SL | 30#DL | L/360 | 47 |

ABOUT WWPA

Western Wood Products Association (WWPA) provides lumber grading, technical support and business information services for the Western lumber products of its Member companies. Approved by the Board of Review of the American Lumber Standard Committee, Inc. (ALSC), which operates under the jurisdiction of the U.S. Department of Commerce, WWPA is accredited as a lumber inspection and rules-writing agency.

Lumber buyers can look to WWPA's registered grade mark for the assurance that lumber consistently meets grade specifications and performance standards. The Association monitors lumber grading and product quality control at its Member mills and provides mill inspection, lumber grader training and incentive programs, MSR and glued products standards, resource recovery and mill efficiency studies.

In addition, WWPA provides technical support services and information on Western lumber end uses to lumber buyers throughout the world, and publishes a variety of statistical reports on Western lumber production, distribution and consumption.

The Member companies of WWPA support the many programs that assist buyers in specifying and using Western lumber products. These companies are among the leaders in the lumber industry in supplying quality products to users worldwide.

Additional information about WWPA is available online at www.wwpa.org. Web site visitors can view technical information on Western lumber, order publications, download the Lumber Design Suite and access a searchable, interactive Buyer's Guide.

SPECIES GROUPINGS—Marketing Categories

Western lumber is often harvested, manufactured and sold in species groupings known as marketing categories. Some of the more than 20 commercially important softwood species are interchangeable in that they share performance properties and are similar in appearance. For structural applications, Western species readily combine into six Species Groups, shown below.

The Standard Species Combinations for structurally graded Western lumber are also shown on this page.

Alternate Combinations are available in non-structural grades. Some species are also available separately, in both structural and non-structural grades. However, when a species combination other than one of those shown on this page is used for structural applications, the species within the combination with the lowest assigned design value will govern. Refer to WWPA's *Western Lumber Product Use Manual* or the *Western Lumber Grading Rules* for additional information.

| Species Groups | Standard Species Combinations | |
|--|--|--|
| Western Woods | Douglas Fir-Larch Douglas Fir— <i>Pseudotsuga menziesii</i> Western Larch— <i>Larix occidentalis</i> | |
| | Douglas Fir-South Douglas Fir-South— <i>Pseudotsuga menziesii</i> (Grown in AZ, CO, NV, NM and UT) | |
| Western Woods | Hem-Fir Western Hemlock— <i>Tsuga heterophylla</i> Noble Fir— <i>Abies procera</i> California Red Fir— <i>Abies magnifica</i> Grand Fir— <i>Abies grandis</i> Pacific Silver Fir— <i>Abies amabilis</i> White Fir— <i>Abies concolor</i> | |
| | Spruce-Pine-Fir (South) Sitka Spruce— <i>Picea sitchensis</i> Engelmann Spruce— <i>Picea engelmannii</i> Lodgepole Pine— <i>Pinus contorta</i> | |
| | Western Woods | Alpine Fir— <i>Abies lasiocarpa</i> (or Subalpine Fir) |
| | | Ponderosa Pine— <i>Pinus ponderosa</i> Sugar Pine— <i>Pinus lambertiana</i> |
| | | Idaho White Pine— <i>Pinus monticola</i> (or Western White Pine) |
| Mountain Hemlock— <i>Tsuga mertensiana</i> | | |
| Western Cedars | Incense Cedar— <i>Libocedrus decurrens</i> Western Red Cedar— <i>Thuja plicata</i> Port Orford Cedar— <i>Chamaecyparis lawsoniana</i> Alaskan Cedar— <i>Chamaecyparis nootkatensis</i> | |

DESIGN VALUES

Design values for North American softwood structural lumber are computed in accordance with ASTM standards based on clear-wood tests or on tests of full-size pieces in specific grades, conducted in cooperation with the USDA Forest Products Laboratory. The applicable standards are *ASTM Standards D2555* and *D245* for clear wood, and *D1990* for full-size specimens (the In-Grade Testing Program). Refer to Sections 100.00 to 170.00 of the *Western Lumber Grading Rules* for additional information.

For load conditions or deflection limit settings outside the scope of this publication, use the WWPA Lumber Design Suite, the newest design tool available to help architects, engineers, designers and code officials in properly specifying and using Western lumber products. For more information on the suite, go to the Association's web site at www.wwpa.org

BASE VALUES FOR WESTERN DIMENSION LUMBER¹

Nominal Sizes: 2" to 4" thick by 2" and wider

Grades described in *Western Lumber Grading Rules*, Sections 42.00 and 62.00.

| Species or Group | Grade | Extreme Fiber Stress in Bending ² | Modulus of Elasticity | |
|-------------------|-------------------------|--|-----------------------|-----------|
| | | Single Member F_b | E | |
| Douglas Fir-Larch | Select Structural | 1500 | 1,900,000 | |
| | No. 1 & Btr. | 1200 | 1,800,000 | |
| | No. 1 | 1000 | 1,700,000 | |
| | No. 2 | 900 | 1,600,000 | |
| | No. 3 | 525 | 1,400,000 | |
| | Douglas Fir-South | | | |
| | Select Structural | 1350 | 1,400,000 | |
| | No. 1 | 925 | 1,300,000 | |
| | No. 2 | 850 | 1,200,000 | |
| | No. 3 | 500 | 1,100,000 | |
| Hem-Fir | Select Structural | 1400 | 1,600,000 | |
| | No. 1 & Btr. | 1100 | 1,500,000 | |
| | No. 1 | 975 | 1,500,000 | |
| | No. 2 | 850 | 1,300,000 | |
| | No. 3 | 500 | 1,200,000 | |
| | Spruce-Pine-Fir (South) | Select Structural | 1300 | 1,300,000 |
| | | No. 1 | 875 | 1,200,000 |
| No. 2 | | 775 | 1,100,000 | |
| | No. 3 | 450 | 1,000,000 | |
| | Western Cedars | Select Structural | 1000 | 1,100,000 |
| | | No. 1 | 725 | 1,000,000 |
| No. 2 | | 700 | 1,000,000 | |
| | No. 3 | 400 | 900,000 | |
| | Western Woods | Select Structural | 900 | 1,200,000 |
| | | No. 1 | 675 | 1,100,000 |
| No. 2 | | 675 | 1,000,000 | |
| | No. 3 | 375 | 900,000 | |

¹ Design values in pounds per square inch.

² Multiply with appropriate Size Factor (C_F) shown below.

SIZE ADJUSTMENT FACTORS (C_F)

Apply to Dimension Lumber Base Values

| Grades | Nominal Width (depth) | F_b | |
|--|-----------------------|-----------------------|------------------|
| | | 2" & 3" thick nominal | 4" thick nominal |
| Select Structural, No. 1 & Btr., No. 1, No. 2, and No. 3 | 2", 3" and 4" | 1.5 | 1.5 |
| | 5" | 1.4 | 1.4 |
| | 6" | 1.3 | 1.3 |
| | 8" | 1.2 | 1.3 |
| | 10" | 1.1 | 1.2 |
| | 12" | 1.0 | 1.1 |
| | 14" & wider | 0.9 | 1.0 |

MECHANICAL PROPERTIES RELATED TO BENDING MEMBERS

Lumber strength properties are assigned to five basic strength properties: fiber stress in bending (F_b), tension parallel-to-grain (F_t), horizontal shear (F_v), compression perpendicular-to-grain ($F_{c\perp}$) and compression parallel-to-grain (F_c). The modulus of elasticity (E or MOE) is a ratio of the amount a piece of lumber will deflect in proportion to an applied load. It is a measurement of stiffness and not a strength property.

These span tables are calculated based on MOE and F_b values. In addition $F_{c\perp}$ and F_v are included as a consideration for selection of joist and rafters.

Extreme Fiber Stress in Bending - F_b (Fig. 1) When loads are applied, structural members bend, producing tension in the fibers along the faces farthest from the applied load and compression in the fibers along the face nearest to the applied load. These induced stresses in the fibers are designated as "extreme fiber stress in bending" (F_b).

Single Member F_b design values are used in design where the strength of an individual piece, such as a beam, may be solely responsible for carrying a specific design load.

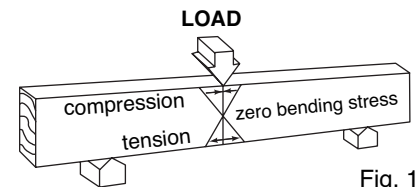


Fig. 1

Repetitive Member F_b design values are used in design when three or more load sharing members, such as joists, rafters, or studs, are spaced no more than 24" apart and are joined by flooring, sheathing or other load-distributing elements. Repetitive members are also used where pieces are adjacent, such as decking.

Horizontal Shear - F_v (Fig. 2) Horizontal shear stresses tend to slide fibers over each other horizontally. Most predominate in short, heavily loaded deep beams. Increasing beam cross section decreases shear stresses*.

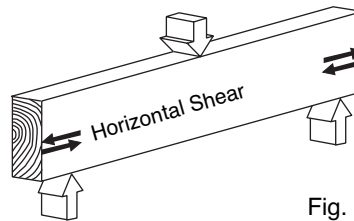


Fig. 2

Compression Perpendicular to Grain - $F_{c\perp}$ (Fig. 3) Where a joist, beam or similar piece of lumber bears on supports, the load tends to compress the fibers. It is necessary that the bearing area be sufficient to prevent excessive side-grain crushing.

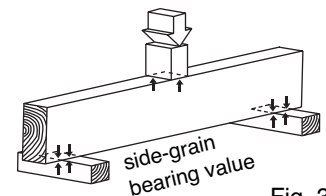


Fig. 3

* Loads within the net depth of the member away from the end support can be excluded in design analysis.

Modulus of Elasticity - E (Fig. 4)

The modulus of elasticity is a ratio of the amount a material will deflect in proportion to an applied load.

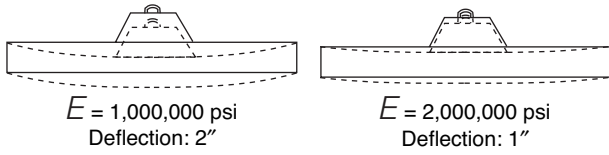


Fig. 4

DESIGN CRITERIA

The following span tables were calculated using Western Lumber Base Values as published in WWPA's *Western Lumber Grading Rules*. These spans relate to products manufactured from U.S. Western species (see page 3) and are not appropriate for use with products manufactured from species imported from other countries. Maximum spans were computed using standard engineering procedures for simple spans with uniformly distributed loads. Some building codes permit reductions of certain design loads for large tributary areas and steep-pitch roofs. These reductions may vary from code to code and are not considered in the computations for spans in this publication. **Allowable roof snow load rafter spans are based on design snow loads.** Ground snow loads must be converted to design snow loads for roofs in accordance with appropriate building code provisions before using the tables. Spans are given in feet and inches of horizontal projection. The spans given are rounded to the nearest inch and represent the maximum allowable span when controlled by deflection and/or bending. Design loads are in pounds per square foot and are designated with a # symbol in the tables.

To minimize serviceability related problems, such as cracking of finishes, deflections are typically limited to span/360 for plaster finish, and span/240 for drywall finish.

This book is intended for use in structures where the moisture content of lumber in use does not exceed 19% for an extended period of time.

USING WESTERN LUMBER SPAN TABLES

Span Measurement

Span, for joists and rafters, is the clear distance between supports. For sloping rafters, the span is measured along the horizontal projection. The maximum spans provided in these tables were determined according to criteria set forth by the American Forest & Paper Association in its code-recognized *Span Tables for Joists and Rafters*.

Bending Values

In these *Western Lumber Span Tables*, Western lumber F_b base values have been adjusted for size by appropriate size factors (C_F); **no further size-adjustment is necessary.**

Repetitive Members

The repetitive member factor (C_r) of 1.15 has been applied to the size-adjusted F_b values for the spans in these joist and rafter tables; **no further repetitive member-adjustment is necessary.**

Duration of Load

The size- and repetitive member-adjusted base values used for these tables **have been adjusted for duration of load (C_D), where appropriate**, by the following factors:

DURATION OF LOAD ADJUSTMENT (C_D)

| Load Duration | Factor |
|-----------------------------------|--------|
| Normal (floor and ceiling joists) | 1.00 |
| Snow Load (roof) | 1.15 |
| Minimum Design Live Load (roof) | 1.25 |

Deflection

Structural members deflect or bend under load. Although not considered a safety factor, deflection is limited in most span applications when appearance or stiffness is important. Deflection may be the controlling factor for certain size/grade combinations depending on the required stiffness of the system.

Deflection limits are expressed as a ratio of the span in inches divided by the limiting factor. Live load (only) deflection is considered in these *Western Lumber Span Tables*, in accordance with established engineering practices for joists and rafters. The model building codes set maximum allowable deflection criteria for structural members based on their end use. The most common deflection criteria are provided in the following span tables and are expressed as $L/360$, $L/240$ and $L/180$, where "L" is the length in inches.

When span lengths in the tables are controlled by the deflection limit, spans are shown in *italicized* type:

| | | | |
|------|-------------|-------------|-------------|
| 15-4 | <i>15-4</i> | 15-4 | 15-4 |
| | <i>s</i> | | |

In cases where a stiffer system or a higher level of vibration control is desired, the deflection-limited spans should be multiplied by the adjustment factors shown below:

| Deflection Limit | Adjustment Factor |
|------------------|-------------------|
| $L/480$ | 0.91 |
| $L/600$ | 0.84 |

Horizontal Shear and Compression Perpendicular-to-Grain

Shear design values for lumber recently have been revised and approved by the American Lumber Standard Committee, Inc., in accordance with changes in ASTM Standard D245. These new lumber shear values are higher than earlier assigned values. A reduction is made to compensate for any degree of shake, check or split that might develop in a piece. Horizontal shear base values (F_v) and compression perpendicular-to-grain values ($F_{c\perp}$) for Western lumber species groupings are shown on the next page for your convenience.

HORIZONTAL SHEAR (F_V) AND COMPRESSION PERPENDICULAR-TO-GRAIN ($F_{C\perp}$) VALUES

| Western Lumber Species Groupings | Horizontal Shear F_V | Compression Perpendicular $F_{C\perp}$ |
|----------------------------------|------------------------|--|
| Douglas Fir-Larch | 180 | 625 |
| Douglas Fir-South | 180 | 520 |
| Hem-Fir | 150 | 405 |
| Spruce-Pine-Fir (South) | 135 | 335 |
| Western Woods | 135 | 335 |

Horizontal shear (F_V) and compression perpendicular-to-grain ($F_{C\perp}$) have been considered in the development of these span tables. However, there is one exception:

Maximum spans have not been reduced when compression perpendicular-to-grain exceeds the assigned $F_{C\perp}$ values, based on a bearing area of two inches times the net joist thickness. (Two inches is the assumed bearing length in the routine calculation of spans.)

Spans are shown in **bold-faced** type:

15-4 15-4 **15-4** **15-4**
 s

for compression perpendicular-to-grain stress exceeding the assigned $F_{C\perp}$ based on two-inch bearing length.

Example 1—Analysis for Compression Perpendicular-to-Grain (from Table FJ-18)

Hem-Fir, Select Structural, 2x12, 24" on center

Span = 12'-5" (12.42')
 $F_{C\perp}$ = 405 psi
 Total load per sq. ft. = 110#
 Spacing = 2 ft. on center

$$\text{Total Load} = \frac{12.42' \times 110\# \times 2' \text{ o.c.}}{2} = 1366\#$$

$$\frac{1366\#}{405 \text{ psi}} = 3.37 \text{ square inches}$$

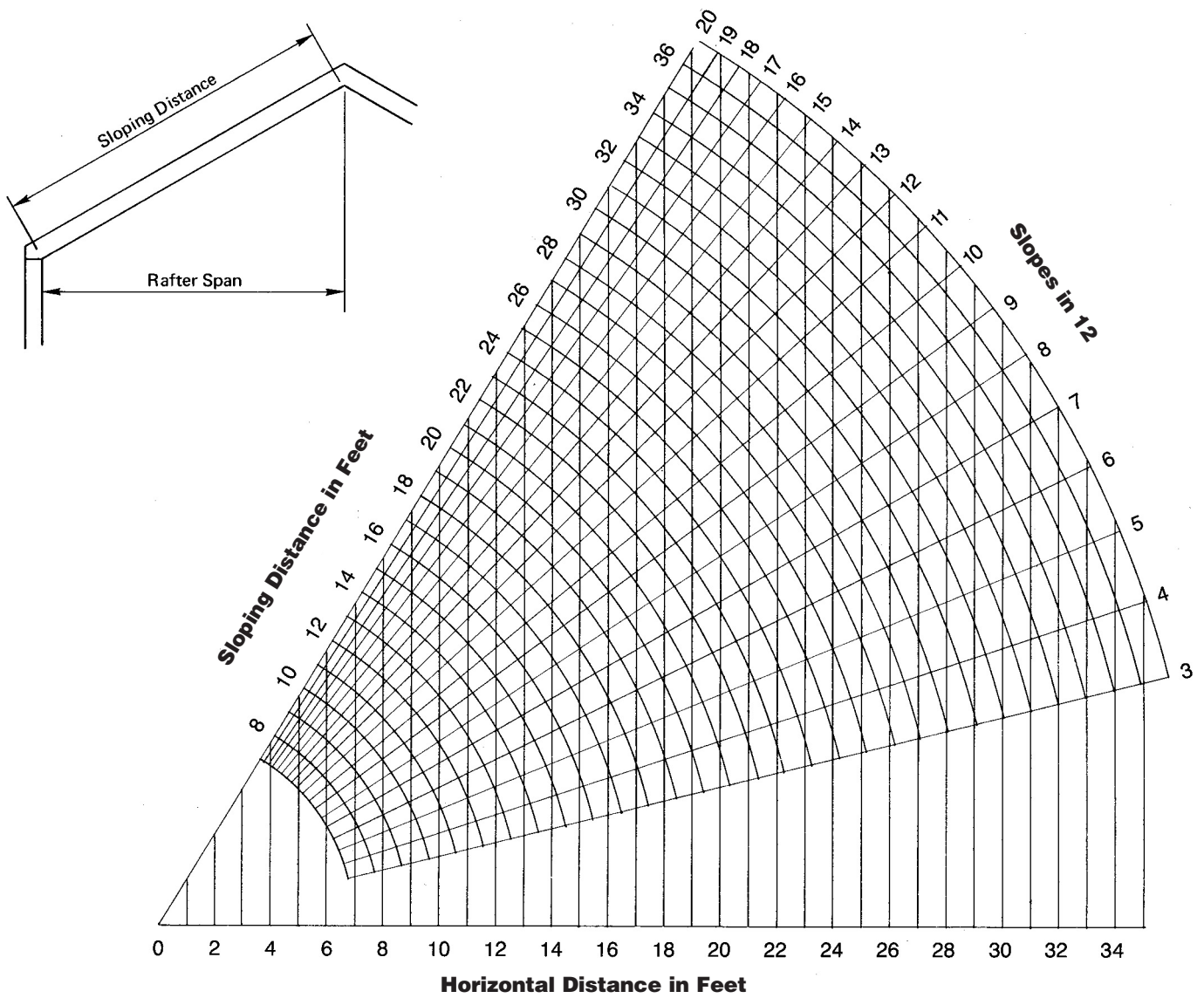
$$\frac{3.37 \text{ square inches}}{1.5 \text{ inch wide joist}} = 2.25 \text{ inches of bearing required}$$

When span lengths are controlled by deflection and have compression perpendicular-to-grain values, then span lengths are shown in **bold-faced italicized** type.

15-4 15-4 **15-4** **15-4**
 s

CONVERSION DIAGRAM FOR RAFTERS

Courtesy of the American Forest & Paper Association



To use the diagram, select the known horizontal distance and follow the vertical line to its intersection with the radial line of the specified slope, then proceed along the arc to read the sloping distance. In some cases it may be desirable to interpolate between the one-foot separations. The diagram also may be used

to find the horizontal distance corresponding to a given sloping distance or to find the slope when the horizontal and sloping distances are known.
Example: With a roof slope of 8 in 12 and a horizontal distance of 20 feet, the sloping distance may be read as 24 feet.

FLOOR JOISTS

30# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-1

Design Criteria: *Strength* - 30 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 12-6 | 11-4 | 10-8 | 9-11 | 16-6 | 15-0 | 14-1 | 13-1 | 21-0 | 19-1 | 18-0 | 16-8 | 25-7 | 23-3 | 21-10 | 20-3 | | |
| | No.1 & Btr. | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-5 | 25-1 | 22-10 | 21-4 | 19-1 | | |
| | No.1 | 12-0 | 10-11 | 10-4 | 9-7 | 15-10 | 14-5 | 13-7 | 12-4 | 20-3 | 18-5 | 16-9 | 15-0 | 24-8 | 21-4 | 19-6 | 17-5 | | |
| | No.2 | 11-10 | 10-9 | 10-1 | 9-3 | 15-7 | 14-2 | 13-0 | 11-8 | 19-10 | 17-5 | 15-11 | 14-3 | 23-4 | 20-3 | 18-6 | 16-6 | | |
| | No.3 | 9-11 | 8-7 | 7-10 | 7-0 | 12-7 | 10-11 | 10-0 | 8-11 | 15-5 | 13-4 | 12-2 | 10-11 | 17-10 | 15-5 | 14-1 | 12-7 | | |
| Douglas Fir- South | Sel. Struc. | 11-3 | 10-3 | 9-8 | 8-11 | 14-11 | 13-6 | 12-9 | 11-10 | 19-0 | 17-3 | 16-3 | 15-1 | 23-1 | 21-0 | 19-9 | 18-4 | | |
| | No.1 | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-10 | 14-5 | 22-6 | 20-6 | 18-9 | 16-9 | | |
| | No.2 | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 13-10 | 21-11 | 19-8 | 17-11 | 16-1 | | |
| | No.3 | 9-8 | 8-5 | 7-8 | 6-10 | 12-4 | 10-8 | 9-9 | 8-8 | 15-0 | 13-0 | 11-10 | 10-7 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| Hem-Fir | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-7 | 14-2 | 13-4 | 12-4 | 19-10 | 18-0 | 17-0 | 15-9 | 24-2 | 21-11 | 20-8 | 19-2 | | |
| | No.1 & Btr. | 11-7 | 10-6 | 9-10 | 9-2 | 15-3 | 13-10 | 13-0 | 12-1 | 19-5 | 17-8 | 16-7 | 15-5 | 23-7 | 21-6 | 20-2 | 18-3 | | |
| | No.1 | 11-7 | 10-6 | 9-10 | 9-2 | 15-3 | 13-10 | 13-0 | 12-1 | 19-5 | 17-8 | 16-7 | 14-10 | 23-7 | 21-1 | 19-3 | 17-2 | | |
| | No.2 | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-4 | 18-6 | 16-10 | 15-6 | 13-10 | 22-6 | 19-8 | 17-11 | 16-1 | | |
| | No.3 | 9-8 | 8-5 | 7-8 | 6-10 | 12-4 | 10-8 | 9-9 | 8-8 | 15-0 | 13-0 | 11-10 | 10-7 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-10 | 14-8 | 22-6 | 20-6 | 19-3 | 17-11 | | |
| | No.1 | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-1 | 21-11 | 19-11 | 18-3 | 16-3 | | |
| | No.2 | 10-5 | 9-6 | 8-11 | 8-3 | 13-9 | 12-6 | 11-9 | 10-10 | 17-6 | 15-11 | 14-9 | 13-3 | 21-4 | 18-9 | 17-2 | 15-4 | | |
| | No.3 | 9-3 | 8-0 | 7-3 | 6-6 | 11-8 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| Western Woods | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-3 | 21-11 | 19-11 | 18-6 | 16-6 | | |
| | No.1 | 10-5 | 9-6 | 8-11 | 8-0 | 13-9 | 12-4 | 11-4 | 10-1 | 17-5 | 15-1 | 13-10 | 12-4 | 20-3 | 17-6 | 16-0 | 14-4 | | |
| | No.2 | 10-1 | 9-2 | 8-8 | 8-0 | 13-4 | 12-1 | 11-4 | 10-1 | 17-0 | 15-1 | 13-10 | 12-4 | 20-3 | 17-6 | 16-0 | 14-4 | | |
| | No.3 | 8-5 | 7-3 | 6-8 | 5-11 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-3 | 9-2 | 15-1 | 13-1 | 11-11 | 10-8 | | |

FLOOR JOISTS

30# LIVE LOAD 25# DEAD LOAD L/360

Table FJ-2

Design Criteria: *Strength* - 30 lbs. per sq. ft. live load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 12-6 | 11-4 | 10-8 | 9-11 | 16-6 | 15-0 | 14-1 | 12-10 | 21-0 | 19-1 | 17-6 | 15-8 | 25-7 | 22-3 | 20-4 | 18-2 | | |
| | No.1 & Btr. | 12-3 | 11-1 | 10-2 | 9-1 | 16-2 | 14-1 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-0 | 23-0 | 19-11 | 18-2 | 16-3 | | |
| | No.1 | 11-8 | 10-2 | 9-3 | 8-3 | 14-10 | 12-10 | 11-9 | 10-6 | 18-1 | 15-8 | 14-4 | 12-10 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.2 | 11-1 | 9-7 | 8-9 | 7-10 | 14-1 | 12-2 | 11-1 | 9-11 | 17-2 | 14-11 | 13-7 | 12-2 | 19-11 | 17-3 | 15-9 | 14-1 | | |
| | No.3 | 8-6 | 7-4 | 6-8 | 6-0 | 10-9 | 9-4 | 8-6 | 7-7 | 13-1 | 11-4 | 10-4 | 9-3 | 15-3 | 13-2 | 12-0 | 10-9 | | |
| Douglas Fir- South | Sel. Struc. | 11-3 | 10-3 | 9-8 | 8-11 | 14-11 | 13-6 | 12-9 | 11-10 | 19-0 | 17-3 | 16-3 | 14-11 | 23-1 | 21-0 | 19-3 | 17-3 | | |
| | No.1 | 11-0 | 9-9 | 8-11 | 8-0 | 14-3 | 12-4 | 11-3 | 10-1 | 17-5 | 15-1 | 13-9 | 12-4 | 20-2 | 17-6 | 16-0 | 14-3 | | |
| | No.2 | 10-9 | 9-4 | 8-6 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-8 | 14-6 | 13-2 | 11-10 | 19-4 | 16-9 | 15-4 | 13-8 | | |
| | No.3 | 8-3 | 7-2 | 6-7 | 5-10 | 10-6 | 9-1 | 8-3 | 7-5 | 12-10 | 11-1 | 10-1 | 9-1 | 14-10 | 12-10 | 11-9 | 10-6 | | |
| Hem-Fir | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-7 | 14-2 | 13-4 | 12-4 | 19-10 | 18-0 | 16-11 | 15-2 | 24-2 | 21-6 | 19-8 | 17-7 | | |
| | No.1 & Btr. | 11-7 | 10-6 | 9-8 | 8-8 | 15-3 | 13-6 | 12-4 | 11-0 | 19-0 | 16-5 | 15-0 | 13-5 | 22-0 | 19-1 | 17-5 | 15-7 | | |
| | No.1 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.2 | 10-10 | 9-4 | 8-6 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-8 | 14-6 | 13-2 | 11-10 | 19-4 | 16-9 | 15-4 | 13-8 | | |
| | No.3 | 8-3 | 7-2 | 6-7 | 5-10 | 10-6 | 9-1 | 8-3 | 7-5 | 12-10 | 11-1 | 10-1 | 9-1 | 14-10 | 12-10 | 11-9 | 10-6 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-10 | 14-7 | 22-6 | 20-6 | 18-11 | 16-11 | | |
| | No.1 | 10-9 | 9-6 | 8-8 | 7-9 | 13-10 | 12-0 | 11-0 | 9-10 | 16-11 | 14-8 | 13-5 | 12-0 | 19-8 | 17-0 | 15-6 | 13-11 | | |
| | No.2 | 10-4 | 8-11 | 8-2 | 7-3 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-7 | 13-1 | | |
| | No.3 | 7-10 | 6-10 | 6-2 | 5-7 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 10-0 | | |
| Western Woods | Sel. Struc. | 10-9 | 9-7 | 8-9 | 7-10 | 14-1 | 12-2 | 11-1 | 9-11 | 17-2 | 14-11 | 13-7 | 12-2 | 19-11 | 17-3 | 15-9 | 14-1 | | |
| | No.1 | 9-7 | 8-4 | 7-7 | 6-10 | 12-2 | 10-7 | 9-8 | 8-7 | 14-11 | 12-11 | 11-9 | 10-6 | 17-3 | 14-11 | 13-8 | 12-2 | | |
| | No.2 | 9-7 | 8-4 | 7-7 | 6-10 | 12-2 | 10-7 | 9-8 | 8-7 | 14-11 | 12-11 | 11-9 | 10-6 | 17-3 | 14-11 | 13-8 | 12-2 | | |
| | No.3 | 7-2 | 6-2 | 5-8 | 5-1 | 9-1 | 7-10 | 7-2 | 6-5 | 11-1 | 9-7 | 8-9 | 7-10 | 12-10 | 11-2 | 10-2 | 9-1 | | |

FLOOR JOISTS

40# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-3

Design Criteria: Strength - 40 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 11-4 | 10-4 | 9-8 | 9-0 | 15-0 | 13-7 | 12-10 | 11-11 | 19-1 | 17-4 | 16-4 | 15-2 | 23-3 | 21-1 | 19-10 | 18-5 |
| | No.1 & Btr. | 11-2 | 10-2 | 9-6 | 8-10 | 14-8 | 13-4 | 12-7 | 11-8 | 18-9 | 17-0 | 16-0 | 14-9 | 22-10 | 20-9 | 19-1 | 17-1 |
| | No.1 | 10-11 | 9-11 | 9-4 | 8-8 | 14-5 | 13-1 | 12-4 | 11-0 | 18-5 | 16-5 | 15-0 | 13-5 | 22-0 | 19-1 | 17-5 | 15-7 |
| | No.2 | 10-9 | 9-9 | 9-2 | 8-3 | 14-2 | 12-9 | 11-8 | 10-5 | 18-0 | 15-7 | 14-3 | 12-9 | 20-11 | 18-1 | 16-6 | 14-9 |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 8-0 | 13-9 | 11-11 | 10-11 | 9-9 | 16-0 | 13-10 | 12-7 | 11-3 |
| Douglas Fir-South | Sel. Struc. | 10-3 | 9-4 | 8-9 | 8-2 | 13-6 | 12-3 | 11-7 | 10-9 | 17-3 | 15-8 | 14-9 | 13-8 | 21-0 | 19-1 | 17-11 | 16-8 |
| | No.1 | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 12-11 | 20-6 | 18-4 | 16-9 | 15-0 |
| | No.2 | 9-9 | 8-10 | 8-4 | 7-9 | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 13-10 | 12-5 | 19-11 | 17-7 | 16-1 | 14-4 |
| | No.3 | 8-8 | 7-6 | 6-10 | 6-2 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 |
| Hem-Fir | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-4 | 21-11 | 19-11 | 18-9 | 17-5 |
| | No.1 & Btr. | 10-6 | 9-6 | 9-0 | 8-4 | 13-10 | 12-7 | 11-10 | 11-0 | 17-8 | 16-0 | 15-1 | 14-0 | 21-6 | 19-6 | 18-3 | 16-4 |
| | No.1 | 10-6 | 9-6 | 9-0 | 8-4 | 13-10 | 12-7 | 11-10 | 10-10 | 17-8 | 16-0 | 14-10 | 13-3 | 21-6 | 18-10 | 17-2 | 15-5 |
| | No.2 | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-2 | 16-10 | 15-2 | 13-10 | 12-5 | 20-4 | 17-7 | 16-1 | 14-4 |
| | No.3 | 8-8 | 7-6 | 6-10 | 6-2 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-4 | 20-6 | 18-7 | 17-6 | 16-3 |
| | No.1 | 9-9 | 8-10 | 8-4 | 7-9 | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 14-0 | 12-7 | 19-11 | 17-10 | 16-3 | 14-7 |
| | No.2 | 9-6 | 8-7 | 8-1 | 7-6 | 12-6 | 11-4 | 10-8 | 9-8 | 15-11 | 14-6 | 13-3 | 11-10 | 19-4 | 16-10 | 15-4 | 13-9 |
| | No.3 | 8-3 | 7-2 | 6-6 | 5-10 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 |
| Western Woods | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-9 | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 14-0 | 12-9 | 19-11 | 18-1 | 16-6 | 14-9 |
| | No.1 | 9-6 | 8-7 | 8-0 | 7-2 | 12-6 | 11-1 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-1 | 15-8 | 14-4 | 12-10 |
| | No.2 | 9-2 | 8-4 | 7-10 | 7-2 | 12-1 | 11-0 | 10-1 | 9-0 | 15-5 | 13-6 | 12-4 | 11-0 | 18-1 | 15-8 | 14-4 | 12-10 |
| | No.3 | 7-6 | 6-6 | 5-11 | 5-4 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 |

FLOOR JOISTS

40# LIVE LOAD 20# DEAD LOAD L/360

Table FJ-4

Design Criteria: Strength - 40 lbs. per sq. ft. live load, plus 20 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 11-4 | 10-4 | 9-8 | 9-0 | 15-0 | 13-7 | 12-10 | 11-11 | 19-1 | 17-4 | 16-4 | 15-0 | 23-3 | 21-1 | 19-6 | 17-5 |
| | No.1 & Btr. | 11-2 | 10-2 | 9-6 | 8-8 | 14-8 | 13-4 | 12-4 | 11-0 | 18-9 | 16-5 | 15-0 | 13-5 | 22-0 | 19-1 | 17-5 | 15-7 |
| | No.1 | 10-11 | 9-8 | 8-10 | 7-11 | 14-2 | 12-4 | 11-3 | 10-0 | 17-4 | 15-0 | 13-8 | 12-3 | 20-1 | 17-5 | 15-11 | 14-3 |
| | No.2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-6 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 |
| | No.3 | 8-1 | 7-0 | 6-5 | 5-9 | 10-3 | 8-11 | 8-2 | 7-3 | 12-7 | 10-11 | 9-11 | 8-11 | 14-7 | 12-7 | 11-6 | 10-4 |
| Douglas Fir-South | Sel. Struc. | 10-3 | 9-4 | 8-9 | 8-2 | 13-6 | 12-3 | 11-7 | 10-9 | 17-3 | 15-8 | 14-9 | 13-8 | 21-0 | 19-1 | 17-11 | 16-6 |
| | No.1 | 10-0 | 9-1 | 8-6 | 7-7 | 13-2 | 11-10 | 10-10 | 9-8 | 16-8 | 14-5 | 13-2 | 11-10 | 19-4 | 16-9 | 15-3 | 13-8 |
| | No.2 | 9-9 | 8-10 | 8-2 | 7-4 | 12-10 | 11-4 | 10-4 | 9-3 | 16-0 | 13-10 | 12-8 | 11-4 | 18-6 | 16-1 | 14-8 | 13-1 |
| | No.3 | 7-11 | 6-10 | 6-3 | 5-7 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-3 | 12-4 | 11-3 | 10-1 |
| Hem-Fir | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-4 | 21-11 | 19-11 | 18-9 | 16-10 |
| | No.1 & Btr. | 10-6 | 9-6 | 9-0 | 8-4 | 13-10 | 12-7 | 11-9 | 10-6 | 17-8 | 15-9 | 14-5 | 12-10 | 21-1 | 18-3 | 16-8 | 14-11 |
| | No.1 | 10-6 | 9-6 | 8-9 | 7-10 | 13-10 | 12-2 | 11-1 | 9-11 | 17-1 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 |
| | No.2 | 10-0 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 16-0 | 13-10 | 12-8 | 11-4 | 18-6 | 16-1 | 14-8 | 13-1 |
| | No.3 | 7-11 | 6-10 | 6-3 | 5-7 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-3 | 12-4 | 11-3 | 10-1 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-4 | 20-6 | 18-7 | 17-6 | 16-3 |
| | No.1 | 9-9 | 8-10 | 8-3 | 7-5 | 12-10 | 11-6 | 10-6 | 9-5 | 16-3 | 14-1 | 12-10 | 11-6 | 18-10 | 16-3 | 14-10 | 13-4 |
| | No.2 | 9-6 | 8-7 | 7-10 | 7-0 | 12-6 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-8 | 15-4 | 14-0 | 12-6 |
| | No.3 | 7-6 | 6-6 | 5-11 | 5-4 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 |
| Western Woods | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-6 | 12-10 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 |
| | No.1 | 9-3 | 8-0 | 7-3 | 6-6 | 11-8 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 |
| | No.2 | 9-2 | 8-0 | 7-3 | 6-6 | 11-8 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 |
| | No.3 | 6-10 | 5-11 | 5-5 | 4-10 | 8-8 | 7-6 | 6-10 | 6-2 | 10-7 | 9-2 | 8-5 | 7-6 | 12-4 | 10-8 | 9-9 | 8-8 |

FLOOR JOISTS

40# LIVE LOAD 25# DEAD LOAD L/360

Table FJ-5

Design Criteria: *Strength* - 40 lbs. per sq. ft. live load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 11-4 | 10-4 | 9-8 | 9-0 | 15-0 | 13-7 | 12-10 | 11-10 | 19-1 | 17-4 | 16-2 | 14-5 | 23-3 | 20-6 | 18-8 | 16-9 | | |
| | No.1 & Btr. | 11-2 | 10-2 | 9-4 | 8-4 | 14-8 | 12-11 | 11-10 | 10-7 | 18-3 | 15-10 | 14-5 | 12-11 | 21-2 | 18-4 | 16-9 | 15-0 | | |
| | No.1 | 10-9 | 9-4 | 8-6 | 7-7 | 13-8 | 11-10 | 10-9 | 9-8 | 16-8 | 14-5 | 13-2 | 11-9 | 19-4 | 16-9 | 15-3 | 13-8 | | |
| | No.2 | 10-3 | 8-10 | 8-1 | 7-3 | 12-11 | 11-2 | 10-3 | 9-2 | 15-10 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 13-0 | | |
| | No.3 | 7-10 | 6-9 | 6-2 | 5-6 | 9-11 | 8-7 | 7-10 | 7-0 | 12-1 | 10-5 | 9-7 | 8-6 | 14-0 | 12-1 | 11-1 | 9-11 | | |
| Douglas Fir-South | Sel. Struc. | 10-3 | 9-4 | 8-9 | 8-2 | 13-6 | 12-3 | 11-7 | 10-9 | 17-3 | 15-8 | 14-9 | 13-8 | 21-0 | 19-1 | 17-9 | 15-10 | | |
| | No.1 | 10-0 | 9-0 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 16-0 | 13-11 | 12-8 | 11-4 | 18-7 | 16-1 | 14-8 | 13-2 | | |
| | No.2 | 9-9 | 8-7 | 7-10 | 7-0 | 12-7 | 10-11 | 9-11 | 8-11 | 15-4 | 13-4 | 12-2 | 10-10 | 17-10 | 15-5 | 14-1 | 12-7 | | |
| | No.3 | 7-7 | 6-7 | 6-0 | 5-5 | 9-8 | 8-4 | 7-7 | 6-10 | 11-9 | 10-2 | 9-4 | 8-4 | 13-8 | 11-10 | 10-10 | 9-8 | | |
| Hem-Fir | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 13-11 | 21-11 | 19-10 | 18-1 | 16-2 | | |
| | No.1 & Btr. | 10-6 | 9-6 | 8-11 | 8-0 | 13-10 | 12-5 | 11-4 | 10-1 | 17-6 | 15-2 | 13-10 | 12-4 | 20-3 | 17-7 | 16-0 | 14-4 | | |
| | No.1 | 10-6 | 9-3 | 8-5 | 7-6 | 13-6 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-7 | 10-11 | 9-11 | 8-11 | 15-4 | 13-4 | 12-2 | 10-10 | 17-10 | 15-5 | 14-1 | 12-7 | | |
| | No.3 | 7-7 | 6-7 | 6-0 | 5-5 | 9-8 | 8-4 | 7-7 | 6-10 | 11-9 | 10-2 | 9-4 | 8-4 | 13-8 | 11-10 | 10-10 | 9-8 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-4 | 20-6 | 18-7 | 17-5 | 15-7 | | |
| | No.1 | 9-9 | 8-9 | 8-0 | 7-1 | 12-9 | 11-1 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-1 | 15-8 | 14-3 | 12-9 | | |
| | No.2 | 9-6 | 8-3 | 7-6 | 6-8 | 12-0 | 10-5 | 9-6 | 8-6 | 14-8 | 12-8 | 11-7 | 10-4 | 17-0 | 14-9 | 13-5 | 12-0 | | |
| | No.3 | 7-3 | 6-3 | 5-9 | 5-1 | 9-2 | 7-11 | 7-3 | 6-6 | 11-2 | 9-8 | 8-10 | 7-11 | 13-0 | 11-3 | 10-3 | 9-2 | | |
| Western Woods | Sel. Struc. | 9-9 | 8-10 | 8-1 | 7-3 | 12-10 | 11-2 | 10-3 | 9-2 | 15-10 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 13-0 | | |
| | No.1 | 8-10 | 7-8 | 7-0 | 6-3 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-7 | 11-3 | | |
| | No.2 | 8-10 | 7-8 | 7-0 | 6-3 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-7 | 11-3 | | |
| | No.3 | 6-7 | 5-9 | 5-3 | 4-8 | 8-4 | 7-3 | 6-7 | 5-11 | 10-2 | 8-10 | 8-1 | 7-3 | 11-10 | 10-3 | 9-4 | 8-4 | | |

FLOOR JOISTS

50# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-6

Design Criteria: *Strength* - 50 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|--------|-------|-------|------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 13-11 | 12-7 | 11-11 | 11-0 | 17-9 | 16-1 | 15-2 | 14-1 | 21-7 | 19-7 | 18-5 | 17-1 | 25-5 | 23-1 | 21-9 | 19-5 | | |
| | No.1 & Btr. | 13-8 | 12-5 | 11-8 | 10-10 | 17-5 | 15-10 | 14-11 | 13-5 | 21-2 | 19-1 | 17-5 | 15-7 | 24-7 | 21-4 | 19-5 | 17-5 | | |
| | No.1 | 13-5 | 12-2 | 11-3 | 10-0 | 17-1 | 15-0 | 13-8 | 12-3 | 20-1 | 17-5 | 15-11 | 14-3 | 22-6 | 19-5 | 17-9 | 15-11 | | |
| | No.2 | 13-1 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | 21-4 | 18-5 | 16-10 | 15-1 | | |
| | No.3 | 10-3 | 8-11 | 8-2 | 7-3 | 12-7 | 10-11 | 9-11 | 8-11 | 14-7 | 12-7 | 11-6 | 10-4 | 16-3 | 14-1 | 12-10 | 11-6 | | |
| Douglas Fir-South | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-0 | 14-7 | 13-8 | 12-8 | 19-6 | 17-8 | 16-8 | 15-5 | 22-11 | 20-10 | 19-7 | 18-2 | | |
| | No.1 | 12-3 | 11-1 | 10-6 | 9-8 | 15-7 | 14-2 | 13-2 | 11-10 | 19-0 | 16-9 | 15-3 | 13-8 | 21-7 | 18-9 | 17-1 | 15-3 | | |
| | No.2 | 11-11 | 10-10 | 10-2 | 9-3 | 15-2 | 13-10 | 12-8 | 11-4 | 18-6 | 16-1 | 14-8 | 13-1 | 20-9 | 17-11 | 16-5 | 14-8 | | |
| | No.3 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-3 | 12-4 | 11-3 | 10-1 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Hem-Fir | Sel. Struc. | 13-1 | 11-11 | 11-3 | 10-5 | 16-9 | 15-2 | 14-4 | 13-3 | 20-4 | 18-6 | 17-5 | 16-2 | 24-0 | 21-9 | 20-6 | 18-10 | | |
| | No.1 & Btr. | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 14-0 | 12-10 | 19-11 | 18-1 | 16-8 | 14-11 | 23-6 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 12-10 | 11-8 | 11-0 | 9-11 | 16-5 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 | 22-2 | 19-3 | 17-6 | 15-8 | | |
| | No.2 | 12-3 | 11-1 | 10-4 | 9-3 | 15-7 | 13-10 | 12-8 | 11-4 | 18-6 | 16-1 | 14-8 | 13-1 | 20-9 | 17-11 | 16-5 | 14-8 | | |
| | No.3 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-3 | 12-4 | 11-3 | 10-1 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-3 | 11-1 | 10-6 | 9-9 | 15-7 | 14-2 | 13-4 | 12-5 | 19-0 | 17-3 | 16-3 | 15-1 | 22-4 | 20-4 | 19-2 | 17-9 | | |
| | No.1 | 11-11 | 10-10 | 10-2 | 9-5 | 15-2 | 13-10 | 12-10 | 11-6 | 18-6 | 16-3 | 14-10 | 13-4 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.2 | 11-7 | 10-6 | 9-11 | 8-10 | 14-9 | 13-3 | 12-1 | 10-10 | 17-8 | 15-4 | 14-0 | 12-6 | 19-9 | 17-2 | 15-8 | 14-0 | | |
| | No.3 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Western Woods | Sel. Struc. | 11-11 | 10-10 | 10-2 | 9-6 | 15-2 | 13-10 | 13-0 | 11-8 | 18-6 | 16-6 | 15-1 | 13-6 | 21-4 | 18-5 | 16-10 | 15-1 | | |
| | No.1 | 11-7 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 | 18-5 | 16-0 | 14-7 | 13-1 | | |
| | No.2 | 11-3 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 | 18-5 | 16-0 | 14-7 | 13-1 | | |
| | No.3 | 8-8 | 7-6 | 6-10 | 6-2 | 10-7 | 9-2 | 8-5 | 7-6 | 12-4 | 10-8 | 9-9 | 8-8 | 13-9 | 11-11 | 10-11 | 9-9 | | |

FLOOR JOISTS

50# LIVE LOAD 20# DEAD LOAD L/360

Table FJ-7

Design Criteria: *Strength* - 50 lbs. per sq. ft. live load, plus 20 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 13-11 | 12-7 | 11-11 | 11-0 | 17-9 | 16-1 | 15-2 | 13-11 | 21-7 | 19-7 | 18-0 | 16-1 | 25-5 | 22-1 | 20-2 | 18-0 | | |
| | No.1 & Btr. | 13-8 | 12-5 | 11-5 | 10-2 | 17-5 | 15-3 | 13-11 | 12-5 | 20-5 | 17-8 | 16-1 | 14-5 | 22-9 | 19-9 | 18-0 | 16-1 | | |
| | No.1 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-8 | 11-4 | 18-7 | 16-1 | 14-9 | 13-2 | 20-10 | 18-0 | 16-5 | 14-8 | | |
| | No.2 | 12-6 | 10-10 | 9-10 | 8-10 | 15-3 | 13-2 | 12-0 | 10-9 | 17-8 | 15-4 | 14-0 | 12-6 | 19-9 | 17-1 | 15-7 | 13-11 | | |
| | No.3 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Douglas Fir- South | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-0 | 14-7 | 13-8 | 12-8 | 19-6 | 17-8 | 16-8 | 15-4 | 22-11 | 20-10 | 19-1 | 17-1 | | |
| | No.1 | 12-3 | 10-11 | 10-0 | 8-11 | 15-5 | 13-4 | 12-2 | 10-11 | 17-11 | 15-6 | 14-2 | 12-8 | 20-0 | 17-4 | 15-10 | 14-2 | | |
| | No.2 | 11-11 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-8 | 10-6 | 17-2 | 14-10 | 13-7 | 12-2 | 19-2 | 16-7 | 15-2 | 13-7 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-4 | 9-10 | 9-0 | 8-0 | 13-2 | 11-5 | 10-5 | 9-4 | 14-8 | 12-9 | 11-8 | 10-5 | | |
| Hem-Fir | Sel. Struc. | 13-1 | 11-11 | 11-3 | 10-5 | 16-9 | 15-2 | 14-4 | 13-3 | 20-4 | 18-6 | 17-5 | 15-7 | 24-0 | 21-4 | 19-5 | 17-5 | | |
| | No.1 & Btr. | 12-10 | 11-8 | 10-11 | 9-9 | 16-5 | 14-7 | 13-4 | 11-11 | 19-6 | 16-11 | 15-5 | 13-10 | 21-10 | 18-11 | 17-3 | 15-5 | | |
| | No.1 | 12-10 | 11-3 | 10-3 | 9-2 | 15-10 | 13-9 | 12-6 | 11-3 | 18-5 | 15-11 | 14-6 | 13-0 | 20-6 | 17-9 | 16-3 | 14-6 | | |
| | No.2 | 12-1 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-8 | 10-6 | 17-2 | 14-10 | 13-7 | 12-2 | 19-2 | 16-7 | 15-2 | 13-7 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-4 | 9-10 | 9-0 | 8-0 | 13-2 | 11-5 | 10-5 | 9-4 | 14-8 | 12-9 | 11-8 | 10-5 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 12-3 | 11-1 | 10-6 | 9-9 | 15-7 | 14-2 | 13-4 | 12-5 | 19-0 | 17-3 | 16-3 | 15-0 | 22-4 | 20-4 | 18-9 | 16-9 | | |
| | No.1 | 11-11 | 10-8 | 9-9 | 8-8 | 15-0 | 13-0 | 11-10 | 10-7 | 17-5 | 15-1 | 13-9 | 12-4 | 19-5 | 16-10 | 15-5 | 13-9 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-2 | 12-3 | 11-2 | 10-0 | 16-5 | 14-2 | 12-11 | 11-7 | 18-4 | 15-10 | 14-6 | 12-11 | | |
| | No.3 | 8-10 | 7-8 | 7-0 | 6-3 | 10-9 | 9-4 | 8-6 | 7-7 | 12-6 | 10-10 | 9-10 | 8-10 | 13-11 | 12-1 | 11-0 | 9-10 | | |
| Western Woods | Sel. Struc. | 11-11 | 10-10 | 9-10 | 8-10 | 15-2 | 13-2 | 12-0 | 10-9 | 17-8 | 15-4 | 14-0 | 12-6 | 19-9 | 17-1 | 15-7 | 13-11 | | |
| | No.1 | 10-10 | 9-4 | 8-6 | 7-8 | 13-2 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| | No.2 | 10-10 | 9-4 | 8-6 | 7-8 | 13-2 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 9-10 | 8-6 | 7-9 | 6-11 | 11-5 | 9-10 | 9-0 | 8-1 | 12-9 | 11-0 | 10-1 | 9-0 | | |

FLOOR JOISTS

50# LIVE LOAD 25# DEAD LOAD L/360

Table FJ-8

Design Criteria: *Strength* - 50 lbs. per sq. ft. live load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 13-11 | 12-7 | 11-11 | 11-0 | 17-9 | 16-1 | 15-0 | 13-5 | 21-7 | 19-1 | 17-5 | 15-7 | 24-7 | 21-4 | 19-5 | 17-5 | | |
| | No.1 & Btr. | 13-8 | 12-1 | 11-0 | 9-10 | 17-0 | 14-9 | 13-5 | 12-0 | 19-8 | 17-1 | 15-7 | 13-11 | 22-0 | 19-1 | 17-5 | 15-7 | | |
| | No.1 | 12-8 | 11-0 | 10-0 | 9-0 | 15-6 | 13-5 | 12-3 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | 20-1 | 17-5 | 15-11 | 14-3 | | |
| | No.2 | 12-1 | 10-5 | 9-6 | 8-6 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.3 | 9-2 | 8-0 | 7-3 | 6-6 | 11-3 | 9-9 | 8-11 | 7-11 | 13-0 | 11-3 | 10-4 | 9-3 | 14-7 | 12-7 | 11-6 | 10-4 | | |
| Douglas Fir- South | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-0 | 14-7 | 13-8 | 12-8 | 19-6 | 17-8 | 16-6 | 14-9 | 22-11 | 20-3 | 18-5 | 16-6 | | |
| | No.1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-11 | 12-11 | 11-10 | 10-7 | 17-4 | 15-0 | 13-8 | 12-3 | 19-4 | 16-9 | 15-3 | 13-8 | | |
| | No.2 | 11-8 | 10-2 | 9-3 | 8-3 | 14-4 | 12-5 | 11-4 | 10-1 | 16-7 | 14-4 | 13-1 | 11-9 | 18-6 | 16-1 | 14-8 | 13-1 | | |
| | No.3 | 9-0 | 7-9 | 7-1 | 6-4 | 11-0 | 9-6 | 8-8 | 7-9 | 12-9 | 11-0 | 10-1 | 9-0 | 14-3 | 12-4 | 11-3 | 10-1 | | |
| Hem-Fir | Sel. Struc. | 13-1 | 11-11 | 11-3 | 10-5 | 16-9 | 15-2 | 14-4 | 13-0 | 20-4 | 18-5 | 16-10 | 15-1 | 23-9 | 20-7 | 18-10 | 16-10 | | |
| | No.1 & Btr. | 12-10 | 11-6 | 10-6 | 9-5 | 16-3 | 14-1 | 12-10 | 11-6 | 18-10 | 16-4 | 14-11 | 13-4 | 21-1 | 18-3 | 16-8 | 14-11 | | |
| | No.1 | 12-6 | 10-10 | 9-11 | 8-10 | 15-4 | 13-3 | 12-1 | 10-10 | 17-9 | 15-5 | 14-0 | 12-7 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.2 | 11-8 | 10-2 | 9-3 | 8-3 | 14-4 | 12-5 | 11-4 | 10-1 | 16-7 | 14-4 | 13-1 | 11-9 | 18-6 | 16-1 | 14-8 | 13-1 | | |
| | No.3 | 9-0 | 7-9 | 7-1 | 6-4 | 11-0 | 9-6 | 8-8 | 7-9 | 12-9 | 11-0 | 10-1 | 9-0 | 14-3 | 12-4 | 11-3 | 10-1 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 12-3 | 11-1 | 10-6 | 9-9 | 15-7 | 14-2 | 13-4 | 12-5 | 19-0 | 17-3 | 16-3 | 14-6 | 22-4 | 19-10 | 18-1 | 16-2 | | |
| | No.1 | 11-11 | 10-3 | 9-5 | 8-5 | 14-6 | 12-7 | 11-6 | 10-3 | 16-10 | 14-7 | 13-4 | 11-11 | 18-10 | 16-3 | 14-10 | 13-3 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 | | |
| | No.3 | 8-6 | 7-5 | 6-9 | 6-0 | 10-5 | 9-0 | 8-3 | 7-4 | 12-1 | 10-5 | 9-6 | 8-6 | 13-6 | 11-8 | 10-8 | 9-6 | | |
| Western Woods | Sel. Struc. | 11-11 | 10-5 | 9-6 | 8-6 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.1 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |

FLOOR JOISTS

60# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-9

Design Criteria: *Strength* - 60 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 13-1 | 11-11 | 11-2 | 10-5 | 16-8 | 15-2 | 14-3 | 13-3 | 20-3 | 18-5 | 17-4 | 16-1 | 23-11 | 21-9 | 20-2 | 18-0 | | |
| | No.1 & Btr. | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 13-11 | 12-5 | 19-11 | 17-8 | 16-1 | 14-5 | 22-9 | 19-9 | 18-0 | 16-1 | | |
| | No.1 | 12-7 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-8 | 11-4 | 18-7 | 16-1 | 14-9 | 13-2 | 20-10 | 18-0 | 16-5 | 14-8 | | |
| | No.2 | 12-4 | 10-10 | 9-10 | 8-10 | 15-3 | 13-2 | 12-0 | 10-9 | 17-8 | 15-4 | 14-0 | 12-6 | 19-9 | 17-1 | 15-7 | 13-11 | | |
| Douglas Fir- South | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-1 | 13-8 | 12-11 | 11-11 | 18-4 | 16-8 | 15-8 | 14-7 | 21-7 | 19-7 | 18-5 | 17-1 | | |
| | No.1 | 11-6 | 10-6 | 9-10 | 8-11 | 14-8 | 13-4 | 12-2 | 10-11 | 17-11 | 15-6 | 14-2 | 12-8 | 20-0 | 17-4 | 15-10 | 14-2 | | |
| | No.2 | 11-3 | 10-2 | 9-7 | 8-7 | 14-4 | 12-10 | 11-8 | 10-6 | 17-2 | 14-10 | 13-7 | 12-2 | 19-2 | 16-7 | 15-2 | 13-7 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-4 | 9-10 | 9-0 | 8-0 | 13-2 | 11-5 | 10-5 | 9-4 | 14-8 | 12-9 | 11-8 | 10-5 | | |
| Hem-Fir | Sel. Struc. | 12-4 | 11-3 | 10-7 | 9-10 | 15-9 | 14-4 | 13-6 | 12-6 | 19-2 | 17-5 | 16-5 | 15-2 | 22-7 | 20-6 | 19-3 | 17-5 | | |
| | No.1 & Btr. | 12-1 | 11-0 | 10-4 | 9-7 | 15-5 | 14-0 | 13-2 | 11-11 | 18-9 | 16-11 | 15-5 | 13-10 | 21-10 | 18-11 | 17-3 | 15-5 | | |
| | No.1 | 12-1 | 11-0 | 10-3 | 9-2 | 15-5 | 13-9 | 12-6 | 11-3 | 18-5 | 15-11 | 14-6 | 13-0 | 20-6 | 17-9 | 16-3 | 14-6 | | |
| | No.2 | 11-6 | 10-6 | 9-7 | 8-7 | 14-8 | 12-10 | 11-8 | 10-6 | 17-2 | 14-10 | 13-7 | 12-2 | 19-2 | 16-7 | 15-2 | 13-7 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 11-6 | 10-6 | 9-10 | 9-2 | 14-8 | 13-4 | 12-7 | 11-8 | 17-11 | 16-3 | 15-3 | 14-2 | 21-1 | 19-2 | 18-0 | 16-9 | | |
| | No.1 | 11-3 | 10-2 | 9-7 | 8-8 | 14-4 | 13-0 | 11-10 | 10-7 | 17-5 | 15-1 | 13-9 | 12-4 | 19-5 | 16-10 | 15-5 | 13-9 | | |
| | No.2 | 10-11 | 9-11 | 9-2 | 8-2 | 13-11 | 12-3 | 11-2 | 10-0 | 16-5 | 14-2 | 12-11 | 11-7 | 18-4 | 15-10 | 14-6 | 12-11 | | |
| | No.3 | 8-10 | 7-8 | 7-0 | 6-3 | 10-9 | 9-4 | 8-6 | 7-7 | 12-6 | 10-10 | 9-10 | 8-10 | 13-11 | 12-1 | 11-0 | 9-10 | | |
| Western Woods | Sel. Struc. | 11-3 | 10-2 | 9-7 | 8-10 | 14-4 | 13-0 | 12-0 | 10-9 | 17-5 | 15-4 | 14-0 | 12-6 | 19-9 | 17-1 | 15-7 | 13-11 | | |
| | No.1 | 10-10 | 9-4 | 8-6 | 7-8 | 13-2 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| | No.2 | 10-7 | 9-4 | 8-6 | 7-8 | 13-2 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 9-10 | 8-6 | 7-9 | 6-11 | 11-5 | 9-10 | 9-0 | 8-1 | 12-9 | 11-0 | 10-1 | 9-0 | | |

FLOOR JOISTS

60# LIVE LOAD 20# DEAD LOAD L/360

Table FJ-10

Design Criteria: *Strength* - 60 lbs. per sq. ft. live load, plus 20 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 13-1 | 11-11 | 11-2 | 10-5 | 16-8 | 15-2 | 14-3 | 13-0 | 20-3 | 18-5 | 16-10 | 15-1 | 23-10 | 20-8 | 18-10 | 16-10 | | |
| | No.1 & Btr. | 12-10 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | 21-4 | 18-5 | 16-10 | 15-1 | | |
| | No.1 | 12-4 | 10-8 | 9-9 | 8-8 | 15-0 | 13-0 | 11-10 | 10-7 | 17-5 | 15-1 | 13-9 | 12-4 | 19-5 | 16-10 | 15-5 | 13-9 | | |
| | No.2 | 11-8 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 | 18-5 | 16-0 | 14-7 | 13-1 | | |
| Douglas Fir- South | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-1 | 13-8 | 12-11 | 11-11 | 18-4 | 16-8 | 15-8 | 14-4 | 21-7 | 19-7 | 17-10 | 16-0 | | |
| | No.1 | 11-6 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-3 | 16-9 | 14-6 | 13-3 | 11-10 | 18-9 | 16-2 | 14-10 | 13-3 | | |
| | No.2 | 11-3 | 9-10 | 9-0 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-1 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.3 | 8-8 | 7-6 | 6-10 | 6-2 | 10-7 | 9-2 | 8-5 | 7-6 | 12-4 | 10-8 | 9-9 | 8-8 | 13-9 | 11-11 | 10-11 | 9-9 | | |
| Hem-Fir | Sel. Struc. | 12-4 | 11-3 | 10-7 | 9-10 | 15-9 | 14-4 | 13-6 | 12-6 | 19-2 | 17-5 | 16-3 | 14-7 | 22-7 | 19-11 | 18-2 | 16-3 | | |
| | No.1 & Btr. | 12-1 | 11-0 | 10-2 | 9-1 | 15-5 | 13-8 | 12-5 | 11-2 | 18-3 | 15-10 | 14-5 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| | No.1 | 12-1 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-9 | 10-6 | 17-2 | 14-11 | 13-7 | 12-2 | 19-3 | 16-8 | 15-2 | 13-7 | | |
| | No.2 | 11-4 | 9-10 | 9-0 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-1 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| Spruce- Pine-Fir South | Sel. Struc. | 11-6 | 10-6 | 9-10 | 9-2 | 14-8 | 13-4 | 12-7 | 11-8 | 17-11 | 16-3 | 15-3 | 14-0 | 21-1 | 19-2 | 17-6 | 15-8 | | |
| | No.1 | 11-3 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-11 | 11-6 | 18-2 | 15-9 | 14-5 | 12-10 | | |
| | No.2 | 10-10 | 9-4 | 8-7 | 7-8 | 13-3 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-2 | 14-10 | 13-6 | 12-1 | | |
| | No.3 | 8-3 | 7-2 | 6-6 | 5-10 | 10-1 | 8-9 | 8-0 | 7-1 | 11-8 | 10-1 | 9-3 | 8-3 | 13-1 | 11-4 | 10-4 | 9-3 | | |
| Western Woods | Sel. Struc. | 11-3 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 | 18-5 | 16-0 | 14-7 | 13-1 | | |
| | No.1 | 10-1 | 8-9 | 8-0 | 7-2 | 12-4 | 10-8 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-1 | 16-0 | 13-10 | 12-8 | 11-4 | | |
| | No.2 | 10-1 | 8-9 | 8-0 | 7-2 | 12-4 | 10-8 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-1 | 16-0 | 13-10 | 12-8 | 11-4 | | |
| | No.3 | 7-6 | 6-6 | 5-11 | 5-4 | 9-2 | 8-0 | 7-3 | 6-6 | 10-8 | 9-3 | 8-5 | 7-6 | 11-11 | 10-4 | 9-5 | 8-5 | | |

FLOOR JOISTS

60# LIVE LOAD 25# DEAD LOAD L/360

Table FJ-11

Design Criteria: Strength - 60 lbs. per sq. ft. live load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 13-1 | 11-11 | 11-2 | 10-4 | 16-8 | 15-2 | 14-1 | 12-7 | 20-3 | 17-11 | 16-4 | 14-8 | 23-1 | 20-0 | 18-3 | 16-4 | | |
| | No.1 & Btr. | 12-10 | 11-4 | 10-4 | 9-3 | 16-0 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | 20-8 | 17-11 | 16-4 | 14-7 | | |
| | No.1 | 11-11 | 10-4 | 9-5 | 8-5 | 14-7 | 12-7 | 11-6 | 10-4 | 16-11 | 14-8 | 13-4 | 11-11 | 18-11 | 16-4 | 14-11 | 13-4 | | |
| | No.2 | 11-4 | 9-10 | 8-11 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-0 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.3 | 8-8 | 7-6 | 6-10 | 6-1 | 10-7 | 9-2 | 8-4 | 7-6 | 12-3 | 10-7 | 9-8 | 8-8 | 13-8 | 11-10 | 10-10 | 9-8 | | |
| Douglas Fir-South | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-1 | 13-8 | 12-11 | 11-11 | 18-4 | 16-8 | 15-6 | 13-11 | 21-7 | 19-0 | 17-4 | 15-6 | | |
| | No.1 | 11-6 | 9-11 | 9-1 | 8-1 | 14-0 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.2 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 6-0 | 10-4 | 8-11 | 8-2 | 7-3 | 11-11 | 10-4 | 9-5 | 8-5 | 13-4 | 11-7 | 10-7 | 9-5 | | |
| Hem-Fir | Sel. Struc. | 12-4 | 11-3 | 10-7 | 9-10 | 15-9 | 14-4 | 13-6 | 12-2 | 19-2 | 17-4 | 15-10 | 14-2 | 22-4 | 19-4 | 17-8 | 15-10 | | |
| | No.1 & Btr. | 12-1 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-9 | 15-4 | 14-0 | 12-6 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.1 | 11-9 | 10-2 | 9-4 | 8-4 | 14-5 | 12-5 | 11-4 | 10-2 | 16-8 | 14-5 | 13-2 | 11-10 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| | No.2 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 6-0 | 10-4 | 8-11 | 8-2 | 7-3 | 11-11 | 10-4 | 9-5 | 8-5 | 13-4 | 11-7 | 10-7 | 9-5 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-6 | 10-6 | 9-10 | 9-2 | 14-8 | 13-4 | 12-7 | 11-8 | 17-11 | 16-3 | 15-3 | 13-7 | 21-1 | 18-8 | 17-0 | 15-3 | | |
| | No.1 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 14-0 | 12-6 | | |
| | No.2 | 10-6 | 9-1 | 8-4 | 7-5 | 12-10 | 11-1 | 10-2 | 9-1 | 14-10 | 12-11 | 11-9 | 10-6 | 16-7 | 14-5 | 13-2 | 11-9 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-6 | 7-9 | 6-11 | 11-4 | 9-10 | 9-0 | 8-0 | 12-8 | 11-0 | 10-0 | 8-11 | | |
| Western Woods | Sel. Struc. | 11-3 | 9-10 | 8-11 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-0 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.1 | 9-10 | 8-6 | 7-9 | 6-11 | 12-0 | 10-4 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | 15-6 | 13-5 | 12-3 | 11-0 | | |
| | No.2 | 9-10 | 8-6 | 7-9 | 6-11 | 12-0 | 10-4 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | 15-6 | 13-5 | 12-3 | 11-0 | | |
| | No.3 | 7-4 | 6-4 | 5-9 | 5-2 | 8-11 | 7-9 | 7-1 | 6-4 | 10-4 | 9-0 | 8-2 | 7-4 | 11-7 | 10-0 | 9-2 | 8-2 | | |

FLOOR JOISTS

75# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-12

Design Criteria: Strength - 75 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 12-2 | 11-0 | 10-5 | 9-8 | 15-6 | 14-1 | 13-3 | 12-3 | 18-10 | 17-1 | 16-1 | 14-8 | 22-2 | 20-0 | 18-3 | 16-4 | | |
| | No.1 & Btr. | 11-11 | 10-10 | 10-2 | 9-3 | 15-2 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | 20-8 | 17-11 | 16-4 | 14-7 | | |
| | No.1 | 11-8 | 10-4 | 9-5 | 8-5 | 14-7 | 12-7 | 11-6 | 10-4 | 16-11 | 14-8 | 13-4 | 11-11 | 18-11 | 16-4 | 14-11 | 13-4 | | |
| | No.2 | 11-4 | 9-10 | 8-11 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-0 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.3 | 8-8 | 7-6 | 6-10 | 6-1 | 10-7 | 9-2 | 8-4 | 7-6 | 12-3 | 10-7 | 9-8 | 8-8 | 13-8 | 11-10 | 10-10 | 9-8 | | |
| Douglas Fir-South | Sel. Struc. | 11-0 | 10-0 | 9-4 | 8-8 | 14-0 | 12-8 | 11-11 | 11-1 | 17-0 | 15-5 | 14-7 | 13-6 | 20-0 | 18-2 | 17-2 | 15-6 | | |
| | No.1 | 10-8 | 9-9 | 9-1 | 8-1 | 13-8 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.2 | 10-5 | 9-6 | 8-8 | 7-9 | 13-3 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 6-0 | 10-4 | 8-11 | 8-2 | 7-3 | 11-11 | 10-4 | 9-5 | 8-5 | 13-4 | 11-7 | 10-7 | 9-5 | | |
| Hem-Fir | Sel. Struc. | 11-6 | 10-5 | 9-10 | 9-1 | 14-7 | 13-3 | 12-6 | 11-7 | 17-9 | 16-2 | 15-2 | 14-1 | 20-11 | 19-0 | 17-8 | 15-10 | | |
| | No.1 & Btr. | 11-3 | 10-2 | 9-7 | 8-10 | 14-4 | 13-0 | 12-1 | 10-10 | 17-5 | 15-4 | 14-0 | 12-6 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.1 | 11-3 | 10-2 | 9-4 | 8-4 | 14-4 | 12-5 | 11-4 | 10-2 | 16-8 | 14-5 | 13-2 | 11-10 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| | No.2 | 10-8 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 6-0 | 10-4 | 8-11 | 8-2 | 7-3 | 11-11 | 10-4 | 9-5 | 8-5 | 13-4 | 11-7 | 10-7 | 9-5 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-8 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-10 | 16-7 | 15-1 | 14-2 | 13-2 | 19-7 | 17-9 | 16-9 | 15-3 | | |
| | No.1 | 10-5 | 9-6 | 8-10 | 7-11 | 13-3 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 14-0 | 12-6 | | |
| | No.2 | 10-1 | 9-1 | 8-4 | 7-5 | 12-10 | 11-1 | 10-2 | 9-1 | 14-10 | 12-11 | 11-9 | 10-6 | 16-7 | 14-5 | 13-2 | 11-9 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-6 | 7-9 | 6-11 | 11-4 | 9-10 | 9-0 | 8-0 | 12-8 | 11-0 | 10-0 | 8-11 | | |
| Western Woods | Sel. Struc. | 10-5 | 9-6 | 8-11 | 8-0 | 13-3 | 12-0 | 10-11 | 9-9 | 16-0 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.1 | 9-10 | 8-6 | 7-9 | 6-11 | 12-0 | 10-4 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | 15-6 | 13-5 | 12-3 | 11-0 | | |
| | No.2 | 9-10 | 8-6 | 7-9 | 6-11 | 12-0 | 10-4 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | 15-6 | 13-5 | 12-3 | 11-0 | | |
| | No.3 | 7-4 | 6-4 | 5-9 | 5-2 | 8-11 | 7-9 | 7-1 | 6-4 | 10-4 | 9-0 | 8-2 | 7-4 | 11-7 | 10-0 | 9-2 | 8-2 | | |

FLOOR JOISTS

75# LIVE LOAD 20# DEAD LOAD L/360

Table FJ-13

Design Criteria: Strength - 75 lbs. per sq. ft. live load, plus 20 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 12-2 | 11-0 | 10-5 | 9-8 | 15-6 | 14-1 | 13-3 | 11-11 | 18-10 | 16-11 | 15-6 | 13-10 | 21-10 | 18-11 | 17-3 | 15-6 | | |
| | No.1 & Btr. | 11-11 | 10-8 | 9-9 | 8-9 | 15-1 | 13-1 | 11-11 | 10-8 | 17-6 | 15-2 | 13-10 | 12-5 | 19-7 | 16-11 | 15-6 | 13-10 | | |
| | No.1 | 11-3 | 9-9 | 8-11 | 8-0 | 13-9 | 11-11 | 10-11 | 9-9 | 16-0 | 13-10 | 12-8 | 11-4 | 17-10 | 15-6 | 14-1 | 12-8 | | |
| | No.2 | 10-8 | 9-3 | 8-6 | 7-7 | 13-1 | 11-4 | 10-4 | 9-3 | 15-2 | 13-2 | 12-0 | 10-9 | 16-11 | 14-8 | 13-5 | 12-0 | | |
| | No.3 | 8-2 | 7-1 | 6-6 | 5-9 | 10-0 | 8-8 | 7-11 | 7-1 | 11-7 | 10-0 | 9-2 | 8-2 | 12-11 | 11-2 | 10-3 | 9-2 | | |
| Douglas Fir-South | Sel. Struc. | 11-0 | 10-0 | 9-4 | 8-8 | 14-0 | 12-8 | 11-11 | 11-1 | 17-0 | 15-5 | 14-7 | 13-2 | 20-0 | 18-0 | 16-5 | 14-8 | | |
| | No.1 | 10-8 | 9-5 | 8-7 | 7-8 | 13-3 | 11-6 | 10-6 | 9-4 | 15-4 | 13-4 | 12-2 | 10-10 | 17-2 | 14-10 | 13-7 | 12-2 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-4 | 12-8 | 11-0 | 10-1 | 9-0 | 14-9 | 12-9 | 11-8 | 10-5 | 16-6 | 14-3 | 13-0 | 11-8 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-5 | 7-8 | 6-11 | 11-4 | 9-9 | 8-11 | 8-0 | 12-8 | 10-11 | 10-0 | 8-11 | | |
| Hem-Fir | Sel. Struc. | 11-6 | 10-5 | 9-10 | 9-1 | 14-7 | 13-3 | 12-6 | 11-6 | 17-9 | 16-2 | 14-11 | 13-4 | 20-11 | 18-4 | 16-8 | 14-11 | | |
| | No.1 & Btr. | 11-3 | 10-2 | 9-4 | 8-4 | 14-4 | 12-6 | 11-5 | 10-3 | 16-9 | 14-6 | 13-3 | 11-10 | 18-9 | 16-3 | 14-10 | 13-3 | | |
| | No.1 | 11-2 | 9-8 | 8-10 | 7-11 | 13-7 | 11-9 | 10-9 | 9-7 | 15-9 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-4 | 12-8 | 11-0 | 10-1 | 9-0 | 14-9 | 12-9 | 11-8 | 10-5 | 16-6 | 14-3 | 13-0 | 11-8 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-5 | 7-8 | 6-11 | 11-4 | 9-9 | 8-11 | 8-0 | 12-8 | 10-11 | 10-0 | 8-11 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-8 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-10 | 16-7 | 15-1 | 14-2 | 12-11 | 19-7 | 17-8 | 16-1 | 14-5 | | |
| | No.1 | 10-5 | 9-2 | 8-4 | 7-6 | 12-11 | 11-2 | 10-2 | 9-1 | 14-11 | 12-11 | 11-10 | 10-7 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-1 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 | | |
| | No.3 | 7-7 | 6-7 | 6-0 | 5-4 | 9-3 | 8-0 | 7-4 | 6-6 | 10-9 | 9-3 | 8-6 | 7-7 | 12-0 | 10-4 | 9-6 | 8-6 | | |
| Western Woods | Sel. Struc. | 10-5 | 9-3 | 8-6 | 7-7 | 13-1 | 11-4 | 10-4 | 9-3 | 15-2 | 13-2 | 12-0 | 10-9 | 16-11 | 14-8 | 13-5 | 12-0 | | |
| | No.1 | 9-3 | 8-0 | 7-4 | 6-7 | 11-4 | 9-10 | 8-11 | 8-0 | 13-2 | 11-4 | 10-5 | 9-3 | 14-8 | 12-8 | 11-7 | 10-4 | | |
| | No.2 | 9-3 | 8-0 | 7-4 | 6-7 | 11-4 | 9-10 | 8-11 | 8-0 | 13-2 | 11-4 | 10-5 | 9-3 | 14-8 | 12-8 | 11-7 | 10-4 | | |
| | No.3 | 6-11 | 6-0 | 5-6 | 4-11 | 8-5 | 7-4 | 6-8 | 6-0 | 9-9 | 8-6 | 7-9 | 6-11 | 10-11 | 9-6 | 8-8 | 7-9 | | |

FLOOR JOISTS

75# LIVE LOAD 25# DEAD LOAD L/360

Table FJ-14

Design Criteria: Strength - 75 lbs. per sq. ft. live load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 12-2 | 11-0 | 10-5 | 9-6 | 15-6 | 14-1 | 13-0 | 11-8 | 18-10 | 16-6 | 15-1 | 13-6 | 21-4 | 18-5 | 16-10 | 15-1 | | |
| | No.1 & Btr. | 11-11 | 10-5 | 9-6 | 8-6 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.1 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-5 | 7-8 | 6-11 | 11-3 | 9-9 | 8-11 | 8-0 | 12-7 | 10-11 | 10-0 | 8-11 | | |
| Douglas Fir-South | Sel. Struc. | 11-0 | 10-0 | 9-4 | 8-8 | 14-0 | 12-8 | 11-11 | 11-0 | 17-0 | 15-5 | 14-4 | 12-10 | 20-0 | 17-6 | 16-0 | 14-4 | | |
| | No.1 | 10-7 | 9-2 | 8-4 | 7-6 | 12-11 | 11-2 | 10-3 | 9-2 | 15-0 | 13-0 | 11-10 | 10-7 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Hem-Fir | Sel. Struc. | 11-6 | 10-5 | 9-10 | 9-1 | 14-7 | 13-3 | 12-6 | 11-3 | 17-9 | 16-0 | 14-7 | 13-0 | 20-7 | 17-10 | 16-3 | 14-7 | | |
| | No.1 & Btr. | 11-3 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-2 | 10-0 | 16-4 | 14-2 | 12-11 | 11-7 | 18-3 | 15-10 | 14-5 | 12-11 | | |
| | No.1 | 10-10 | 9-5 | 8-7 | 7-8 | 13-3 | 11-6 | 10-6 | 9-5 | 15-5 | 13-4 | 12-2 | 10-10 | 17-2 | 14-11 | 13-7 | 12-2 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-8 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-10 | 16-7 | 15-1 | 14-0 | 12-7 | 19-7 | 17-2 | 15-8 | 14-0 | | |
| | No.1 | 10-3 | 8-11 | 8-2 | 7-3 | 12-7 | 10-11 | 9-11 | 8-11 | 14-7 | 12-7 | 11-6 | 10-4 | 16-3 | 14-1 | 12-10 | 11-6 | | |
| | No.2 | 9-8 | 8-5 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-9 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-0 | 7-10 | 7-1 | 6-4 | 10-5 | 9-1 | 8-3 | 7-5 | 11-8 | 10-1 | 9-3 | 8-3 | | |
| Western Woods | Sel. Struc. | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.1 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.2 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.3 | 6-9 | 5-10 | 5-4 | 4-9 | 8-3 | 7-1 | 6-6 | 5-10 | 9-6 | 8-3 | 7-6 | 6-9 | 10-8 | 9-3 | 8-5 | 7-6 | | |

FLOOR JOISTS

80# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-15

Design Criteria: Strength - 80 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 11-11 | 10-10 | 10-2 | 9-5 | 15-2 | 13-9 | 12-11 | 12-0 | 18-5 | 16-9 | 15-9 | 14-3 | 21-9 | 19-5 | 17-9 | 15-11 | | |
| | No.1 & Btr. | 11-8 | 10-7 | 10-0 | 9-0 | 14-11 | 13-5 | 12-3 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | 20-1 | 17-5 | 15-11 | 14-3 | | |
| | No.1 | 11-5 | 10-0 | 9-2 | 8-2 | 14-2 | 12-3 | 11-2 | 10-0 | 16-5 | 14-3 | 13-0 | 11-7 | 18-4 | 15-11 | 14-6 | 13-0 | | |
| | No.2 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| No.3 | 8-5 | 7-3 | 6-8 | 5-11 | 10-3 | 8-11 | 8-1 | 7-3 | 11-11 | 10-4 | 9-5 | 8-5 | 13-3 | 11-6 | 10-6 | 9-5 | | | |
| Douglas Fir- South | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-10 | 16-8 | 15-2 | 14-3 | 13-3 | 19-7 | 17-10 | 16-9 | 15-1 | | |
| | No.1 | 10-6 | 9-6 | 8-10 | 7-11 | 13-4 | 11-10 | 10-9 | 9-8 | 15-9 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| | No.2 | 10-2 | 9-3 | 8-5 | 7-7 | 13-0 | 11-4 | 10-4 | 9-3 | 15-2 | 13-1 | 12-0 | 10-8 | 16-11 | 14-8 | 13-4 | 12-0 | | |
| | No.3 | 8-2 | 7-1 | 6-6 | 5-10 | 10-0 | 8-8 | 7-11 | 7-1 | 11-7 | 10-1 | 9-2 | 8-3 | 13-0 | 11-3 | 10-3 | 9-2 | | |
| Hem-Fir | Sel. Struc. | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-3 | 11-4 | 17-5 | 15-10 | 14-11 | 13-9 | 20-6 | 18-8 | 17-2 | 15-4 | | |
| | No.1 & Btr. | 11-0 | 10-0 | 9-5 | 8-7 | 14-0 | 12-9 | 11-9 | 10-6 | 17-0 | 14-11 | 13-7 | 12-2 | 19-3 | 16-8 | 15-3 | 13-7 | | |
| | No.1 | 11-0 | 9-11 | 9-1 | 8-1 | 14-0 | 12-1 | 11-1 | 9-11 | 16-3 | 14-0 | 12-10 | 11-6 | 18-1 | 15-8 | 14-4 | 12-10 | | |
| | No.2 | 10-6 | 9-3 | 8-5 | 7-7 | 13-1 | 11-4 | 10-4 | 9-3 | 15-2 | 13-1 | 12-0 | 10-8 | 16-11 | 14-8 | 13-4 | 12-0 | | |
| No.3 | 8-2 | 7-1 | 6-6 | 5-10 | 10-0 | 8-8 | 7-11 | 7-1 | 11-7 | 10-1 | 9-2 | 8-3 | 13-0 | 11-3 | 10-3 | 9-2 | | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 10-6 | 9-6 | 8-11 | 8-4 | 13-4 | 12-2 | 11-5 | 10-7 | 16-3 | 14-9 | 13-11 | 12-11 | 19-2 | 17-5 | 16-4 | 14-9 | | |
| | No.1 | 10-2 | 9-3 | 8-7 | 7-8 | 13-0 | 11-6 | 10-6 | 9-4 | 15-4 | 13-4 | 12-2 | 10-10 | 17-2 | 14-10 | 13-7 | 12-2 | | |
| | No.2 | 9-11 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-5 | 12-6 | 11-5 | 10-3 | 16-2 | 14-0 | 12-9 | 11-5 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Western Woods | Sel. Struc. | 10-2 | 9-3 | 8-8 | 7-9 | 13-0 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.1 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| | No.2 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| | No.3 | 7-1 | 6-2 | 5-7 | 5-0 | 8-8 | 7-6 | 6-10 | 6-2 | 10-1 | 8-8 | 7-11 | 7-1 | 11-3 | 9-9 | 8-11 | 7-11 | | |

FLOOR JOISTS

80# LIVE LOAD 20# DEAD LOAD L/360

Table FJ-16

Design Criteria: Strength - 80 lbs. per sq. ft. live load, plus 20 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 11-11 | 10-10 | 10-2 | 9-5 | 15-2 | 13-9 | 12-11 | 11-8 | 18-5 | 16-6 | 15-1 | 13-6 | 21-4 | 18-5 | 16-10 | 15-1 | | |
| | No.1 & Btr. | 11-8 | 10-5 | 9-6 | 8-6 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.1 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-5 | 7-8 | 6-11 | 11-3 | 9-9 | 8-11 | 8-0 | 12-7 | 10-11 | 10-0 | 8-11 | | | |
| Douglas Fir- South | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-10 | 16-8 | 15-2 | 14-3 | 12-10 | 19-7 | 17-6 | 16-0 | 14-4 | | |
| | No.1 | 10-6 | 9-2 | 8-4 | 7-6 | 12-11 | 11-2 | 10-3 | 9-2 | 15-0 | 13-0 | 11-10 | 10-7 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Hem-Fir | Sel. Struc. | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-3 | 11-3 | 17-5 | 15-10 | 14-7 | 13-0 | 20-6 | 17-10 | 16-3 | 14-7 | | |
| | No.1 & Btr. | 11-0 | 10-0 | 9-1 | 8-2 | 14-0 | 12-2 | 11-2 | 10-0 | 16-4 | 14-2 | 12-11 | 11-7 | 18-3 | 15-10 | 14-5 | 12-11 | | |
| | No.1 | 10-10 | 9-5 | 8-7 | 7-8 | 13-3 | 11-6 | 10-6 | 9-5 | 15-5 | 13-4 | 12-2 | 10-10 | 17-2 | 14-11 | 13-7 | 12-2 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 10-6 | 9-6 | 8-11 | 8-4 | 13-4 | 12-2 | 11-5 | 10-7 | 16-3 | 14-9 | 13-11 | 12-7 | 19-2 | 17-2 | 15-8 | 14-0 | | |
| | No.1 | 10-2 | 8-11 | 8-2 | 7-3 | 12-7 | 10-11 | 9-11 | 8-11 | 14-7 | 12-7 | 11-6 | 10-4 | 16-3 | 14-1 | 12-10 | 11-6 | | |
| | No.2 | 9-8 | 8-5 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-9 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-0 | 7-10 | 7-1 | 6-4 | 10-5 | 9-1 | 8-3 | 7-5 | 11-8 | 10-1 | 9-3 | 8-3 | | |
| Western Woods | Sel. Struc. | 10-2 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.1 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.2 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.3 | 6-9 | 5-10 | 5-4 | 4-9 | 8-3 | 7-1 | 6-6 | 5-10 | 9-6 | 8-3 | 7-6 | 6-9 | 10-8 | 9-3 | 8-5 | 7-6 | | |

FLOOR JOISTS

80# LIVE LOAD 25# DEAD LOAD L/360

Table FJ-17

Design Criteria: *Strength* - 80 lbs. per sq. ft. live load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------------|-------|-------------|-------------|-------------|-------|-------------|--------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 11-11 | 10-10 | 10-2 | 9-4 | 15-2 | 13-9 | 12-8 | 11-4 | 18-5 | 16-1 | 14-9 | 13-2 | 20-10 | 18-0 | 16-5 | 14-8 | | |
| | No.1 & Btr. | 11-8 | 10-2 | 9-4 | 8-4 | 14-4 | 12-5 | 11-4 | 10-2 | 16-8 | 14-5 | 13-2 | 11-9 | 18-7 | 16-1 | 14-8 | 13-2 | | |
| | No.1 | 10-9 | 9-4 | 8-6 | 7-7 | 13-1 | 11-4 | 10-4 | 9-3 | 15-2 | 13-2 | 12-0 | 10-9 | 17-0 | 14-8 | 13-5 | 12-0 | | |
| | No.2 | 10-2 | 8-10 | 8-1 | 7-2 | 12-5 | 10-9 | 9-10 | 8-10 | 14-5 | 12-6 | 11-5 | 10-2 | 16-1 | 13-11 | 12-9 | 11-5 | | |
| Douglas Fir- South | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-9 | 16-8 | 15-2 | 14-0 | 12-6 | 19-7 | 17-1 | 15-7 | 13-11 | | |
| | No.1 | 10-4 | 8-11 | 8-2 | 7-4 | 12-7 | 10-11 | 10-0 | 8-11 | 14-7 | 12-8 | 11-7 | 10-4 | 16-4 | 14-2 | 12-11 | 11-7 | | |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-1 | 10-6 | 9-7 | 8-7 | 14-0 | 12-2 | 11-1 | 9-11 | 15-8 | 13-7 | 12-5 | 11-1 | | |
| | No.3 | 7-7 | 6-7 | 6-0 | 5-4 | 9-3 | 8-0 | 7-4 | 6-7 | 10-9 | 9-4 | 8-6 | 7-7 | 12-0 | 10-5 | 9-6 | 8-6 | | |
| Hem-Fir | Sel. Struc. | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-3 | 11-0 | 17-5 | 15-7 | 14-3 | 12-9 | 20-1 | 17-5 | 15-11 | 14-3 | | |
| | No.1 & Btr. | 11-0 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-10 | 12-7 | 11-3 | 17-10 | 15-5 | 14-1 | 12-7 | | |
| | No.1 | 10-7 | 9-2 | 8-5 | 7-6 | 12-11 | 11-3 | 10-3 | 9-2 | 15-0 | 13-0 | 11-10 | 10-7 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-1 | 10-6 | 9-7 | 8-7 | 14-0 | 12-2 | 11-1 | 9-11 | 15-8 | 13-7 | 12-5 | 11-1 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 10-6 | 9-6 | 8-11 | 8-4 | 13-4 | 12-2 | 11-5 | 10-7 | 16-3 | 14-9 | 13-8 | 12-3 | 19-2 | 16-9 | 15-4 | 13-8 | | |
| | No.1 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-3 | 12-4 | 11-3 | 10-1 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| | No.2 | 9-5 | 8-2 | 7-6 | 6-8 | 11-6 | 10-0 | 9-1 | 8-2 | 13-5 | 11-7 | 10-7 | 9-6 | 14-11 | 12-11 | 11-10 | 10-7 | | |
| | No.3 | 7-2 | 6-3 | 5-8 | 5-1 | 8-10 | 7-7 | 6-11 | 6-3 | 10-2 | 8-10 | 8-1 | 7-3 | 11-5 | 9-10 | 9-0 | 8-1 | | |
| Western Woods | Sel. Struc. | 10-2 | 8-10 | 8-1 | 7-2 | 12-5 | 10-9 | 9-10 | 8-10 | 14-5 | 12-6 | 11-5 | 10-2 | 16-1 | 13-11 | 12-9 | 11-5 | | |
| | No.1 | 8-10 | 7-8 | 7-0 | 6-3 | 10-9 | 9-4 | 8-6 | 7-7 | 12-6 | 10-10 | 9-10 | 8-10 | 13-11 | 12-1 | 11-0 | 9-10 | | |
| | No.2 | 8-10 | 7-8 | 7-0 | 6-3 | 10-9 | 9-4 | 8-6 | 7-7 | 12-6 | 10-10 | 9-10 | 8-10 | 13-11 | 12-1 | 11-0 | 9-10 | | |
| | No.3 | 6-7 | 5-8 | 5-2 | 4-8 | 8-0 | 6-11 | 6-4 | 5-8 | 9-4 | 8-1 | 7-4 | 6-7 | 10-5 | 9-0 | 8-3 | 7-4 | | |

FLOOR JOISTS

100# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-18

Design Criteria: *Strength* - 100 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|------|------------------------|------|-------|-------|--------|-------------|-------|-------|--------------|-------------|-------|-------------|--------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-9 | 14-1 | 12-9 | 12-0 | 11-1 | 17-1 | 15-7 | 14-5 | 12-10 | 20-2 | 17-7 | 16-1 | 14-4 | | |
| | No.1 & Btr. | 10-10 | 9-10 | 9-1 | 8-1 | 13-10 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.1 | 10-6 | 9-1 | 8-3 | 7-5 | 12-10 | 11-1 | 10-1 | 9-1 | 14-10 | 12-10 | 11-9 | 10-6 | 16-7 | 14-4 | 13-1 | 11-9 | | |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 10-0 | 15-9 | 13-8 | 12-5 | 11-2 | | |
| Douglas Fir- South | Sel. Struc. | 10-0 | 9-1 | 8-6 | 7-11 | 12-8 | 11-7 | 10-10 | 10-1 | 15-5 | 14-0 | 13-3 | 12-2 | 18-2 | 16-6 | 15-3 | 13-8 | | |
| | No.1 | 9-9 | 8-9 | 8-0 | 7-2 | 12-4 | 10-8 | 9-9 | 8-9 | 14-3 | 12-4 | 11-3 | 10-1 | 15-11 | 13-10 | 12-7 | 11-3 | | |
| | No.2 | 9-6 | 8-4 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-8 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-1 | 7-10 | 7-2 | 6-5 | 10-6 | 9-1 | 8-4 | 7-5 | 11-9 | 10-2 | 9-3 | 8-4 | | |
| Hem-Fir | Sel. Struc. | 10-5 | 9-6 | 8-11 | 8-3 | 13-3 | 12-1 | 11-4 | 10-7 | 16-2 | 14-8 | 13-10 | 12-5 | 19-0 | 17-0 | 15-6 | 13-11 | | |
| | No.1 & Btr. | 10-2 | 9-3 | 8-8 | 7-9 | 13-0 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.1 | 10-2 | 9-0 | 8-2 | 7-4 | 12-8 | 10-11 | 10-0 | 8-11 | 14-8 | 12-8 | 11-7 | 10-4 | 16-5 | 14-2 | 12-11 | 11-7 | | |
| | No.2 | 9-8 | 8-4 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-8 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-9 | 12-5 | 11-3 | 10-7 | 9-10 | 15-1 | 13-8 | 12-11 | 12-0 | 17-9 | 16-2 | 14-11 | 13-5 | | |
| | No.1 | 9-6 | 8-6 | 7-9 | 6-11 | 12-0 | 10-4 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | 15-6 | 13-5 | 12-3 | 11-0 | | |
| | No.2 | 9-2 | 8-0 | 7-4 | 6-6 | 11-3 | 9-9 | 8-11 | 8-0 | 13-1 | 11-4 | 10-4 | 9-3 | 14-7 | 12-8 | 11-7 | 10-4 | | |
| | No.3 | 7-0 | 6-1 | 5-7 | 5-0 | 8-7 | 7-5 | 6-9 | 6-1 | 10-0 | 8-8 | 7-11 | 7-1 | 11-2 | 9-8 | 8-10 | 7-10 | | |
| Western Woods | Sel. Struc. | 9-6 | 8-7 | 7-10 | 7-0 | 12-1 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 10-0 | 15-9 | 13-8 | 12-5 | 11-2 | | |
| | No.1 | 8-7 | 7-6 | 6-10 | 6-1 | 10-6 | 9-1 | 8-4 | 7-5 | 12-2 | 10-7 | 9-8 | 8-8 | 13-8 | 11-10 | 10-9 | 9-8 | | |
| | No.2 | 8-7 | 7-6 | 6-10 | 6-1 | 10-6 | 9-1 | 8-4 | 7-5 | 12-2 | 10-7 | 9-8 | 8-8 | 13-8 | 11-10 | 10-9 | 9-8 | | |
| | No.3 | 6-5 | 5-7 | 5-1 | 4-6 | 7-10 | 6-9 | 6-2 | 5-7 | 9-1 | 7-11 | 7-2 | 6-5 | 10-2 | 8-10 | 8-0 | 7-2 | | |

FLOOR JOISTS

100# LIVE LOAD 20# DEAD LOAD L/360

Table FJ-19

Design Criteria: *Strength* - 100 lbs. per sq. ft. live load, plus 20 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|------|-------|------|--------|------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-8 | 14-1 | 12-9 | 11-10 | 10-7 | 17-1 | 15-1 | 13-9 | 12-4 | 19-5 | 16-10 | 15-5 | 13-9 | | |
| | No.1 & Btr. | 10-10 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.1 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-3 | 12-4 | 11-3 | 10-1 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| | No.2 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Douglas Fir-South | Sel. Struc. | 10-0 | 9-1 | 8-6 | 7-11 | 12-8 | 11-7 | 10-10 | 10-1 | 15-5 | 14-0 | 13-1 | 11-8 | 18-2 | 16-0 | 14-7 | 13-1 | | |
| | No.1 | 9-8 | 8-4 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-8 | 11-10 | 10-10 | 9-8 | 15-3 | 13-3 | 12-1 | 10-10 | | |
| | No.2 | 9-3 | 8-0 | 7-4 | 6-7 | 11-4 | 9-9 | 8-11 | 8-0 | 13-1 | 11-4 | 10-4 | 9-3 | 14-8 | 12-8 | 11-7 | 10-4 | | |
| | No.3 | 7-1 | 6-2 | 5-7 | 5-0 | 8-8 | 7-6 | 6-10 | 6-2 | 10-1 | 8-8 | 7-11 | 7-1 | 11-3 | 9-9 | 8-11 | 7-11 | | |
| Hem-Fir | Sel. Struc. | 10-5 | 9-6 | 8-11 | 8-3 | 13-3 | 12-1 | 11-4 | 10-3 | 16-2 | 14-7 | 13-4 | 11-11 | 18-10 | 16-3 | 14-10 | 13-3 | | |
| | No.1 & Btr. | 10-2 | 9-1 | 8-4 | 7-5 | 12-10 | 11-2 | 10-2 | 9-1 | 14-11 | 12-11 | 11-9 | 10-7 | 16-8 | 14-5 | 13-2 | 11-9 | | |
| | No.1 | 9-11 | 8-7 | 7-10 | 7-0 | 12-1 | 10-6 | 9-7 | 8-7 | 14-0 | 12-2 | 11-1 | 9-11 | 15-8 | 13-7 | 12-5 | 11-1 | | |
| | No.2 | 9-3 | 8-0 | 7-4 | 6-7 | 11-4 | 9-9 | 8-11 | 8-0 | 13-1 | 11-4 | 10-4 | 9-3 | 14-8 | 12-8 | 11-7 | 10-4 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-9 | 12-5 | 11-3 | 10-7 | 9-10 | 15-1 | 13-8 | 12-10 | 11-6 | 17-9 | 15-8 | 14-4 | 12-10 | | |
| | No.1 | 9-5 | 8-2 | 7-5 | 6-8 | 11-6 | 9-11 | 9-1 | 8-1 | 13-4 | 11-6 | 10-6 | 9-5 | 14-10 | 12-10 | 11-9 | 10-6 | | |
| | No.2 | 8-10 | 7-8 | 7-0 | 6-3 | 10-10 | 9-4 | 8-6 | 7-8 | 12-6 | 10-10 | 9-11 | 8-10 | 14-0 | 12-1 | 11-1 | 9-11 | | |
| | No.3 | 6-9 | 5-10 | 5-4 | 4-9 | 8-3 | 7-1 | 6-6 | 5-10 | 9-6 | 8-3 | 7-6 | 6-9 | 10-8 | 9-3 | 8-5 | 7-6 | | |
| Western Woods | Sel. Struc. | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-6 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| | No.1 | 8-3 | 7-2 | 6-6 | 5-10 | 10-1 | 8-9 | 8-0 | 7-1 | 11-8 | 10-1 | 9-3 | 8-3 | 13-1 | 11-4 | 10-4 | 9-3 | | |
| | No.2 | 8-3 | 7-2 | 6-6 | 5-10 | 10-1 | 8-9 | 8-0 | 7-1 | 11-8 | 10-1 | 9-3 | 8-3 | 13-1 | 11-4 | 10-4 | 9-3 | | |
| | No.3 | 6-2 | 5-4 | 4-10 | 4-4 | 7-6 | 6-6 | 5-11 | 5-4 | 8-8 | 7-6 | 6-11 | 6-2 | 9-9 | 8-5 | 7-8 | 6-11 | | |

FLOOR JOISTS

100# LIVE LOAD 25# DEAD LOAD L/360

Table FJ-20

Design Criteria: *Strength* - 100 lbs. per sq. ft. live load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-6 | 14-1 | 12-9 | 11-8 | 10-5 | 17-1 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.1 & Btr. | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-3 | 12-1 | 10-9 | 17-1 | 14-9 | 13-6 | 12-1 | | |
| | No.1 | 9-10 | 8-6 | 7-9 | 6-11 | 12-0 | 10-5 | 9-6 | 8-6 | 13-11 | 12-1 | 11-0 | 9-10 | 15-7 | 13-6 | 12-4 | 11-0 | | |
| | No.2 | 9-4 | 8-1 | 7-5 | 6-7 | 11-5 | 9-10 | 9-0 | 8-1 | 13-3 | 11-5 | 10-5 | 9-4 | 14-9 | 12-9 | 11-8 | 10-5 | | |
| Douglas Fir-South | Sel. Struc. | 10-0 | 9-1 | 8-6 | 7-11 | 12-8 | 11-7 | 10-10 | 9-10 | 15-5 | 14-0 | 12-10 | 11-5 | 18-1 | 15-8 | 14-4 | 12-9 | | |
| | No.1 | 9-6 | 8-2 | 7-6 | 6-8 | 11-7 | 10-0 | 9-2 | 8-2 | 13-5 | 11-7 | 10-7 | 9-6 | 15-0 | 13-0 | 11-10 | 10-7 | | |
| | No.2 | 9-1 | 7-10 | 7-2 | 6-5 | 11-1 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-2 | 9-1 | 14-4 | 12-5 | 11-4 | 10-2 | | |
| | No.3 | 6-11 | 6-0 | 5-6 | 4-11 | 8-6 | 7-4 | 6-9 | 6-0 | 9-10 | 8-6 | 7-9 | 7-0 | 11-0 | 9-6 | 8-8 | 7-9 | | |
| Hem-Fir | Sel. Struc. | 10-5 | 9-6 | 8-11 | 8-3 | 13-3 | 12-1 | 11-3 | 10-1 | 16-2 | 14-3 | 13-0 | 11-8 | 18-5 | 15-11 | 14-7 | 13-0 | | |
| | No.1 & Btr. | 10-2 | 8-11 | 8-2 | 7-4 | 12-7 | 10-11 | 10-0 | 8-11 | 14-7 | 12-8 | 11-7 | 10-4 | 16-4 | 14-2 | 12-11 | 11-7 | | |
| | No.1 | 9-9 | 8-5 | 7-8 | 6-10 | 11-10 | 10-3 | 9-5 | 8-5 | 13-9 | 11-11 | 10-10 | 9-9 | 15-4 | 13-4 | 12-2 | 10-10 | | |
| | No.2 | 9-1 | 7-10 | 7-2 | 6-5 | 11-1 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-2 | 9-1 | 14-4 | 12-5 | 11-4 | 10-2 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-9 | 12-5 | 11-3 | 10-7 | 9-8 | 15-1 | 13-8 | 12-7 | 11-3 | 17-9 | 15-4 | 14-0 | 12-7 | | |
| | No.1 | 9-2 | 8-0 | 7-3 | 6-6 | 11-3 | 9-9 | 8-11 | 7-11 | 13-0 | 11-3 | 10-4 | 9-3 | 14-7 | 12-7 | 11-6 | 10-4 | | |
| | No.2 | 8-8 | 7-6 | 6-10 | 6-1 | 10-7 | 9-2 | 8-4 | 7-6 | 12-3 | 10-7 | 9-8 | 8-8 | 13-8 | 11-10 | 10-10 | 9-8 | | |
| | No.3 | 6-7 | 5-9 | 5-3 | 4-8 | 8-1 | 7-0 | 6-4 | 5-8 | 9-4 | 8-1 | 7-5 | 6-7 | 10-5 | 9-1 | 8-3 | 7-5 | | |
| Western Woods | Sel. Struc. | 9-4 | 8-1 | 7-5 | 6-7 | 11-5 | 9-10 | 9-0 | 8-1 | 13-3 | 11-5 | 10-5 | 9-4 | 14-9 | 12-9 | 11-8 | 10-5 | | |
| | No.1 | 8-1 | 7-0 | 6-5 | 5-9 | 9-10 | 8-7 | 7-10 | 7-0 | 11-5 | 9-11 | 9-1 | 8-1 | 12-9 | 11-1 | 10-1 | 9-1 | | |
| | No.2 | 8-1 | 7-0 | 6-5 | 5-9 | 9-10 | 8-7 | 7-10 | 7-0 | 11-5 | 9-11 | 9-1 | 8-1 | 12-9 | 11-1 | 10-1 | 9-1 | | |
| | No.3 | 6-0 | 5-3 | 4-9 | 4-3 | 7-4 | 6-4 | 5-10 | 5-2 | 8-6 | 7-5 | 6-9 | 6-0 | 9-6 | 8-3 | 7-6 | 6-9 | | |

FLOOR JOISTS

125# LIVE LOAD 10# DEAD LOAD L/360

Table FJ-21

Design Criteria: Strength - 125 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|--------|-------|-------------|------------|--------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|
| | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 10-3 | 9-4 | 8-9 | 8-1 | 13-1 | 11-10 | 11-2 | 10-0 | 15-11 | 14-3 | 13-0 | 11-7 | 18-4 | 15-11 | 14-6 | 13-0 |
| | No.1 & Btr. | 10-1 | 9-0 | 8-2 | 7-4 | 12-8 | 11-0 | 10-0 | 8-11 | 14-8 | 12-9 | 11-7 | 10-5 | 16-5 | 14-3 | 13-0 | 11-7 |
| | No.1 | 9-6 | 8-2 | 7-6 | 6-8 | 11-7 | 10-0 | 9-2 | 8-2 | 13-5 | 11-7 | 10-7 | 9-6 | 15-0 | 13-0 | 11-10 | 10-7 |
| | No.2 | 9-0 | 7-9 | 7-1 | 6-4 | 11-0 | 9-6 | 8-8 | 7-9 | 12-9 | 11-0 | 10-1 | 9-0 | 14-3 | 12-4 | 11-3 | 10-1 |
| | No.3 | 6-10 | 5-11 | 5-5 | 4-10 | 8-5 | 7-3 | 6-7 | 5-11 | 9-9 | 8-5 | 7-8 | 6-10 | 10-10 | 9-5 | 8-7 | 7-8 |
| Douglas Fir-South | Sel. Struc. | 9-3 | 8-5 | 7-11 | 7-4 | 11-10 | 10-9 | 10-1 | 9-4 | 14-4 | 13-0 | 12-3 | 11-0 | 16-11 | 15-1 | 13-9 | 12-4 |
| | No.1 | 9-0 | 7-11 | 7-2 | 6-5 | 11-1 | 9-8 | 8-9 | 7-10 | 12-11 | 11-2 | 10-2 | 9-1 | 14-5 | 12-6 | 11-5 | 10-2 |
| | No.2 | 8-9 | 7-7 | 6-11 | 6-2 | 10-8 | 9-3 | 8-5 | 7-6 | 12-4 | 10-8 | 9-9 | 8-9 | 13-10 | 12-0 | 10-11 | 9-9 |
| | No.3 | 6-8 | 5-10 | 5-3 | 4-9 | 8-2 | 7-1 | 6-6 | 5-9 | 9-6 | 8-3 | 7-6 | 6-8 | 10-7 | 9-2 | 8-4 | 7-6 |
| Hem-Fir | Sel. Struc. | 9-8 | 8-9 | 8-3 | 7-8 | 12-4 | 11-2 | 10-7 | 9-8 | 15-0 | 13-8 | 12-6 | 11-3 | 17-8 | 15-4 | 14-0 | 12-6 |
| | No.1 & Btr. | 9-6 | 8-7 | 7-10 | 7-0 | 12-1 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-1 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 |
| | No.1 | 9-4 | 8-1 | 7-5 | 6-7 | 11-5 | 9-11 | 9-0 | 8-1 | 13-3 | 11-6 | 10-6 | 9-4 | 14-9 | 12-10 | 11-8 | 10-5 |
| | No.2 | 8-9 | 7-7 | 6-11 | 6-2 | 10-8 | 9-3 | 8-5 | 7-6 | 12-4 | 10-8 | 9-9 | 8-9 | 13-10 | 12-0 | 10-11 | 9-9 |
| | No.3 | 6-8 | 5-10 | 5-3 | 4-9 | 8-2 | 7-1 | 6-6 | 5-9 | 9-6 | 8-3 | 7-6 | 6-8 | 10-7 | 9-2 | 8-4 | 7-6 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 9-0 | 8-2 | 7-9 | 7-2 | 11-6 | 10-5 | 9-10 | 9-2 | 14-0 | 12-9 | 12-0 | 10-10 | 16-6 | 14-9 | 13-6 | 12-1 |
| | No.1 | 8-9 | 7-8 | 7-0 | 6-3 | 10-10 | 9-4 | 8-7 | 7-8 | 12-6 | 10-10 | 9-11 | 8-10 | 14-0 | 12-2 | 11-1 | 9-11 |
| | No.2 | 8-4 | 7-3 | 6-7 | 5-11 | 10-2 | 8-10 | 8-1 | 7-2 | 11-10 | 10-3 | 9-4 | 8-4 | 13-2 | 11-5 | 10-5 | 9-4 |
| | No.3 | 6-4 | 5-6 | 5-0 | 4-6 | 7-9 | 6-9 | 6-2 | 5-6 | 9-0 | 7-9 | 7-1 | 6-4 | 10-1 | 8-8 | 7-11 | 7-1 |
| Western Woods | Sel. Struc. | 8-9 | 7-9 | 7-1 | 6-4 | 11-0 | 9-6 | 8-8 | 7-9 | 12-9 | 11-0 | 10-1 | 9-0 | 14-3 | 12-4 | 11-3 | 10-1 |
| | No.1 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 |
| | No.2 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 |
| | No.3 | 5-10 | 5-0 | 4-7 | 4-1 | 7-1 | 6-2 | 5-7 | 5-0 | 8-3 | 7-1 | 6-6 | 5-10 | 9-2 | 7-11 | 7-3 | 6-6 |

FLOOR JOISTS

125# LIVE LOAD 20# DEAD LOAD L/360

Table FJ-22

Design Criteria: Strength - 125 lbs. per sq. ft. live load, plus 20 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|--------------|--------------|--------------|
| | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 10-3 | 9-4 | 8-9 | 7-11 | 13-1 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 |
| | No.1 & Btr. | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-2 | 12-3 | 11-2 | 10-0 | 15-10 | 13-9 | 12-6 | 11-2 |
| | No.1 | 9-2 | 7-11 | 7-3 | 6-5 | 11-2 | 9-8 | 8-10 | 7-11 | 12-11 | 11-2 | 10-3 | 9-2 | 14-5 | 12-6 | 11-5 | 10-3 |
| | No.2 | 8-8 | 7-6 | 6-10 | 6-2 | 10-7 | 9-2 | 8-4 | 7-6 | 12-3 | 10-8 | 9-8 | 8-8 | 13-9 | 11-10 | 10-10 | 9-8 |
| | No.3 | 6-7 | 5-9 | 5-3 | 4-8 | 8-1 | 7-0 | 6-5 | 5-9 | 9-4 | 8-1 | 7-5 | 6-8 | 10-6 | 9-1 | 8-3 | 7-5 |
| Douglas Fir-South | Sel. Struc. | 9-3 | 8-5 | 7-11 | 7-4 | 11-10 | 10-9 | 10-1 | 9-2 | 14-4 | 13-0 | 11-11 | 10-8 | 16-9 | 14-7 | 13-3 | 11-10 |
| | No.1 | 8-9 | 7-7 | 6-11 | 6-3 | 10-9 | 9-3 | 8-6 | 7-7 | 12-5 | 10-9 | 9-10 | 8-10 | 13-11 | 12-0 | 11-0 | 9-10 |
| | No.2 | 8-5 | 7-3 | 6-8 | 5-11 | 10-3 | 8-11 | 8-2 | 7-3 | 11-11 | 10-4 | 9-5 | 8-5 | 13-4 | 11-6 | 10-6 | 9-5 |
| | No.3 | 6-5 | 5-7 | 5-1 | 4-7 | 7-11 | 6-10 | 6-3 | 5-7 | 9-2 | 7-11 | 7-3 | 6-6 | 10-3 | 8-10 | 8-1 | 7-3 |
| Hem-Fir | Sel. Struc. | 9-8 | 8-9 | 8-3 | 7-8 | 12-4 | 11-2 | 10-5 | 9-4 | 15-0 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 |
| | No.1 & Btr. | 9-6 | 8-4 | 7-7 | 6-9 | 11-8 | 10-2 | 9-3 | 8-3 | 13-7 | 11-9 | 10-9 | 9-7 | 15-2 | 13-2 | 12-0 | 10-9 |
| | No.1 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-6 | 8-8 | 7-9 | 12-9 | 11-1 | 10-1 | 9-0 | 14-3 | 12-4 | 11-3 | 10-1 |
| | No.2 | 8-5 | 7-3 | 6-8 | 5-11 | 10-3 | 8-11 | 8-2 | 7-3 | 11-11 | 10-4 | 9-5 | 8-5 | 13-4 | 11-6 | 10-6 | 9-5 |
| | No.3 | 6-5 | 5-7 | 5-1 | 4-7 | 7-11 | 6-10 | 6-3 | 5-7 | 9-2 | 7-11 | 7-3 | 6-6 | 10-3 | 8-10 | 8-1 | 7-3 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 9-0 | 8-2 | 7-9 | 7-2 | 11-6 | 10-5 | 9-10 | 9-0 | 14-0 | 12-9 | 11-8 | 10-5 | 16-6 | 14-3 | 13-0 | 11-8 |
| | No.1 | 8-6 | 7-5 | 6-9 | 6-0 | 10-5 | 9-0 | 8-3 | 7-5 | 12-1 | 10-6 | 9-7 | 8-7 | 13-6 | 11-8 | 10-8 | 9-7 |
| | No.2 | 8-0 | 7-0 | 6-4 | 5-8 | 9-10 | 8-6 | 7-9 | 6-11 | 11-5 | 9-10 | 9-0 | 8-1 | 12-9 | 11-0 | 10-1 | 9-0 |
| | No.3 | 6-2 | 5-4 | 4-10 | 4-4 | 7-6 | 6-6 | 5-11 | 5-3 | 8-8 | 7-6 | 6-10 | 6-2 | 9-8 | 8-5 | 7-8 | 6-10 |
| Western Woods | Sel. Struc. | 8-8 | 7-6 | 6-10 | 6-2 | 10-7 | 9-2 | 8-4 | 7-6 | 12-3 | 10-8 | 9-8 | 8-8 | 13-9 | 11-10 | 10-10 | 9-8 |
| | No.1 | 7-6 | 6-6 | 5-11 | 5-4 | 9-2 | 7-11 | 7-3 | 6-6 | 10-8 | 9-2 | 8-5 | 7-6 | 11-10 | 10-3 | 9-5 | 8-5 |
| | No.2 | 7-6 | 6-6 | 5-11 | 5-4 | 9-2 | 7-11 | 7-3 | 6-6 | 10-8 | 9-2 | 8-5 | 7-6 | 11-10 | 10-3 | 9-5 | 8-5 |
| | No.3 | 5-7 | 4-10 | 4-5 | 3-11 | 6-10 | 5-11 | 5-5 | 4-10 | 7-11 | 6-10 | 6-3 | 5-7 | 8-10 | 7-8 | 7-0 | 6-3 |

CEILING JOISTS

20# LIVE LOAD 10# DEAD LOAD L/360

Table CJ-1

Design Criteria: Strength - 20 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
 Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 4 | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 9-1 | 8-3 | 7-9 | 7-3 | 14-4 | 13-0 | 12-3 | 11-4 | 18-10 | 17-2 | 16-1 | 15-0 | 24-1 | 21-10 | 20-7 | 19-1 |
| | No.1 & Btr. | 8-11 | 8-1 | 7-8 | 7-1 | 14-1 | 12-9 | 12-0 | 11-2 | 18-6 | 16-10 | 15-10 | 14-8 | 23-8 | 21-6 | 20-2 | 18-9 |
| | No.1 | 8-9 | 8-0 | 7-6 | 7-0 | 13-9 | 12-6 | 11-9 | 10-11 | 18-2 | 16-6 | 15-6 | 14-2 | 23-2 | 21-1 | 19-5 | 17-4 |
| | No.2 | 8-7 | 7-10 | 7-4 | 6-10 | 13-6 | 12-3 | 11-7 | 10-8 | 17-10 | 16-2 | 15-1 | 13-6 | 22-9 | 20-2 | 18-5 | 16-5 |
| | No.3 | 7-10 | 6-10 | 6-2 | 5-7 | 11-6 | 9-11 | 9-1 | 8-1 | 14-7 | 12-7 | 11-6 | 10-3 | 17-9 | 15-5 | 14-1 | 12-7 |
| Douglas Fir-South | Sel. Struc. | 8-3 | 7-6 | 7-0 | 6-6 | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-6 | 21-9 | 19-9 | 18-7 | 17-3 |
| | No.1 | 8-0 | 7-3 | 6-10 | 6-4 | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-8 |
| | No.2 | 7-10 | 7-1 | 6-8 | 6-2 | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-0 |
| | No.3 | 7-7 | 6-8 | 6-1 | 5-5 | 11-2 | 9-8 | 8-10 | 7-11 | 14-2 | 12-4 | 11-3 | 10-0 | 17-4 | 15-0 | 13-8 | 12-3 |
| Hem-Fir | Sel. Struc. | 8-7 | 7-10 | 7-4 | 6-10 | 13-6 | 12-3 | 11-7 | 10-9 | 17-10 | 16-2 | 15-3 | 14-2 | 22-9 | 20-8 | 19-5 | 18-0 |
| | No.1 & Btr. | 8-5 | 7-8 | 7-2 | 6-8 | 13-3 | 12-0 | 11-4 | 10-6 | 17-5 | 15-10 | 14-11 | 13-10 | 22-3 | 20-2 | 19-0 | 17-8 |
| | No.1 | 8-5 | 7-8 | 7-2 | 6-8 | 13-3 | 12-0 | 11-4 | 10-6 | 17-5 | 15-10 | 14-11 | 13-10 | 22-3 | 20-2 | 19-0 | 17-1 |
| | No.2 | 8-0 | 7-3 | 6-10 | 6-4 | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-1 | 21-2 | 19-3 | 17-10 | 16-0 |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 11-2 | 9-8 | 8-10 | 7-11 | 14-2 | 12-4 | 11-3 | 10-0 | 17-4 | 15-0 | 13-8 | 12-3 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 8-0 | 7-3 | 6-10 | 6-4 | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-10 |
| | No.1 | 7-10 | 7-1 | 6-8 | 6-2 | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-3 |
| | No.2 | 7-7 | 6-11 | 6-6 | 6-0 | 11-11 | 10-10 | 10-2 | 9-6 | 15-9 | 14-3 | 13-5 | 12-6 | 20-1 | 18-3 | 17-1 | 15-3 |
| | No.3 | 7-3 | 6-4 | 5-9 | 5-2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-6 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 |
| Western Woods | Sel. Struc. | 7-10 | 7-1 | 6-8 | 6-2 | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-5 |
| | No.1 | 7-7 | 6-11 | 6-6 | 6-0 | 11-11 | 10-10 | 10-2 | 9-3 | 15-9 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-3 |
| | No.2 | 7-4 | 6-8 | 6-3 | 5-10 | 11-7 | 10-6 | 9-10 | 9-2 | 15-3 | 13-10 | 13-0 | 11-8 | 19-5 | 17-5 | 15-11 | 14-3 |
| | No.3 | 6-8 | 5-9 | 5-3 | 4-8 | 9-8 | 8-5 | 7-8 | 6-10 | 12-4 | 10-8 | 9-9 | 8-8 | 15-0 | 13-0 | 11-10 | 10-7 |

CEILING JOISTS

20# LIVE LOAD 10# DEAD LOAD L/240

Table CJ-2

Design Criteria: Strength - 20 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
 Deflection - Limited in span in inches divided by 240 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|-------|-------|-------|------|-------|------|-------|-------|--------|-------|-------|------|
| | | 2 x 4 | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 10-5 | 9-6 | 8-11 | 8-3 | 16-4 | 14-11 | 14-0 | 13-0 | 21-7 | 19-7 | 18-5 | 17-2 | 27-6 | 25-0 | 23-7 | 21-3 |
| | No.1 & Btr. | 10-3 | 9-4 | 8-9 | 8-1 | 16-1 | 14-7 | 13-9 | 12-3 | 21-2 | 19-1 | 17-5 | 15-7 | 26-10 | 23-3 | 21-3 | 19-0 |
| | No.1 | 10-0 | 9-1 | 8-7 | 7-8 | 15-9 | 13-9 | 12-6 | 11-2 | 20-1 | 17-5 | 15-10 | 14-2 | 24-6 | 21-3 | 19-5 | 17-4 |
| | No.2 | 9-10 | 8-11 | 8-2 | 7-3 | 15-0 | 13-0 | 11-11 | 10-8 | 19-1 | 16-6 | 15-1 | 13-6 | 23-3 | 20-2 | 18-5 | 16-5 |
| | No.3 | 7-10 | 6-10 | 6-2 | 5-7 | 11-6 | 9-11 | 9-1 | 8-1 | 14-7 | 12-7 | 11-6 | 10-3 | 17-9 | 15-5 | 14-1 | 12-7 |
| Douglas Fir-South | Sel. Struc. | 9-5 | 8-7 | 8-1 | 7-6 | 14-9 | 13-5 | 12-8 | 11-9 | 19-6 | 17-9 | 16-8 | 15-6 | 24-10 | 22-7 | 21-3 | 19-9 |
| | No.1 | 9-2 | 8-4 | 7-10 | 7-3 | 14-5 | 13-1 | 12-1 | 10-9 | 19-0 | 16-9 | 15-3 | 13-8 | 23-7 | 20-5 | 18-8 | 16-8 |
| | No.2 | 8-11 | 8-1 | 7-8 | 7-1 | 14-1 | 12-8 | 11-7 | 10-4 | 18-6 | 16-0 | 14-8 | 13-1 | 22-7 | 19-7 | 17-10 | 16-0 |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 11-2 | 9-8 | 8-10 | 7-11 | 14-2 | 12-4 | 11-3 | 10-0 | 17-4 | 15-0 | 13-8 | 12-3 |
| Hem-Fir | Sel. Struc. | 9-10 | 8-11 | 8-5 | 7-10 | 15-6 | 14-1 | 13-3 | 12-3 | 20-5 | 18-6 | 17-5 | 16-2 | 26-0 | 23-8 | 22-3 | 20-6 |
| | No.1 & Btr. | 9-8 | 8-9 | 8-3 | 7-8 | 15-2 | 13-9 | 12-11 | 11-9 | 19-11 | 18-2 | 16-8 | 14-11 | 25-5 | 22-3 | 20-4 | 18-2 |
| | No.1 | 9-8 | 8-9 | 8-3 | 7-7 | 15-2 | 13-7 | 12-4 | 11-1 | 19-10 | 17-2 | 15-8 | 14-0 | 24-3 | 21-0 | 19-2 | 17-1 |
| | No.2 | 9-2 | 8-4 | 7-10 | 7-1 | 14-5 | 12-8 | 11-7 | 10-4 | 18-6 | 16-0 | 14-8 | 13-1 | 22-7 | 19-7 | 17-10 | 16-0 |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 11-2 | 9-8 | 8-10 | 7-11 | 14-2 | 12-4 | 11-3 | 10-0 | 17-4 | 15-0 | 13-8 | 12-3 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 9-2 | 8-4 | 7-10 | 7-3 | 14-5 | 13-1 | 12-4 | 11-5 | 19-0 | 17-3 | 16-3 | 15-1 | 24-3 | 22-1 | 20-9 | 19-3 |
| | No.1 | 8-11 | 8-1 | 7-8 | 7-1 | 14-1 | 12-9 | 11-9 | 10-6 | 18-6 | 16-3 | 14-10 | 13-3 | 22-11 | 19-10 | 18-2 | 16-3 |
| | No.2 | 8-8 | 7-11 | 7-5 | 6-9 | 13-8 | 12-1 | 11-0 | 9-10 | 17-8 | 15-4 | 14-0 | 12-6 | 21-7 | 18-8 | 17-1 | 15-3 |
| | No.3 | 7-3 | 6-4 | 5-9 | 5-2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-6 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 |
| Western Woods | Sel. Struc. | 8-11 | 8-1 | 7-8 | 7-1 | 14-1 | 12-9 | 11-11 | 10-8 | 18-6 | 16-6 | 15-1 | 13-6 | 23-3 | 20-2 | 18-5 | 16-5 |
| | No.1 | 8-8 | 7-9 | 7-0 | 6-4 | 13-0 | 11-3 | 10-4 | 9-3 | 16-6 | 14-3 | 13-0 | 11-8 | 20-2 | 17-5 | 15-11 | 14-3 |
| | No.2 | 8-5 | 7-8 | 7-0 | 6-4 | 13-0 | 11-3 | 10-4 | 9-3 | 16-6 | 14-3 | 13-0 | 11-8 | 20-2 | 17-5 | 15-11 | 14-3 |
| | No.3 | 6-8 | 5-9 | 5-3 | 4-8 | 9-8 | 8-5 | 7-8 | 6-10 | 12-4 | 10-8 | 9-9 | 8-8 | 15-0 | 13-0 | 11-10 | 10-7 |

CEILING JOISTS

10# LIVE LOAD 10# DEAD LOAD L/360

Table CJ-3

Design Criteria: *Strength* - 10 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 4 | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 11-6 | 10-5 | 9-10 | 9-1 | 18-0 | 16-4 | 15-5 | 14-4 | 23-9 | 21-7 | 20-4 | 18-10 | 30-4 | 27-6 | 25-11 | 24-1 |
| | No.1 & Btr. | 11-3 | 10-3 | 9-8 | 8-11 | 17-8 | 16-1 | 15-2 | 14-1 | 23-4 | 21-2 | 19-11 | 18-6 | 29-9 | 27-1 | 25-5 | 23-3 |
| | No.1 | 11-1 | 10-0 | 9-5 | 8-9 | 17-4 | 15-9 | 14-10 | 13-9 | 22-11 | 20-10 | 19-5 | 17-5 | 29-2 | 26-0 | 23-9 | 21-3 |
| | No.2 | 10-10 | 9-10 | 9-3 | 8-7 | 17-0 | 15-6 | 14-7 | 13-0 | 22-5 | 20-2 | 18-5 | 16-6 | 28-6 | 24-8 | 22-6 | 20-2 |
| | No.3 | 9-7 | 8-4 | 7-7 | 6-10 | 14-1 | 12-2 | 11-1 | 9-11 | 17-10 | 15-5 | 14-1 | 12-7 | 21-9 | 18-10 | 17-2 | 15-5 |
| Douglas Fir-South | Sel. Struc. | 10-4 | 9-5 | 8-10 | 8-3 | 16-3 | 14-9 | 13-11 | 12-11 | 21-5 | 19-6 | 18-4 | 17-0 | 27-5 | 24-10 | 23-5 | 21-9 |
| | No.1 | 10-1 | 9-2 | 8-8 | 8-0 | 15-11 | 14-5 | 13-7 | 12-7 | 20-11 | 19-0 | 17-11 | 16-7 | 26-9 | 24-3 | 22-10 | 20-5 |
| | No.2 | 9-10 | 8-11 | 8-5 | 7-10 | 15-6 | 14-1 | 13-3 | 12-3 | 20-5 | 18-6 | 17-5 | 16-0 | 26-0 | 23-8 | 21-11 | 19-7 |
| | No.3 | 9-5 | 8-2 | 7-5 | 6-8 | 13-9 | 11-11 | 10-10 | 9-8 | 17-5 | 15-1 | 13-9 | 12-4 | 21-3 | 18-5 | 16-9 | 15-0 |
| Hem-Fir | Sel. Struc. | 10-10 | 9-10 | 9-3 | 8-7 | 17-0 | 15-6 | 14-7 | 13-6 | 22-5 | 20-5 | 19-2 | 17-10 | 28-7 | 26-0 | 24-6 | 22-9 |
| | No.1 & Btr. | 10-7 | 9-8 | 9-1 | 8-5 | 16-8 | 15-2 | 14-3 | 13-3 | 21-11 | 19-11 | 18-9 | 17-5 | 28-0 | 25-5 | 23-11 | 22-3 |
| | No.1 | 10-7 | 9-8 | 9-1 | 8-5 | 16-8 | 15-2 | 14-3 | 13-3 | 21-11 | 19-11 | 18-9 | 17-2 | 28-0 | 25-5 | 23-5 | 21-0 |
| | No.2 | 10-1 | 9-2 | 8-8 | 8-0 | 15-11 | 14-5 | 13-7 | 12-7 | 20-11 | 19-0 | 17-11 | 16-0 | 26-9 | 24-0 | 21-11 | 19-7 |
| | No.3 | 9-5 | 8-2 | 7-5 | 6-8 | 13-9 | 11-11 | 10-10 | 9-8 | 17-5 | 15-1 | 13-9 | 12-4 | 21-3 | 18-5 | 16-9 | 15-0 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-1 | 9-2 | 8-8 | 8-0 | 15-11 | 14-5 | 13-7 | 12-7 | 20-11 | 19-0 | 17-11 | 16-7 | 26-9 | 24-3 | 22-10 | 21-2 |
| | No.1 | 9-10 | 8-11 | 8-5 | 7-10 | 15-6 | 14-1 | 13-3 | 12-3 | 20-5 | 18-6 | 17-5 | 16-2 | 26-0 | 23-8 | 22-3 | 19-10 |
| | No.2 | 9-7 | 8-8 | 8-2 | 7-7 | 15-0 | 13-8 | 12-10 | 11-11 | 19-10 | 18-0 | 16-11 | 15-4 | 25-3 | 22-11 | 20-11 | 18-8 |
| | No.3 | 8-11 | 7-9 | 7-0 | 6-4 | 13-0 | 11-3 | 10-4 | 9-3 | 16-6 | 14-3 | 13-0 | 11-8 | 20-2 | 17-5 | 15-11 | 14-3 |
| Western Woods | Sel. Struc. | 9-10 | 8-11 | 8-5 | 7-10 | 15-6 | 14-1 | 13-3 | 12-3 | 20-5 | 18-6 | 17-5 | 16-2 | 26-0 | 23-8 | 22-3 | 20-2 |
| | No.1 | 9-7 | 8-8 | 8-2 | 7-7 | 15-0 | 13-8 | 12-7 | 11-3 | 19-10 | 17-6 | 16-0 | 14-3 | 24-8 | 21-4 | 19-6 | 17-5 |
| | No.2 | 9-3 | 8-5 | 7-11 | 7-4 | 14-7 | 13-3 | 12-5 | 11-3 | 19-2 | 17-5 | 16-0 | 14-3 | 24-6 | 21-4 | 19-6 | 17-5 |
| | No.3 | 8-2 | 7-0 | 6-5 | 5-9 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-0 | 11-11 | 10-8 | 18-5 | 15-11 | 14-6 | 13-0 |

CEILING JOISTS

10# LIVE LOAD 5# DEAD LOAD L/240

Table CJ-4

Design Criteria: *Strength* - 10 lbs. per sq. ft. live load, plus 5 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-----------------------|-------------|------------------------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|-------|--------|------|-------|-------|
| | | 2 x 4 | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 13-2 | 11-11 | 11-3 | 10-5 | 20-8 | 18-9 | 17-8 | 16-4 | 27-2 | 24-8 | 23-3 | 21-7 | 34-8 | 31-6 | 29-8 | 27-6 |
| | No.1 & Btr. | 12-11 | 11-9 | 11-0 | 10-3 | 20-3 | 18-5 | 17-4 | 16-1 | 26-9 | 24-3 | 22-10 | 21-2 | 34-1 | 31-0 | 29-2 | 26-10 |
| | No.1 | 12-8 | 11-6 | 10-10 | 10-0 | 19-11 | 18-1 | 17-0 | 15-9 | 26-2 | 23-10 | 22-5 | 20-1 | 33-5 | 30-0 | 27-5 | 24-6 |
| | No.2 | 12-5 | 11-3 | 10-7 | 9-10 | 19-6 | 17-8 | 16-8 | 15-0 | 25-8 | 23-4 | 21-4 | 19-1 | 32-9 | 28-6 | 26-0 | 23-3 |
| | No.3 | 11-1 | 9-7 | 8-9 | 7-10 | 16-3 | 14-1 | 12-10 | 11-6 | 20-7 | 17-10 | 16-3 | 14-7 | 25-2 | 21-9 | 19-10 | 17-9 |
| Douglas Fir-South | Sel. Struc. | 11-10 | 10-9 | 10-2 | 9-5 | 18-8 | 16-11 | 15-11 | 14-9 | 24-7 | 22-4 | 21-0 | 19-6 | 31-4 | 28-6 | 26-10 | 24-10 |
| | No.1 | 11-7 | 10-6 | 9-11 | 9-2 | 18-2 | 16-6 | 15-7 | 14-5 | 24-0 | 21-9 | 20-6 | 19-0 | 30-7 | 27-9 | 26-2 | 23-7 |
| | No.2 | 11-3 | 10-3 | 9-8 | 8-11 | 17-8 | 16-1 | 15-2 | 14-1 | 23-4 | 21-2 | 19-11 | 18-6 | 29-9 | 27-1 | 25-3 | 22-7 |
| | No.3 | 10-10 | 9-5 | 8-7 | 7-8 | 15-10 | 13-9 | 12-6 | 11-2 | 20-1 | 17-5 | 15-10 | 14-2 | 24-6 | 21-3 | 19-5 | 17-4 |
| Hem-Fir | Sel. Struc. | 12-5 | 11-3 | 10-7 | 9-10 | 19-6 | 17-8 | 16-8 | 15-6 | 25-8 | 23-4 | 21-11 | 20-5 | 32-9 | 29-9 | 28-0 | 26-0 |
| | No.1 & Btr. | 12-2 | 11-0 | 10-4 | 9-8 | 19-1 | 17-4 | 16-4 | 15-2 | 25-2 | 22-10 | 21-6 | 19-11 | 32-1 | 29-2 | 27-5 | 25-5 |
| | No.1 | 12-2 | 11-0 | 10-4 | 9-8 | 19-1 | 17-4 | 16-4 | 15-2 | 25-2 | 22-10 | 21-6 | 19-10 | 32-1 | 29-2 | 27-1 | 24-3 |
| | No.2 | 11-7 | 10-6 | 9-11 | 9-2 | 18-2 | 16-6 | 15-7 | 14-5 | 24-0 | 21-9 | 20-6 | 18-6 | 30-7 | 27-8 | 25-3 | 22-7 |
| | No.3 | 10-10 | 9-5 | 8-7 | 7-8 | 15-10 | 13-9 | 12-6 | 11-2 | 20-1 | 17-5 | 15-10 | 14-2 | 24-6 | 21-3 | 19-5 | 17-4 |
| Spruce-Pine-Fir South | Sel. Struc. | 11-7 | 10-6 | 9-11 | 9-2 | 18-2 | 16-6 | 15-7 | 14-5 | 24-0 | 21-9 | 20-6 | 19-0 | 30-7 | 27-9 | 26-2 | 24-3 |
| | No.1 | 11-3 | 10-3 | 9-8 | 8-11 | 17-8 | 16-1 | 15-2 | 14-1 | 23-4 | 21-2 | 19-11 | 18-6 | 29-9 | 27-1 | 25-5 | 22-11 |
| | No.2 | 10-11 | 9-11 | 9-4 | 8-8 | 17-2 | 15-7 | 14-8 | 13-8 | 22-8 | 20-7 | 19-5 | 17-8 | 28-11 | 26-3 | 24-2 | 21-7 |
| | No.3 | 10-3 | 8-11 | 8-2 | 7-3 | 15-0 | 13-0 | 11-11 | 10-8 | 19-1 | 16-6 | 15-1 | 13-6 | 23-3 | 20-2 | 18-5 | 16-5 |
| Western Woods | Sel. Struc. | 11-3 | 10-3 | 9-8 | 8-11 | 17-8 | 16-1 | 15-2 | 14-1 | 23-4 | 21-2 | 19-11 | 18-6 | 29-9 | 27-1 | 25-5 | 23-3 |
| | No.1 | 10-11 | 9-11 | 9-4 | 8-8 | 17-2 | 15-7 | 14-7 | 13-0 | 22-8 | 20-2 | 18-5 | 16-6 | 28-6 | 24-8 | 22-6 | 20-2 |
| | No.2 | 10-7 | 9-8 | 9-1 | 8-5 | 16-8 | 15-2 | 14-3 | 13-0 | 21-11 | 19-11 | 18-5 | 16-6 | 28-0 | 24-8 | 22-6 | 20-2 |
| | No.3 | 9-5 | 8-2 | 7-5 | 6-8 | 13-9 | 11-11 | 10-10 | 9-8 | 17-5 | 15-1 | 13-9 | 12-4 | 21-3 | 18-5 | 16-9 | 15-0 |

ROOF RAFTERS

20# LIVE LOAD¹ 10# DEAD LOAD L/240

Table RR-1

Design Criteria: *Strength* - 20 lbs. per sq. ft. live load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | Grade | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 16-4 | 14-11 | 14-0 | 13-0 | 21-7 | 19-7 | 18-5 | 17-2 | 27-6 | 25-0 | 23-7 | 21-10 | 33-6 | 30-5 | 28-8 | 26-7 |
| | No.1 & Btr. | 16-1 | 14-7 | 13-9 | 12-9 | 21-2 | 19-3 | 18-2 | 16-10 | 27-1 | 24-7 | 23-1 | 21-3 | 32-11 | 29-11 | 27-6 | 24-8 |
| | No.1 | 15-9 | 14-4 | 13-6 | 12-6 | 20-10 | 18-11 | 17-9 | 15-10 | 26-6 | 23-9 | 21-8 | 19-5 | 31-10 | 27-6 | 25-2 | 22-6 |
| | No.2 | 15-6 | 14-1 | 13-3 | 11-11 | 20-5 | 18-5 | 16-10 | 15-1 | 26-0 | 22-6 | 20-7 | 18-5 | 30-2 | 26-1 | 23-10 | 21-4 |
| | No.3 | 12-10 | 11-1 | 10-2 | 9-1 | 16-3 | 14-1 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-1 | 23-0 | 19-11 | 18-3 | 16-3 |
| Douglas Fir-South | Sel. Struc. | 14-9 | 13-5 | 12-8 | 11-9 | 19-6 | 17-9 | 16-8 | 15-6 | 24-10 | 22-7 | 21-3 | 19-9 | 30-3 | 27-6 | 25-10 | 24-0 |
| | No.1 | 14-5 | 13-1 | 12-4 | 11-5 | 19-0 | 17-3 | 16-3 | 15-1 | 24-3 | 22-1 | 20-9 | 18-8 | 29-6 | 26-6 | 24-2 | 21-7 |
| | No.2 | 14-1 | 12-9 | 12-0 | 11-2 | 18-6 | 16-10 | 15-10 | 14-8 | 23-8 | 21-6 | 20-0 | 17-10 | 28-9 | 25-5 | 23-2 | 20-9 |
| | No.3 | 12-6 | 10-10 | 9-11 | 8-10 | 15-10 | 13-9 | 12-7 | 11-3 | 19-5 | 16-9 | 15-4 | 13-8 | 22-6 | 19-6 | 17-9 | 15-11 |
| Hem-Fir | Sel. Struc. | 15-6 | 14-1 | 13-3 | 12-3 | 20-5 | 18-6 | 17-5 | 16-2 | 26-0 | 23-8 | 22-3 | 20-8 | 31-8 | 28-9 | 27-1 | 25-1 |
| | No.1 & Btr. | 15-2 | 13-9 | 12-11 | 12-0 | 19-11 | 18-2 | 17-1 | 15-10 | 25-5 | 23-1 | 21-9 | 20-2 | 30-11 | 28-2 | 26-4 | 23-7 |
| | No.1 | 15-2 | 13-9 | 12-11 | 12-0 | 19-11 | 18-2 | 17-1 | 15-8 | 25-5 | 23-1 | 21-5 | 19-2 | 30-11 | 27-2 | 24-10 | 22-2 |
| | No.2 | 14-5 | 13-1 | 12-4 | 11-5 | 19-0 | 17-3 | 16-3 | 14-8 | 24-3 | 21-11 | 20-0 | 17-10 | 29-4 | 25-5 | 23-2 | 20-9 |
| | No.3 | 12-6 | 10-10 | 9-11 | 8-10 | 15-0 | 13-9 | 12-7 | 11-3 | 19-5 | 16-9 | 15-4 | 13-8 | 22-6 | 19-6 | 17-9 | 15-11 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 14-5 | 13-1 | 12-4 | 11-5 | 19-0 | 17-3 | 16-3 | 15-1 | 24-3 | 22-1 | 20-9 | 19-3 | 29-6 | 26-10 | 25-3 | 23-5 |
| | No.1 | 14-1 | 12-9 | 12-0 | 11-2 | 18-6 | 16-10 | 15-10 | 14-8 | 23-8 | 21-6 | 20-2 | 18-2 | 28-9 | 25-9 | 23-6 | 21-0 |
| | No.2 | 13-8 | 12-5 | 11-8 | 10-10 | 18-0 | 16-4 | 15-5 | 14-0 | 22-11 | 20-10 | 19-1 | 17-1 | 27-11 | 24-3 | 22-2 | 19-9 |
| | No.3 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-0 | 11-11 | 10-8 | 18-5 | 15-11 | 14-6 | 13-0 | 21-4 | 18-6 | 16-10 | 15-1 |
| Western Woods | Sel. Struc. | 14-1 | 12-9 | 12-0 | 11-2 | 18-6 | 16-10 | 15-10 | 14-8 | 23-8 | 21-6 | 20-2 | 18-5 | 28-9 | 26-1 | 23-10 | 21-4 |
| | No.1 | 13-8 | 12-5 | 11-8 | 10-4 | 18-0 | 16-0 | 14-7 | 13-0 | 22-6 | 19-6 | 17-10 | 15-11 | 26-1 | 22-7 | 20-8 | 18-6 |
| | No.2 | 13-3 | 12-0 | 11-4 | 10-4 | 17-5 | 15-10 | 14-7 | 13-0 | 22-3 | 19-6 | 17-10 | 15-11 | 26-1 | 22-7 | 20-8 | 18-6 |
| | No.3 | 10-10 | 9-5 | 8-7 | 7-8 | 13-9 | 11-11 | 10-10 | 9-9 | 16-9 | 14-6 | 13-3 | 11-10 | 19-6 | 16-10 | 15-5 | 13-9 |

¹ A 1.25 Duration of Load adjustment has been applied. See page 5.

ROOF RAFTERS

20# LIVE LOAD¹ 15# DEAD LOAD L/180

Table RR-2

Design Criteria: *Strength* - 20 lbs. per sq. ft. live load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | Grade | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 18-0 | 16-4 | 15-5 | 14-3 | 23-9 | 21-7 | 20-1 | 18-0 | 30-4 | 26-11 | 24-7 | 22-0 | 36-1 | 31-3 | 28-6 | 25-6 |
| | No.1 & Btr. | 17-8 | 15-7 | 14-3 | 12-9 | 22-9 | 19-9 | 18-0 | 16-1 | 27-10 | 24-1 | 22-0 | 19-8 | 32-3 | 27-11 | 25-6 | 22-10 |
| | No.1 | 16-5 | 14-3 | 13-0 | 11-7 | 20-9 | 18-0 | 16-5 | 14-8 | 25-5 | 22-0 | 20-1 | 17-11 | 29-5 | 25-6 | 23-3 | 20-10 |
| | No.2 | 15-7 | 13-6 | 12-4 | 11-0 | 19-9 | 17-1 | 15-7 | 13-11 | 24-1 | 20-10 | 19-0 | 17-0 | 27-11 | 24-2 | 22-1 | 19-9 |
| | No.3 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-0 | 11-11 | 10-8 | 18-5 | 15-11 | 14-6 | 13-0 | 21-4 | 18-6 | 16-10 | 15-1 |
| Douglas Fir-South | Sel. Struc. | 16-3 | 14-9 | 13-11 | 12-11 | 21-5 | 19-6 | 18-4 | 17-0 | 27-5 | 24-10 | 23-4 | 20-10 | 33-4 | 29-7 | 27-0 | 24-2 |
| | No.1 | 15-9 | 13-8 | 12-6 | 11-2 | 20-0 | 17-4 | 15-10 | 14-2 | 24-5 | 21-2 | 19-4 | 17-3 | 28-4 | 24-6 | 22-5 | 20-0 |
| | No.2 | 15-2 | 13-1 | 12-0 | 10-8 | 19-2 | 16-7 | 15-2 | 13-7 | 23-5 | 20-3 | 18-6 | 16-7 | 27-2 | 23-6 | 21-5 | 19-2 |
| | No.3 | 11-7 | 10-1 | 9-2 | 8-2 | 14-8 | 12-9 | 11-7 | 10-5 | 17-11 | 15-7 | 14-2 | 12-8 | 20-10 | 18-0 | 16-5 | 14-9 |
| Hem-Fir | Sel. Struc. | 17-0 | 15-6 | 14-7 | 13-6 | 22-5 | 20-5 | 19-2 | 17-5 | 28-7 | 26-0 | 23-9 | 21-3 | 34-10 | 30-2 | 27-6 | 24-8 |
| | No.1 & Btr. | 16-8 | 14-11 | 13-7 | 12-2 | 21-10 | 18-10 | 17-3 | 15-5 | 26-7 | 23-1 | 21-1 | 18-10 | 30-10 | 26-9 | 24-5 | 21-10 |
| | No.1 | 16-2 | 14-0 | 12-10 | 11-5 | 20-6 | 17-9 | 16-3 | 14-6 | 25-1 | 21-8 | 19-10 | 17-9 | 29-1 | 25-2 | 23-0 | 20-7 |
| | No.2 | 15-2 | 13-1 | 12-0 | 10-8 | 19-2 | 16-7 | 15-2 | 13-7 | 23-5 | 20-3 | 18-6 | 16-7 | 27-2 | 23-6 | 21-5 | 19-2 |
| | No.3 | 11-7 | 10-1 | 9-2 | 8-2 | 14-8 | 12-9 | 11-7 | 10-5 | 17-11 | 15-7 | 14-2 | 12-8 | 20-10 | 18-0 | 16-5 | 14-9 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 15-11 | 14-5 | 13-7 | 12-7 | 20-11 | 19-0 | 17-11 | 16-7 | 26-9 | 24-3 | 22-10 | 20-6 | 32-6 | 29-1 | 26-6 | 23-9 |
| | No.1 | 15-4 | 13-3 | 12-2 | 10-10 | 19-5 | 16-10 | 15-4 | 13-9 | 23-9 | 20-7 | 18-9 | 16-9 | 27-6 | 23-10 | 21-9 | 19-6 |
| | No.2 | 14-5 | 12-6 | 11-5 | 10-3 | 18-4 | 15-10 | 14-6 | 12-11 | 22-4 | 19-4 | 17-8 | 15-10 | 25-11 | 22-5 | 20-6 | 18-4 |
| | No.3 | 11-0 | 9-6 | 8-8 | 7-9 | 13-11 | 12-1 | 11-0 | 9-10 | 17-0 | 14-9 | 13-6 | 12-0 | 19-9 | 17-1 | 15-7 | 14-0 |
| Western Woods | Sel. Struc. | 15-6 | 13-6 | 12-4 | 11-0 | 19-9 | 17-1 | 15-7 | 13-11 | 24-1 | 20-10 | 19-0 | 17-0 | 27-11 | 24-2 | 22-1 | 19-9 |
| | No.1 | 13-6 | 11-8 | 10-8 | 9-6 | 17-1 | 14-9 | 13-6 | 12-1 | 20-10 | 18-1 | 16-6 | 14-9 | 24-2 | 20-11 | 19-1 | 17-1 |
| | No.2 | 13-6 | 11-8 | 10-8 | 9-6 | 17-1 | 14-9 | 13-6 | 12-1 | 20-10 | 18-1 | 16-6 | 14-9 | 24-2 | 20-11 | 19-1 | 17-1 |
| | No.3 | 10-1 | 8-8 | 7-11 | 7-1 | 12-9 | 11-0 | 10-1 | 9-0 | 15-7 | 13-6 | 12-3 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 |

¹ A 1.25 Duration of Load adjustment has been applied. See page 5.

ROOF RAFTERS

25# SNOW LOAD 10# DEAD LOAD L/240

Table RR-9

Design Criteria: *Strength* - 25 lbs. per sq. ft. snow load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 15-2 | 13-10 | 13-0 | 12-1 | 20-0 | 18-2 | 17-2 | 15-11 | 25-7 | 23-3 | 21-10 | 20-3 | 31-1 | 28-3 | 26-7 | 24-5 |
| | No.1 & Btr. | 14-11 | 13-7 | 12-9 | 11-10 | 19-8 | 17-11 | 16-10 | 15-5 | 25-1 | 22-10 | 21-1 | 18-10 | 30-6 | 26-9 | 24-5 | 21-10 |
| | No.1 | 14-8 | 13-4 | 12-5 | 11-2 | 19-4 | 17-3 | 15-9 | 14-1 | 24-4 | 21-1 | 19-3 | 17-3 | 28-3 | 24-5 | 22-4 | 20-0 |
| | No.2 | 14-4 | 12-11 | 11-10 | 10-7 | 18-11 | 16-4 | 14-11 | 13-4 | 23-1 | 20-0 | 18-3 | 16-4 | 26-9 | 23-2 | 21-2 | 18-11 |
| | No.3 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 |
| Douglas Fir-South | Sel. Struc. | 13-9 | 12-6 | 11-9 | 10-11 | 18-1 | 16-5 | 15-6 | 14-4 | 23-1 | 21-0 | 19-9 | 18-4 | 28-1 | 25-6 | 24-0 | 22-3 |
| | No.1 | 13-5 | 12-2 | 11-5 | 10-8 | 17-8 | 16-1 | 15-1 | 13-7 | 22-6 | 20-3 | 18-6 | 16-7 | 27-2 | 23-6 | 21-6 | 19-2 |
| | No.2 | 13-1 | 11-10 | 11-2 | 10-3 | 17-2 | 15-7 | 14-6 | 13-0 | 21-11 | 19-5 | 17-9 | 15-10 | 26-0 | 22-6 | 20-7 | 18-5 |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 |
| Hem-Fir | Sel. Struc. | 14-4 | 13-1 | 12-3 | 11-5 | 18-11 | 17-2 | 16-2 | 15-0 | 24-2 | 21-11 | 20-8 | 19-2 | 29-4 | 26-8 | 25-1 | 23-4 |
| | No.1 & Btr. | 14-1 | 12-9 | 12-0 | 11-2 | 18-6 | 16-10 | 15-10 | 14-8 | 23-8 | 21-6 | 20-2 | 18-1 | 28-9 | 25-8 | 23-5 | 20-11 |
| | No.1 | 14-1 | 12-9 | 12-0 | 11-0 | 18-6 | 16-10 | 15-7 | 13-11 | 23-8 | 20-10 | 19-0 | 17-0 | 27-11 | 24-2 | 22-0 | 19-9 |
| | No.2 | 13-5 | 12-2 | 11-5 | 10-3 | 17-8 | 15-11 | 14-6 | 13-0 | 22-5 | 19-5 | 17-9 | 15-10 | 26-0 | 22-6 | 20-7 | 18-5 |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-5 | 12-2 | 11-5 | 10-8 | 17-8 | 16-1 | 15-1 | 14-0 | 22-6 | 20-6 | 19-3 | 17-11 | 27-5 | 24-11 | 23-5 | 21-9 |
| | No.1 | 13-1 | 11-10 | 11-2 | 10-4 | 17-2 | 15-7 | 14-8 | 13-2 | 21-11 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 |
| | No.2 | 12-8 | 11-6 | 10-10 | 9-10 | 16-8 | 15-2 | 13-10 | 12-5 | 21-4 | 18-7 | 16-11 | 15-2 | 24-10 | 21-6 | 19-8 | 17-7 |
| | No.3 | 10-7 | 9-2 | 8-4 | 7-6 | 13-4 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 |
| Western Woods | Sel. Struc. | 13-1 | 11-10 | 11-2 | 10-4 | 17-2 | 15-7 | 14-8 | 13-4 | 21-11 | 19-11 | 18-3 | 16-4 | 26-8 | 23-2 | 21-2 | 18-11 |
| | No.1 | 12-8 | 11-2 | 10-3 | 9-2 | 16-4 | 14-2 | 12-11 | 11-7 | 20-0 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 |
| | No.2 | 12-3 | 11-2 | 10-3 | 9-2 | 16-2 | 14-2 | 12-11 | 11-7 | 20-0 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 12-2 | 10-7 | 9-8 | 8-8 | 14-11 | 12-11 | 11-9 | 10-7 | 17-3 | 15-0 | 13-8 | 12-3 |

ROOF RAFTERS

30# SNOW LOAD 10# DEAD LOAD L/240

Table RR-10

Design Criteria: *Strength* - 30 lbs. per sq. ft. snow load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|-------|-------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 14-4 | 13-0 | 12-3 | 11-4 | 18-10 | 17-2 | 16-1 | 15-0 | 24-1 | 21-10 | 20-7 | 19-1 | 29-3 | 26-7 | 25-0 | 22-10 |
| | No.1 & Btr. | 14-1 | 12-9 | 12-0 | 11-2 | 18-6 | 16-10 | 15-10 | 14-5 | 23-8 | 21-6 | 19-9 | 17-8 | 28-9 | 25-1 | 22-10 | 20-5 |
| | No.1 | 13-9 | 12-6 | 11-8 | 10-5 | 18-2 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 |
| | No.2 | 13-6 | 12-1 | 11-0 | 9-10 | 17-8 | 15-4 | 14-0 | 12-6 | 21-7 | 18-9 | 17-1 | 15-3 | 25-1 | 21-8 | 19-10 | 17-9 |
| | No.3 | 10-8 | 9-3 | 8-5 | 7-7 | 13-6 | 11-8 | 10-8 | 9-7 | 16-6 | 14-3 | 13-1 | 11-8 | 19-2 | 16-7 | 15-2 | 13-6 |
| Douglas Fir-South | Sel. Struc. | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-6 | 21-9 | 19-9 | 18-7 | 17-3 | 26-5 | 24-0 | 22-7 | 21-0 |
| | No.1 | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 12-8 | 21-2 | 19-0 | 17-4 | 15-6 | 25-5 | 22-0 | 20-1 | 18-0 |
| | No.2 | 12-3 | 11-2 | 10-6 | 9-7 | 16-2 | 14-8 | 13-7 | 12-2 | 20-8 | 18-2 | 16-7 | 14-10 | 24-4 | 21-1 | 19-3 | 17-3 |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 |
| Hem-Fir | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-9 | 17-10 | 16-2 | 15-3 | 14-2 | 22-9 | 20-8 | 19-5 | 18-0 | 27-8 | 25-1 | 23-7 | 21-11 |
| | No.1 & Btr. | 13-3 | 12-0 | 11-4 | 10-6 | 17-5 | 15-10 | 14-11 | 13-10 | 22-3 | 20-2 | 18-11 | 16-11 | 27-1 | 24-0 | 21-11 | 19-7 |
| | No.1 | 13-3 | 12-0 | 11-4 | 10-3 | 17-5 | 15-10 | 14-7 | 13-0 | 22-3 | 19-6 | 17-9 | 15-11 | 26-1 | 22-7 | 20-7 | 18-5 |
| | No.2 | 12-7 | 11-5 | 10-9 | 9-7 | 16-7 | 14-11 | 13-7 | 12-2 | 21-0 | 18-2 | 16-7 | 14-10 | 24-4 | 21-1 | 19-3 | 17-3 |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-10 | 25-9 | 23-5 | 22-1 | 20-6 |
| | No.1 | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-9 | 12-4 | 20-8 | 18-5 | 16-10 | 15-1 | 24-8 | 21-5 | 19-6 | 17-6 |
| | No.2 | 11-11 | 10-10 | 10-2 | 9-2 | 15-9 | 14-3 | 13-0 | 11-7 | 20-1 | 17-4 | 15-10 | 14-2 | 23-3 | 20-2 | 18-5 | 16-5 |
| | No.3 | 9-10 | 8-7 | 7-10 | 7-0 | 12-6 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-9 | 15-4 | 14-0 | 12-6 |
| Western Woods | Sel. Struc. | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-6 | 20-8 | 18-9 | 17-1 | 15-3 | 25-1 | 21-8 | 19-10 | 17-9 |
| | No.1 | 11-11 | 10-6 | 9-7 | 8-7 | 15-4 | 13-3 | 12-1 | 10-10 | 18-9 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 |
| | No.2 | 11-7 | 10-6 | 9-7 | 8-7 | 15-3 | 13-3 | 12-1 | 10-10 | 18-9 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 |
| | No.3 | 9-0 | 7-10 | 7-2 | 6-4 | 11-5 | 9-11 | 9-0 | 8-1 | 13-11 | 12-1 | 11-0 | 9-10 | 16-2 | 14-0 | 12-9 | 11-5 |

ROOF RAFTERS

40# SNOW LOAD 10# DEAD LOAD L/240

Table RR-11

Design Criteria: Strength - 40 lbs. per sq. ft. snow load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 13-0 | 11-10 | 11-1 | 10-4 | 17-2 | 15-7 | 14-8 | 13-7 | 21-10 | 19-10 | 18-8 | 17-4 | 26-7 | 24-2 | 22-9 | 20-5 | | |
| | No.1 & Btr. | 12-9 | 11-7 | 10-11 | 10-2 | 16-10 | 15-3 | 14-5 | 12-11 | 21-6 | 19-4 | 17-8 | 15-9 | 25-11 | 22-5 | 20-5 | 18-4 | | |
| | No.1 | 12-6 | 11-5 | 10-5 | 9-4 | 16-6 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.2 | 12-3 | 10-10 | 9-10 | 8-10 | 15-10 | 13-8 | 12-6 | 11-2 | 19-4 | 16-9 | 15-3 | 13-8 | 22-5 | 19-5 | 17-9 | 15-10 | | |
| | No.3 | 9-6 | 8-3 | 7-7 | 6-9 | 12-1 | 10-6 | 9-7 | 8-7 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| Douglas Fir-South | Sel. Struc. | 11-9 | 10-8 | 10-0 | 9-4 | 15-6 | 14-1 | 13-3 | 12-3 | 19-9 | 17-11 | 16-11 | 15-8 | 24-0 | 21-10 | 20-6 | 19-1 | | |
| | No.1 | 11-5 | 10-5 | 9-9 | 8-11 | 15-1 | 13-9 | 12-8 | 11-4 | 19-3 | 17-0 | 15-6 | 13-10 | 22-9 | 19-8 | 18-0 | 16-1 | | |
| | No.2 | 11-2 | 10-2 | 9-6 | 8-7 | 14-8 | 13-4 | 12-2 | 10-10 | 18-9 | 16-3 | 14-10 | 13-3 | 21-9 | 18-10 | 17-3 | 15-5 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Hem-Fir | Sel. Struc. | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-5 | 25-1 | 22-10 | 21-6 | 19-9 | | |
| | No.1 & Btr. | 12-0 | 10-11 | 10-3 | 9-6 | 15-10 | 14-5 | 13-6 | 12-4 | 20-2 | 18-4 | 16-11 | 15-1 | 24-7 | 21-5 | 19-7 | 17-6 | | |
| | No.1 | 12-0 | 10-11 | 10-3 | 9-2 | 15-10 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-3 | 23-4 | 20-2 | 18-5 | 16-6 | | |
| | No.2 | 11-5 | 10-5 | 9-7 | 8-7 | 15-1 | 13-4 | 12-2 | 10-10 | 18-9 | 16-3 | 14-10 | 13-3 | 21-9 | 18-10 | 17-3 | 15-5 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-5 | 10-5 | 9-9 | 9-1 | 15-1 | 13-9 | 12-11 | 12-0 | 19-3 | 17-6 | 16-6 | 15-3 | 23-5 | 21-3 | 20-0 | 18-7 | | |
| | No.1 | 11-2 | 10-2 | 9-6 | 8-9 | 14-8 | 13-4 | 12-4 | 11-0 | 18-9 | 16-6 | 15-1 | 13-6 | 22-1 | 19-2 | 17-6 | 15-7 | | |
| | No.2 | 10-10 | 9-10 | 9-2 | 8-2 | 14-3 | 12-9 | 11-7 | 10-5 | 17-11 | 15-6 | 14-2 | 12-8 | 20-10 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-10 | 7-8 | 7-0 | 6-3 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | | |
| Western Woods | Sel. Struc. | 11-2 | 10-2 | 9-6 | 8-10 | 14-8 | 13-4 | 12-6 | 11-2 | 18-9 | 16-9 | 15-3 | 13-8 | 22-5 | 19-5 | 17-9 | 15-10 | | |
| | No.1 | 10-10 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| | No.2 | 10-6 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | | |

ROOF RAFTERS

60# SNOW LOAD 10# DEAD LOAD L/240

Table RR-12

Design Criteria: Strength - 60 lbs. per sq. ft. snow load, plus 10 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|--------|-------|-------|-------|--------|-------------|-------|--------------|-------------|-------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 15-0 | 13-7 | 12-10 | 11-11 | 19-1 | 17-4 | 16-4 | 14-11 | 23-3 | 21-1 | 19-4 | 17-3 | 27-4 | 23-8 | 21-7 | 19-4 | | |
| | No.1 & Btr. | 14-8 | 13-4 | 12-2 | 10-11 | 18-9 | 16-4 | 14-11 | 13-4 | 21-10 | 18-11 | 17-3 | 15-6 | 24-5 | 21-2 | 19-4 | 17-3 | | |
| | No.1 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | 22-4 | 19-4 | 17-8 | 15-9 | | |
| | No.2 | 13-4 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 | 21-2 | 18-4 | 16-9 | 15-0 | | |
| | No.3 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | 16-2 | 14-0 | 12-9 | 11-5 | | |
| Douglas Fir-South | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-9 | 17-3 | 15-8 | 14-9 | 13-8 | 21-0 | 19-1 | 17-11 | 16-5 | 24-8 | 22-5 | 20-6 | 18-4 | | |
| | No.1 | 13-2 | 11-9 | 10-9 | 9-7 | 16-7 | 14-4 | 13-1 | 11-8 | 19-2 | 16-8 | 15-2 | 13-7 | 21-5 | 18-7 | 17-0 | 15-2 | | |
| | No.2 | 12-10 | 11-3 | 10-3 | 9-2 | 15-10 | 13-9 | 12-7 | 11-3 | 18-5 | 15-11 | 14-7 | 13-0 | 20-7 | 17-10 | 16-3 | 14-6 | | |
| | No.3 | 10-0 | 8-8 | 7-11 | 7-1 | 12-2 | 10-7 | 9-7 | 8-7 | 14-1 | 12-3 | 11-2 | 10-0 | 15-9 | 13-8 | 12-6 | 11-2 | | |
| Hem-Fir | Sel. Struc. | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-4 | 21-11 | 19-11 | 18-8 | 16-8 | 25-10 | 22-10 | 20-10 | 18-8 | | |
| | No.1 & Btr. | 13-10 | 12-7 | 11-8 | 10-5 | 17-8 | 15-8 | 14-3 | 12-9 | 20-11 | 18-2 | 16-7 | 14-10 | 23-5 | 20-3 | 18-6 | 16-7 | | |
| | No.1 | 13-10 | 12-1 | 11-0 | 9-10 | 17-0 | 14-9 | 13-5 | 12-0 | 19-9 | 17-1 | 15-7 | 13-11 | 22-0 | 19-1 | 17-5 | 15-7 | | |
| | No.2 | 13-0 | 11-3 | 10-3 | 9-2 | 15-10 | 13-9 | 12-7 | 11-3 | 18-5 | 15-11 | 14-7 | 13-0 | 20-7 | 17-10 | 16-3 | 14-6 | | |
| | No.3 | 10-0 | 8-8 | 7-11 | 7-1 | 12-2 | 10-7 | 9-7 | 8-7 | 14-1 | 12-3 | 11-2 | 10-0 | 15-9 | 13-8 | 12-6 | 11-2 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-4 | 20-6 | 18-7 | 17-6 | 16-1 | 24-1 | 21-11 | 20-1 | 18-0 | | |
| | No.1 | 12-10 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 | 20-10 | 18-1 | 16-6 | 14-9 | | |
| | No.2 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-1 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | 19-8 | 17-0 | 15-6 | 13-11 | | |
| | No.3 | 9-5 | 8-2 | 7-6 | 6-8 | 11-7 | 10-0 | 9-2 | 8-2 | 13-5 | 11-7 | 10-7 | 9-6 | 15-0 | 12-11 | 11-10 | 10-7 | | |
| Western Woods | Sel. Struc. | 12-10 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 | 21-2 | 18-4 | 16-9 | 15-0 | | |
| | No.1 | 11-7 | 10-0 | 9-2 | 8-2 | 14-2 | 12-3 | 11-2 | 10-0 | 16-5 | 14-2 | 13-0 | 11-7 | 18-4 | 15-10 | 14-6 | 12-11 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-2 | 12-3 | 11-2 | 10-0 | 16-5 | 14-2 | 13-0 | 11-7 | 18-4 | 15-10 | 14-6 | 12-11 | | |
| | No.3 | 8-8 | 7-6 | 6-10 | 6-1 | 10-7 | 9-2 | 8-4 | 7-5 | 12-3 | 10-7 | 9-8 | 8-8 | 13-8 | 11-10 | 10-10 | 9-8 | | |

ROOF RAFTERS

20# SNOW LOAD 7# DEAD LOAD L/180

Table RR-13

Design Criteria: Strength - 20 lbs. per sq. ft. snow load, plus 7 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 18-0 | 16-4 | 15-5 | 14-4 | 23-9 | 21-7 | 20-4 | 18-10 | 30-4 | 27-6 | 25-11 | 24-0 | 36-10 | 33-6 | 31-1 | 27-10 | | |
| | No.1 & Btr. | 17-8 | 16-1 | 15-2 | 13-11 | 23-4 | 21-2 | 19-8 | 17-7 | 29-9 | 26-4 | 24-0 | 21-6 | 35-3 | 30-6 | 27-10 | 24-11 | | |
| | No.1 | 17-4 | 15-6 | 14-2 | 12-8 | 22-8 | 19-8 | 17-11 | 16-1 | 27-9 | 24-0 | 21-11 | 19-7 | 32-2 | 27-10 | 25-5 | 22-9 | | |
| | No.2 | 17-0 | 14-9 | 13-5 | 12-0 | 21-6 | 18-8 | 17-0 | 15-3 | 26-4 | 22-9 | 20-9 | 18-7 | 30-6 | 26-5 | 24-1 | 21-7 | | |
| | No.3 | 13-0 | 11-3 | 10-3 | 9-2 | 16-5 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-2 | 23-3 | 20-2 | 18-5 | 16-6 | | |
| Douglas Fir-South | Sel. Struc. | 16-3 | 14-9 | 13-11 | 12-11 | 21-5 | 19-6 | 18-4 | 17-0 | 27-5 | 24-10 | 23-5 | 21-9 | 33-4 | 30-3 | 28-6 | 26-5 | | |
| | No.1 | 15-11 | 14-5 | 13-7 | 12-2 | 20-11 | 18-11 | 17-3 | 15-5 | 26-8 | 23-1 | 21-1 | 18-10 | 30-11 | 26-9 | 24-5 | 21-10 | | |
| | No.2 | 15-6 | 14-1 | 13-1 | 11-8 | 20-5 | 18-1 | 16-6 | 14-10 | 25-7 | 22-2 | 20-2 | 18-1 | 29-8 | 25-8 | 23-5 | 20-11 | | |
| | No.3 | 12-8 | 11-0 | 10-0 | 9-0 | 16-1 | 13-11 | 12-8 | 11-4 | 19-7 | 17-0 | 15-6 | 13-10 | 22-9 | 19-8 | 18-0 | 16-1 | | |
| Hem-Fir | Sel. Struc. | 17-0 | 15-6 | 14-7 | 13-6 | 17-1 | 20-5 | 19-2 | 17-10 | 28-7 | 26-0 | 24-6 | 22-9 | 34-10 | 31-8 | 29-9 | 26-11 | | |
| | No.1 & Btr. | 16-8 | 15-2 | 14-3 | 13-3 | 16-8 | 19-11 | 18-9 | 16-10 | 28-0 | 25-2 | 23-0 | 20-7 | 33-9 | 29-2 | 26-8 | 23-10 | | |
| | No.1 | 16-8 | 15-2 | 14-0 | 12-6 | 16-8 | 19-5 | 17-9 | 15-10 | 27-4 | 23-8 | 21-8 | 19-4 | 31-9 | 27-6 | 25-1 | 22-5 | | |
| | No.2 | 15-11 | 14-4 | 13-1 | 11-8 | 15-12 | 18-1 | 16-6 | 14-10 | 25-7 | 22-2 | 20-2 | 18-1 | 29-8 | 25-8 | 23-5 | 20-11 | | |
| | No.3 | 12-8 | 11-0 | 10-0 | 9-0 | 16-1 | 13-11 | 12-8 | 11-4 | 19-7 | 17-0 | 15-6 | 13-10 | 22-9 | 19-8 | 18-0 | 16-1 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 15-11 | 14-5 | 13-7 | 12-7 | 20-11 | 19-0 | 17-11 | 16-7 | 26-9 | 24-3 | 22-10 | 21-2 | 32-6 | 29-6 | 27-9 | 25-9 | | |
| | No.1 | 15-6 | 14-1 | 13-3 | 11-10 | 20-5 | 18-5 | 16-9 | 15-0 | 25-11 | 22-5 | 20-6 | 18-4 | 30-1 | 26-0 | 23-9 | 21-3 | | |
| | No.2 | 15-0 | 13-8 | 12-6 | 11-2 | 19-10 | 17-4 | 15-10 | 14-2 | 24-5 | 21-2 | 19-3 | 17-3 | 28-4 | 24-6 | 22-4 | 20-0 | | |
| | No.3 | 12-0 | 10-5 | 9-6 | 8-6 | 15-3 | 13-2 | 12-0 | 10-9 | 18-7 | 16-1 | 14-8 | 13-2 | 21-7 | 18-8 | 17-1 | 15-3 | | |
| Western Woods | Sel. Struc. | 15-6 | 14-1 | 13-3 | 12-0 | 20-5 | 18-6 | 17-0 | 15-3 | 26-0 | 22-9 | 20-9 | 18-7 | 30-6 | 26-5 | 24-1 | 21-7 | | |
| | No.1 | 14-9 | 12-9 | 11-8 | 10-5 | 18-8 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 14-7 | 12-9 | 11-8 | 10-5 | 18-8 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 | | |
| | No.3 | 11-0 | 9-6 | 8-8 | 7-9 | 13-11 | 12-0 | 11-0 | 9-10 | 17-0 | 14-8 | 13-5 | 12-0 | 19-8 | 17-1 | 15-7 | 13-11 | | |

ROOF RAFTERS

25# SNOW LOAD 7# DEAD LOAD L/180

Table RR-14

Design Criteria: Strength - 25 lbs. per sq. ft. snow load, plus 7 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 16-9 | 15-2 | 14-4 | 13-3 | 22-1 | 20-0 | 18-10 | 17-6 | 28-2 | 25-7 | 24-1 | 22-1 | 34-3 | 31-1 | 28-7 | 25-7 | | |
| | No.1 & Btr. | 16-5 | 14-11 | 14-1 | 12-9 | 21-8 | 19-8 | 18-1 | 16-2 | 27-8 | 24-2 | 22-1 | 19-9 | 32-4 | 28-0 | 25-7 | 22-10 | | |
| | No.1 | 16-1 | 14-3 | 13-0 | 11-8 | 20-10 | 18-1 | 16-6 | 14-9 | 25-6 | 22-1 | 20-2 | 18-0 | 29-6 | 25-7 | 23-4 | 20-11 | | |
| | No.2 | 15-7 | 13-6 | 12-4 | 11-0 | 19-9 | 17-1 | 15-8 | 14-0 | 24-2 | 20-11 | 19-1 | 17-1 | 28-0 | 24-3 | 22-2 | 19-10 | | |
| | No.3 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 16-0 | 14-7 | 13-1 | 21-5 | 18-6 | 16-11 | 15-2 | | |
| Douglas Fir-South | Sel. Struc. | 15-1 | 13-9 | 12-11 | 12-0 | 19-11 | 18-1 | 17-0 | 15-10 | 25-5 | 23-1 | 21-9 | 20-2 | 30-11 | 28-1 | 26-5 | 24-3 | | |
| | No.1 | 14-9 | 13-5 | 12-6 | 11-2 | 19-5 | 17-4 | 15-10 | 14-2 | 24-6 | 21-2 | 19-4 | 17-4 | 28-5 | 24-7 | 22-5 | 20-1 | | |
| | No.2 | 14-4 | 13-1 | 12-0 | 10-9 | 18-11 | 16-8 | 15-2 | 13-7 | 23-6 | 20-4 | 18-7 | 16-7 | 27-3 | 23-7 | 21-6 | 19-3 | | |
| | No.3 | 11-8 | 10-1 | 9-2 | 8-3 | 14-9 | 12-9 | 11-8 | 10-5 | 18-0 | 15-7 | 14-3 | 12-9 | 20-11 | 18-1 | 16-6 | 14-9 | | |
| Hem-Fir | Sel. Struc. | 15-10 | 14-4 | 13-6 | 12-6 | 20-10 | 18-11 | 17-10 | 16-6 | 26-7 | 24-2 | 22-9 | 21-1 | 32-4 | 29-4 | 27-7 | 24-8 | | |
| | No.1 & Btr. | 15-6 | 14-1 | 13-3 | 12-2 | 20-5 | 18-6 | 17-3 | 15-5 | 26-0 | 23-2 | 21-1 | 18-11 | 31-0 | 26-10 | 24-6 | 21-11 | | |
| | No.1 | 15-6 | 14-1 | 12-10 | 11-6 | 20-5 | 17-10 | 16-3 | 14-7 | 25-2 | 21-9 | 19-11 | 17-9 | 29-2 | 25-3 | 23-1 | 20-7 | | |
| | No.2 | 14-9 | 13-2 | 12-0 | 10-9 | 19-3 | 16-8 | 15-2 | 13-7 | 23-6 | 20-4 | 18-7 | 16-7 | 27-3 | 23-7 | 21-6 | 19-3 | | |
| | No.3 | 11-8 | 10-1 | 9-2 | 8-3 | 14-9 | 12-9 | 11-8 | 10-5 | 18-0 | 15-7 | 14-3 | 12-9 | 20-11 | 18-1 | 16-6 | 14-9 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 14-9 | 13-5 | 12-7 | 11-8 | 19-5 | 17-8 | 16-7 | 15-5 | 24-10 | 22-6 | 21-2 | 19-8 | 30-2 | 27-5 | 25-9 | 23-10 | | |
| | No.1 | 14-4 | 13-1 | 12-2 | 10-11 | 18-11 | 16-11 | 15-5 | 13-9 | 23-10 | 20-8 | 18-10 | 16-10 | 27-7 | 23-11 | 21-10 | 19-6 | | |
| | No.2 | 13-11 | 12-7 | 11-5 | 10-3 | 18-4 | 15-11 | 14-6 | 13-0 | 22-5 | 19-5 | 17-9 | 15-10 | 26-0 | 22-6 | 20-7 | 18-5 | | |
| | No.3 | 11-0 | 9-7 | 8-9 | 7-10 | 14-0 | 12-1 | 11-1 | 9-11 | 17-1 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| Western Woods | Sel. Struc. | 14-4 | 13-1 | 12-3 | 11-0 | 18-11 | 17-1 | 15-8 | 14-0 | 24-2 | 20-11 | 19-1 | 17-1 | 28-0 | 24-3 | 22-2 | 19-10 | | |
| | No.1 | 13-6 | 11-9 | 10-8 | 9-7 | 17-1 | 14-10 | 13-6 | 12-1 | 20-11 | 18-1 | 16-6 | 14-10 | 24-3 | 21-0 | 19-2 | 17-2 | | |
| | No.2 | 13-6 | 11-9 | 10-8 | 9-7 | 17-1 | 14-10 | 13-6 | 12-1 | 20-11 | 18-1 | 16-6 | 14-10 | 24-3 | 21-0 | 19-2 | 17-2 | | |
| | No.3 | 10-1 | 8-9 | 8-0 | 7-2 | 12-9 | 11-1 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-1 | 15-8 | 14-4 | 12-9 | | |

ROOF RAFTERS

30# SNOW LOAD 7# DEAD LOAD L/180

Table RR-15

Design Criteria: *Strength* - 30 lbs. per sq. ft. snow load, plus 7 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 15-9 | 14-4 | 13-6 | 12-6 | 20-9 | 18-10 | 17-9 | 16-6 | 26-6 | 24-1 | 22-8 | 20-6 | 32-2 | 29-1 | 26-7 | 23-9 | | |
| | No.1 & Btr. | 15-6 | 14-1 | 13-3 | 11-10 | 20-5 | 18-5 | 16-9 | 15-0 | 25-11 | 22-6 | 20-6 | 18-4 | 30-1 | 26-1 | 23-9 | 21-3 | | |
| | No.1 | 15-2 | 13-3 | 12-1 | 10-10 | 19-5 | 16-9 | 15-4 | 13-8 | 23-8 | 20-6 | 18-9 | 16-9 | 27-5 | 23-9 | 21-8 | 19-5 | | |
| | No.2 | 14-6 | 12-7 | 11-6 | 10-3 | 18-5 | 15-11 | 14-6 | 13-0 | 22-6 | 19-5 | 17-9 | 15-11 | 26-1 | 22-7 | 20-7 | 18-5 | | |
| | No.3 | 11-1 | 9-7 | 8-9 | 7-10 | 14-1 | 12-2 | 11-1 | 9-11 | 17-2 | 14-10 | 13-7 | 12-2 | 19-11 | 17-3 | 15-9 | 14-1 | | |
| Douglas Fir-South | Sel. Struc. | 14-3 | 12-11 | 12-2 | 11-3 | 18-9 | 17-0 | 16-0 | 14-11 | 23-11 | 21-9 | 20-5 | 19-0 | 29-1 | 26-5 | 24-10 | 22-7 | | |
| | No.1 | 13-10 | 12-7 | 11-8 | 10-5 | 18-3 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 13-6 | 12-3 | 11-2 | 10-0 | 17-10 | 15-6 | 14-2 | 12-8 | 21-10 | 18-11 | 17-3 | 15-5 | 25-4 | 21-11 | 20-0 | 17-11 | | |
| | No.3 | 10-10 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| Hem-Fir | Sel. Struc. | 14-10 | 13-6 | 12-9 | 11-10 | 19-7 | 17-10 | 16-9 | 15-7 | 25-0 | 22-9 | 21-5 | 19-10 | 30-5 | 27-8 | 25-8 | 23-0 | | |
| | No.1 & Btr. | 14-7 | 13-3 | 12-5 | 11-4 | 19-2 | 17-5 | 16-1 | 14-5 | 24-6 | 21-6 | 19-8 | 17-7 | 28-10 | 24-11 | 22-9 | 20-4 | | |
| | No.1 | 14-7 | 13-1 | 11-11 | 10-8 | 19-2 | 16-7 | 15-2 | 13-6 | 23-5 | 20-3 | 18-6 | 16-6 | 27-1 | 23-6 | 21-5 | 19-2 | | |
| | No.2 | 13-10 | 12-3 | 11-2 | 10-0 | 17-10 | 15-6 | 14-2 | 12-8 | 21-10 | 18-11 | 17-3 | 15-5 | 25-4 | 21-11 | 20-0 | 17-11 | | |
| | No.3 | 10-10 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-10 | 12-7 | 11-10 | 11-0 | 18-3 | 16-7 | 15-8 | 14-6 | 23-4 | 21-2 | 19-11 | 18-6 | 28-5 | 25-9 | 24-3 | 22-2 | | |
| | No.1 | 13-6 | 12-3 | 11-4 | 10-1 | 17-10 | 15-8 | 14-4 | 12-10 | 22-2 | 19-2 | 17-6 | 15-8 | 25-8 | 22-3 | 20-4 | 18-2 | | |
| | No.2 | 13-1 | 11-8 | 10-8 | 9-6 | 17-1 | 14-9 | 13-6 | 12-1 | 20-10 | 18-1 | 16-6 | 14-9 | 24-2 | 20-11 | 19-1 | 17-1 | | |
| | No.3 | 10-3 | 8-11 | 8-1 | 7-3 | 13-0 | 11-3 | 10-3 | 9-2 | 15-11 | 13-9 | 12-7 | 11-3 | 18-5 | 15-11 | 14-7 | 13-0 | | |
| Western Woods | Sel. Struc. | 13-6 | 12-3 | 11-6 | 10-3 | 17-10 | 15-11 | 14-6 | 13-0 | 22-6 | 19-5 | 17-9 | 15-11 | 26-1 | 22-7 | 20-7 | 18-5 | | |
| | No.1 | 12-7 | 10-11 | 9-11 | 8-11 | 15-11 | 13-10 | 12-7 | 11-3 | 19-5 | 16-10 | 15-5 | 13-9 | 22-7 | 19-6 | 17-10 | 15-11 | | |
| | No.2 | 12-7 | 10-11 | 9-11 | 8-11 | 15-11 | 13-10 | 12-7 | 11-3 | 19-5 | 16-10 | 15-5 | 13-9 | 22-7 | 19-6 | 17-10 | 15-11 | | |
| | No.3 | 9-4 | 8-1 | 7-5 | 6-8 | 11-10 | 10-3 | 9-5 | 8-5 | 14-6 | 12-7 | 11-6 | 10-3 | 16-10 | 14-7 | 13-4 | 11-11 | | |

ROOF RAFTERS

40# SNOW LOAD 7# DEAD LOAD L/180

Table RR-16

Design Criteria: *Strength* - 40 lbs. per sq. ft. snow load, plus 7 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 14-4 | 13-0 | 12-3 | 11-4 | 18-10 | 17-2 | 16-1 | 14-11 | 24-1 | 21-10 | 20-4 | 18-2 | 29-3 | 25-10 | 23-7 | 21-1 | | |
| | No.1 & Btr. | 14-1 | 12-9 | 11-9 | 10-6 | 18-6 | 16-4 | 14-11 | 13-4 | 23-0 | 19-11 | 18-2 | 16-3 | 26-8 | 23-1 | 21-1 | 18-10 | | |
| | No.1 | 13-7 | 11-9 | 10-9 | 9-7 | 17-2 | 14-11 | 13-7 | 12-2 | 21-0 | 18-2 | 16-7 | 14-10 | 24-4 | 21-1 | 19-3 | 17-3 | | |
| | No.2 | 12-11 | 11-2 | 10-2 | 9-1 | 16-4 | 14-2 | 12-11 | 11-6 | 19-11 | 17-3 | 15-9 | 14-1 | 23-1 | 20-0 | 18-3 | 16-4 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-6 | 10-10 | 9-10 | 8-10 | 15-3 | 13-2 | 12-0 | 10-9 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| Douglas Fir-South | Sel. Struc. | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-6 | 21-9 | 19-9 | 18-7 | 17-3 | 26-5 | 24-0 | 22-5 | 20-0 | | |
| | No.1 | 12-7 | 11-4 | 10-4 | 9-3 | 16-6 | 14-4 | 13-1 | 11-8 | 20-2 | 17-6 | 16-0 | 14-3 | 23-5 | 20-4 | 18-6 | 16-7 | | |
| | No.2 | 12-3 | 10-10 | 9-11 | 8-10 | 15-10 | 13-9 | 12-6 | 11-3 | 19-4 | 16-9 | 15-4 | 13-8 | 22-6 | 19-5 | 17-9 | 15-11 | | |
| | No.3 | 9-7 | 8-4 | 7-7 | 6-9 | 12-2 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-9 | 10-6 | 17-3 | 14-11 | 13-7 | 12-2 | | |
| Hem-Fir | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-9 | 17-10 | 16-2 | 15-3 | 14-2 | 22-9 | 20-8 | 19-5 | 17-7 | 27-8 | 25-0 | 22-9 | 20-5 | | |
| | No.1 & Btr. | 13-3 | 12-0 | 11-3 | 10-1 | 17-5 | 15-7 | 14-3 | 12-9 | 22-0 | 19-1 | 17-5 | 15-7 | 25-7 | 22-2 | 20-2 | 18-1 | | |
| | No.1 | 13-3 | 11-7 | 10-7 | 9-6 | 17-0 | 14-8 | 13-5 | 12-0 | 20-9 | 18-0 | 16-5 | 14-8 | 24-1 | 20-10 | 19-0 | 17-0 | | |
| | No.2 | 12-6 | 10-10 | 9-11 | 8-10 | 15-10 | 13-9 | 12-6 | 11-3 | 19-4 | 16-9 | 15-4 | 13-8 | 22-6 | 19-5 | 17-9 | 15-11 | | |
| | No.3 | 9-7 | 8-4 | 7-7 | 6-9 | 12-2 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-9 | 10-6 | 17-3 | 14-11 | 13-7 | 12-2 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-10 | 25-9 | 23-5 | 22-0 | 19-8 | | |
| | No.1 | 12-3 | 11-0 | 10-1 | 9-0 | 16-1 | 13-11 | 12-9 | 11-5 | 19-8 | 17-0 | 15-6 | 13-11 | 22-9 | 19-9 | 18-0 | 16-1 | | |
| | No.2 | 11-11 | 10-4 | 9-5 | 8-5 | 15-2 | 13-1 | 12-0 | 10-8 | 18-6 | 16-0 | 14-7 | 13-1 | 21-5 | 18-7 | 16-11 | 15-2 | | |
| | No.3 | 9-1 | 7-11 | 7-2 | 6-5 | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-2 | 10-0 | 16-4 | 14-2 | 12-11 | 11-7 | | |
| Western Woods | Sel. Struc. | 12-3 | 11-2 | 10-2 | 9-1 | 16-2 | 14-2 | 12-11 | 11-6 | 19-11 | 17-3 | 15-9 | 14-1 | 23-1 | 20-0 | 18-3 | 16-4 | | |
| | No.1 | 11-2 | 9-8 | 8-10 | 7-11 | 14-2 | 12-3 | 11-2 | 10-0 | 17-3 | 14-11 | 13-8 | 12-2 | 20-0 | 17-4 | 15-10 | 14-2 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 14-2 | 12-3 | 11-2 | 10-0 | 17-3 | 14-11 | 13-8 | 12-2 | 20-0 | 17-4 | 15-10 | 14-2 | | |
| | No.3 | 8-4 | 7-2 | 6-7 | 5-11 | 10-6 | 9-1 | 8-4 | 7-5 | 12-10 | 11-2 | 10-2 | 9-1 | 14-11 | 12-11 | 11-10 | 10-7 | | |

ROOF RAFTERS

60# SNOW LOAD 7# DEAD LOAD L/180

Table RR-17

Design Criteria: Strength - 60 lbs. per sq. ft. snow load, plus 7 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|--------|-------|-------|-------|--------|-------------|-------|-------------|-------------|-------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 16-6 | 15-0 | 13-11 | 12-6 | 21-0 | 18-8 | 17-0 | 15-3 | 25-0 | 21-8 | 19-9 | 17-8 | 27-11 | 24-2 | 22-1 | 19-9 | | |
| | No.1 & Btr. | 15-9 | 13-8 | 12-6 | 11-2 | 19-3 | 16-8 | 15-3 | 13-8 | 22-4 | 19-4 | 17-8 | 15-10 | 25-0 | 21-8 | 19-9 | 17-8 | | |
| | No.1 | 14-5 | 12-6 | 11-5 | 10-2 | 17-7 | 15-3 | 13-11 | 12-5 | 20-5 | 17-8 | 16-2 | 14-5 | 22-10 | 19-9 | 18-0 | 16-1 | | |
| | No.2 | 13-8 | 11-10 | 10-10 | 9-8 | 16-8 | 14-5 | 13-2 | 11-10 | 19-4 | 16-9 | 15-4 | 13-8 | 21-8 | 18-9 | 17-1 | 15-4 | | |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| Douglas Fir-South | Sel. Struc. | 14-11 | 13-6 | 12-9 | 11-10 | 19-0 | 17-3 | 16-2 | 14-5 | 23-1 | 20-6 | 18-9 | 16-9 | 26-6 | 22-11 | 20-11 | 18-9 | | |
| | No.1 | 13-10 | 12-0 | 10-11 | 9-10 | 16-11 | 14-8 | 13-5 | 12-0 | 19-7 | 17-0 | 15-6 | 13-11 | 21-11 | 19-0 | 17-4 | 15-6 | | |
| | No.2 | 13-3 | 11-6 | 10-6 | 9-5 | 16-3 | 14-1 | 12-10 | 11-6 | 18-10 | 16-4 | 14-10 | 13-4 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.3 | 10-2 | 8-10 | 8-1 | 7-2 | 12-5 | 10-9 | 9-10 | 8-10 | 14-5 | 12-6 | 11-5 | 10-2 | 16-1 | 14-0 | 12-9 | 11-5 | | |
| Hem-Fir | Sel. Struc. | 15-7 | 14-2 | 13-4 | 12-1 | 19-10 | 18-0 | 16-6 | 14-9 | 24-2 | 20-11 | 19-1 | 17-1 | 27-0 | 23-4 | 21-4 | 19-1 | | |
| | No.1 & Btr. | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 16-0 | 14-7 | 13-1 | 21-5 | 18-6 | 16-11 | 15-2 | 23-11 | 20-9 | 18-11 | 16-11 | | |
| | No.1 | 14-3 | 12-4 | 11-3 | 10-1 | 17-5 | 15-1 | 13-9 | 12-3 | 20-2 | 17-5 | 15-11 | 14-3 | 22-6 | 19-6 | 17-10 | 15-11 | | |
| | No.2 | 13-3 | 11-6 | 10-6 | 9-5 | 16-3 | 14-1 | 12-10 | 11-6 | 18-10 | 16-4 | 14-10 | 13-4 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.3 | 10-2 | 8-10 | 8-1 | 7-2 | 12-5 | 10-9 | 9-10 | 8-10 | 14-5 | 12-6 | 11-5 | 10-2 | 16-1 | 14-0 | 12-9 | 11-5 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-10 | 14-2 | 22-6 | 20-2 | 18-5 | 16-5 | 26-0 | 22-6 | 20-7 | 18-5 | | |
| | No.1 | 13-6 | 11-8 | 10-8 | 9-6 | 16-6 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | 21-4 | 18-6 | 16-10 | 15-1 | | |
| | No.2 | 12-8 | 11-0 | 10-0 | 9-0 | 15-6 | 13-5 | 12-3 | 10-11 | 18-0 | 15-7 | 14-2 | 12-8 | 20-1 | 17-5 | 15-10 | 14-2 | | |
| | No.3 | 9-8 | 8-4 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-8 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| Western Woods | Sel. Struc. | 13-8 | 11-10 | 10-10 | 9-8 | 16-8 | 14-5 | 13-2 | 11-10 | 19-4 | 16-9 | 15-4 | 13-8 | 21-8 | 18-9 | 17-1 | 15-4 | | |
| | No.1 | 11-10 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-3 | 16-9 | 14-6 | 13-3 | 11-10 | 18-9 | 16-3 | 14-10 | 13-3 | | |
| | No.2 | 11-10 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-3 | 16-9 | 14-6 | 13-3 | 11-10 | 18-9 | 16-3 | 14-10 | 13-3 | | |
| | No.3 | 8-10 | 7-8 | 7-0 | 6-3 | 10-9 | 9-4 | 8-6 | 7-7 | 12-6 | 10-10 | 9-11 | 8-10 | 14-0 | 12-1 | 11-0 | 9-10 | | |

ROOF RAFTERS

80# SNOW LOAD 7# DEAD LOAD L/180

Table RR-18

Design Criteria: Strength - 80 lbs. per sq. ft. snow load, plus 7 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|--------|-------------|-------|-------------|-------------|--------------|-------|-------------|--------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 15-0 | 13-5 | 12-3 | 10-11 | 18-11 | 16-5 | 14-11 | 13-4 | 21-11 | 19-0 | 17-4 | 15-6 | 24-6 | 21-3 | 19-4 | 17-4 | | |
| | No.1 & Btr. | 13-10 | 12-0 | 10-11 | 9-10 | 16-11 | 14-8 | 13-4 | 12-0 | 19-7 | 17-0 | 15-6 | 13-10 | 21-11 | 19-0 | 17-4 | 15-6 | | |
| | No.1 | 12-8 | 10-11 | 10-0 | 8-11 | 15-5 | 13-4 | 12-2 | 10-11 | 17-11 | 15-6 | 14-2 | 12-8 | 20-0 | 17-4 | 15-10 | 14-2 | | |
| | No.2 | 12-0 | 10-5 | 9-6 | 8-6 | 14-8 | 12-8 | 11-7 | 10-4 | 17-0 | 14-9 | 13-5 | 12-0 | 19-0 | 16-5 | 15-0 | 13-5 | | |
| | No.3 | 9-2 | 7-11 | 7-3 | 6-6 | 11-2 | 9-8 | 8-10 | 7-11 | 13-0 | 11-3 | 10-3 | 9-2 | 14-6 | 12-7 | 11-6 | 10-3 | | |
| Douglas Fir-South | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-5 | 17-3 | 15-6 | 14-2 | 12-8 | 20-10 | 18-0 | 16-5 | 14-9 | 23-3 | 20-2 | 18-5 | 16-5 | | |
| | No.1 | 12-2 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-9 | 10-6 | 17-3 | 14-11 | 13-7 | 12-2 | 19-3 | 16-8 | 15-3 | 13-7 | | |
| | No.2 | 11-8 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 | 18-5 | 16-0 | 14-7 | 13-1 | | |
| | No.3 | 8-11 | 7-9 | 7-1 | 6-4 | 10-11 | 9-5 | 8-8 | 7-9 | 12-8 | 11-0 | 10-0 | 8-11 | 14-2 | 12-3 | 11-2 | 10-0 | | |
| Hem-Fir | Sel. Struc. | 14-2 | 12-10 | 11-10 | 10-7 | 18-0 | 15-10 | 14-5 | 12-11 | 21-2 | 18-4 | 16-9 | 15-0 | 23-8 | 20-6 | 18-9 | 16-9 | | |
| | No.1 & Btr. | 13-3 | 11-6 | 10-6 | 9-5 | 16-2 | 14-0 | 12-10 | 11-5 | 18-9 | 16-3 | 14-10 | 13-3 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.1 | 12-6 | 10-10 | 9-10 | 8-10 | 15-3 | 13-2 | 12-1 | 10-9 | 17-8 | 15-4 | 14-0 | 12-6 | 19-9 | 17-1 | 15-7 | 14-0 | | |
| | No.2 | 11-8 | 10-1 | 9-3 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-4 | 13-1 | 11-8 | 18-5 | 16-0 | 14-7 | 13-1 | | |
| | No.3 | 8-11 | 7-9 | 7-1 | 6-4 | 10-11 | 9-5 | 8-8 | 7-9 | 12-8 | 11-0 | 10-0 | 8-11 | 14-2 | 12-3 | 11-2 | 10-0 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-2 | 12-0 | 11-3 | 10-2 | 16-10 | 15-3 | 13-11 | 12-5 | 20-5 | 17-8 | 16-2 | 14-5 | 22-10 | 19-9 | 18-0 | 16-2 | | |
| | No.1 | 11-10 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-3 | 16-9 | 14-6 | 13-3 | 11-10 | 18-9 | 16-2 | 14-10 | 13-3 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-10 | 13-7 | 11-9 | 10-9 | 9-7 | 15-9 | 13-8 | 12-6 | 11-2 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| | No.3 | 8-6 | 7-4 | 6-8 | 6-0 | 10-4 | 9-0 | 8-2 | 7-4 | 12-0 | 10-5 | 9-6 | 8-6 | 13-5 | 11-7 | 10-7 | 9-6 | | |
| Western Woods | Sel. Struc. | 12-0 | 10-5 | 9-6 | 8-6 | 14-8 | 12-8 | 11-7 | 10-4 | 17-0 | 14-9 | 13-5 | 12-0 | 19-0 | 16-5 | 15-0 | 13-5 | | |
| | No.1 | 10-5 | 9-0 | 8-3 | 7-4 | 12-8 | 11-0 | 10-0 | 9-0 | 14-9 | 12-9 | 11-8 | 10-5 | 16-5 | 14-3 | 13-0 | 11-7 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-4 | 12-8 | 11-0 | 10-0 | 9-0 | 14-9 | 12-9 | 11-8 | 10-5 | 16-5 | 14-3 | 13-0 | 11-7 | | |
| | No.3 | 7-9 | 6-8 | 6-1 | 5-6 | 9-5 | 8-2 | 7-6 | 6-8 | 11-0 | 9-6 | 8-8 | 7-9 | 12-3 | 10-7 | 9-8 | 8-8 | | |

ROOF RAFTERS

100# SNOW LOAD 7# DEAD LOAD L/180

Table RR-19

Design Criteria: *Strength* - 100 lbs. per sq. ft. snow load, plus 7 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 13-11 | 12-1 | 11-0 | 9-10 | 17-1 | 14-9 | 13-6 | 12-1 | 19-9 | 17-2 | 15-8 | 14-0 | 22-1 | 19-2 | 17-6 | 15-7 | | |
| | No.1 & Btr. | 12-6 | 10-10 | 9-10 | 8-10 | 15-3 | 13-3 | 12-1 | 10-9 | 17-8 | 15-4 | 14-0 | 12-6 | 19-9 | 17-1 | 15-7 | 14-0 | | |
| | No.1 | 11-5 | 9-10 | 9-0 | 8-1 | 13-11 | 12-1 | 11-0 | 9-10 | 16-2 | 14-0 | 12-9 | 11-5 | 18-0 | 15-7 | 14-3 | 12-9 | | |
| | No.2 | 10-10 | 9-4 | 8-7 | 7-8 | 13-3 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| | No.3 | 8-3 | 7-2 | 6-6 | 5-10 | 10-1 | 8-9 | 8-0 | 7-2 | 11-8 | 10-2 | 9-3 | 8-3 | 13-1 | 11-4 | 10-4 | 9-3 | | |
| Douglas Fir- South | Sel. Struc. | 12-7 | 11-5 | 10-6 | 9-4 | 16-0 | 14-0 | 12-9 | 11-5 | 18-9 | 16-3 | 14-10 | 13-3 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.1 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-7 | 10-7 | 9-6 | 15-6 | 13-5 | 12-3 | 11-0 | 17-4 | 15-0 | 13-9 | 12-3 | | |
| | No.2 | 10-6 | 9-1 | 8-4 | 7-5 | 12-10 | 11-1 | 10-2 | 9-1 | 14-11 | 12-11 | 11-9 | 10-6 | 16-8 | 14-5 | 13-2 | 11-9 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 9-10 | 8-6 | 7-9 | 7-0 | 11-5 | 9-11 | 9-0 | 8-1 | 12-9 | 11-1 | 10-1 | 9-0 | | |
| Hem-Fir | Sel. Struc. | 13-1 | 11-8 | 10-8 | 9-6 | 16-6 | 14-3 | 13-0 | 11-8 | 19-1 | 16-7 | 15-1 | 13-6 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.1 & Btr. | 11-11 | 10-4 | 9-5 | 8-5 | 14-7 | 12-8 | 11-7 | 10-4 | 16-11 | 14-8 | 13-5 | 12-0 | 18-11 | 16-5 | 15-0 | 13-5 | | |
| | No.1 | 11-3 | 9-9 | 8-11 | 8-0 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-10 | 12-7 | 11-3 | 17-10 | 15-5 | 14-1 | 12-7 | | |
| | No.2 | 10-6 | 9-1 | 8-4 | 7-5 | 12-10 | 11-1 | 10-2 | 9-1 | 14-11 | 12-11 | 11-9 | 10-6 | 16-8 | 14-5 | 13-2 | 11-9 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 9-10 | 8-6 | 7-9 | 7-0 | 11-5 | 9-11 | 9-0 | 8-1 | 12-9 | 11-1 | 10-1 | 9-0 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 12-3 | 11-1 | 10-3 | 9-2 | 15-7 | 13-9 | 12-7 | 11-3 | 18-5 | 15-11 | 14-7 | 13-0 | 20-7 | 17-10 | 16-3 | 14-7 | | |
| | No.1 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | 16-11 | 14-7 | 13-4 | 11-11 | | |
| | No.2 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-3 | 12-4 | 11-3 | 10-1 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| | No.3 | 7-8 | 6-7 | 6-1 | 5-5 | 9-4 | 8-1 | 7-5 | 6-7 | 10-10 | 9-5 | 8-7 | 7-8 | 12-1 | 10-6 | 9-7 | 8-7 | | |
| Western Woods | Sel. Struc. | 10-10 | 9-4 | 8-7 | 7-8 | 13-3 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| | No.1 | 9-4 | 8-1 | 7-5 | 6-7 | 11-5 | 9-11 | 9-1 | 8-1 | 13-3 | 11-6 | 10-6 | 9-5 | 14-10 | 12-10 | 11-9 | 10-6 | | |
| | No.2 | 9-4 | 8-1 | 7-5 | 6-7 | 11-5 | 9-11 | 9-1 | 8-1 | 13-3 | 11-6 | 10-6 | 9-5 | 14-10 | 12-10 | 11-9 | 10-6 | | |
| | No.3 | 7-0 | 6-1 | 5-6 | 4-11 | 8-6 | 7-5 | 6-9 | 6-0 | 9-11 | 8-7 | 7-10 | 7-0 | 11-1 | 9-7 | 8-9 | 7-10 | | |

ROOF RAFTERS

20# SNOW LOAD 15# DEAD LOAD L/180

Table RR-20

Design Criteria: *Strength* - 20 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 18-0 | 16-4 | 15-3 | 13-8 | 23-9 | 21-2 | 19-4 | 17-3 | 29-10 | 25-10 | 23-7 | 21-1 | 34-7 | 29-11 | 27-4 | 24-5 | | |
| | No.1 & Btr. | 17-3 | 14-11 | 13-8 | 12-2 | 21-10 | 18-11 | 17-3 | 15-5 | 26-8 | 23-1 | 21-1 | 18-10 | 30-11 | 26-9 | 24-5 | 21-10 | | |
| | No.1 | 15-9 | 13-8 | 12-5 | 11-2 | 19-11 | 17-3 | 15-9 | 14-1 | 24-4 | 21-1 | 19-3 | 17-3 | 28-3 | 24-5 | 22-4 | 20-0 | | |
| | No.2 | 14-11 | 12-11 | 11-10 | 10-7 | 18-11 | 16-4 | 14-11 | 13-4 | 23-1 | 20-0 | 18-3 | 16-4 | 26-9 | 23-2 | 21-2 | 18-11 | | |
| | No.3 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| Douglas Fir- South | Sel. Struc. | 16-3 | 14-9 | 13-11 | 12-11 | 21-5 | 19-6 | 18-4 | 16-4 | 27-5 | 24-6 | 22-4 | 20-0 | 32-10 | 28-5 | 25-11 | 23-2 | | |
| | No.1 | 15-2 | 13-1 | 12-0 | 10-8 | 19-2 | 16-7 | 15-2 | 13-7 | 23-5 | 20-3 | 18-6 | 16-7 | 27-2 | 23-6 | 21-6 | 19-2 | | |
| | No.2 | 14-6 | 12-7 | 11-6 | 10-3 | 18-4 | 15-11 | 14-6 | 13-0 | 22-5 | 19-5 | 17-9 | 15-10 | 26-0 | 22-6 | 20-7 | 18-5 | | |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | | |
| Hem-Fir | Sel. Struc. | 17-0 | 15-6 | 14-7 | 13-2 | 22-5 | 20-5 | 18-8 | 16-8 | 28-7 | 24-11 | 22-9 | 20-4 | 33-5 | 28-11 | 26-5 | 23-7 | | |
| | No.1 & Btr. | 16-6 | 14-4 | 13-1 | 11-8 | 20-11 | 18-1 | 16-6 | 14-9 | 25-6 | 22-1 | 20-2 | 18-1 | 29-7 | 25-8 | 23-5 | 20-11 | | |
| | No.1 | 15-6 | 13-5 | 12-3 | 11-0 | 19-8 | 17-1 | 15-7 | 13-11 | 24-0 | 20-10 | 19-0 | 17-0 | 27-11 | 24-2 | 22-0 | 19-9 | | |
| | No.2 | 14-6 | 12-7 | 11-6 | 10-3 | 18-4 | 15-11 | 14-6 | 13-0 | 22-5 | 19-5 | 17-9 | 15-10 | 26-0 | 22-6 | 20-7 | 18-5 | | |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 15-11 | 14-5 | 13-7 | 12-7 | 20-11 | 19-0 | 17-11 | 16-1 | 26-9 | 24-0 | 21-11 | 19-8 | 32-2 | 27-11 | 25-5 | 22-9 | | |
| | No.1 | 14-9 | 12-9 | 11-8 | 10-5 | 18-8 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 13-10 | 12-0 | 10-11 | 9-10 | 17-7 | 15-2 | 13-10 | 12-5 | 21-5 | 18-7 | 16-11 | 15-2 | 24-10 | 21-6 | 19-8 | 17-7 | | |
| | No.3 | 10-7 | 9-2 | 8-4 | 7-6 | 13-4 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 | | |
| Western Woods | Sel. Struc. | 14-11 | 12-11 | 11-10 | 10-7 | 18-11 | 16-4 | 14-11 | 13-4 | 23-1 | 20-0 | 18-3 | 16-4 | 26-9 | 23-2 | 21-2 | 18-11 | | |
| | No.1 | 12-11 | 11-2 | 10-3 | 9-2 | 16-4 | 14-2 | 12-11 | 11-7 | 20-0 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 | | |
| | No.2 | 12-11 | 11-2 | 10-3 | 9-2 | 16-4 | 14-2 | 12-11 | 11-7 | 20-0 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 12-2 | 10-7 | 9-8 | 8-8 | 14-11 | 12-11 | 11-9 | 10-7 | 17-3 | 15-0 | 13-8 | 12-3 | | |

ROOF RAFTERS

25# SNOW LOAD 15# DEAD LOAD L/180

Table RR-21

Design Criteria: Strength - 25 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 16-9 | 15-2 | 14-3 | 12-9 | 22-1 | 19-9 | 18-1 | 16-2 | 27-11 | 24-2 | 22-1 | 19-9 | 32-4 | 28-0 | 25-7 | 22-10 | | |
| | No.1 & Btr. | 16-2 | 14-0 | 12-9 | 11-5 | 20-5 | 17-8 | 16-2 | 14-5 | 24-11 | 21-7 | 19-9 | 17-8 | 28-11 | 25-1 | 22-10 | 20-5 | | |
| | No.1 | 14-9 | 12-9 | 11-8 | 10-5 | 18-8 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 14-0 | 12-1 | 11-0 | 9-10 | 17-8 | 15-4 | 14-0 | 12-6 | 21-7 | 18-9 | 17-1 | 15-3 | 25-1 | 21-8 | 19-10 | 17-9 | | |
| | No.3 | 10-8 | 9-3 | 8-5 | 7-7 | 13-6 | 11-8 | 10-8 | 9-7 | 16-6 | 14-3 | 13-1 | 11-8 | 19-2 | 16-7 | 15-2 | 13-6 | | |
| Douglas Fir-South | Sel. Struc. | 15-1 | 13-9 | 12-11 | 12-0 | 19-11 | 18-1 | 17-0 | 15-4 | 25-5 | 22-11 | 20-11 | 18-9 | 30-8 | 26-7 | 24-3 | 21-8 | | |
| | No.1 | 14-2 | 12-3 | 11-2 | 10-0 | 17-11 | 15-6 | 14-2 | 12-8 | 21-11 | 19-0 | 17-4 | 15-6 | 25-5 | 22-0 | 20-1 | 18-0 | | |
| | No.2 | 13-7 | 11-9 | 10-9 | 9-7 | 17-2 | 14-11 | 13-7 | 12-2 | 21-0 | 18-2 | 16-7 | 14-10 | 24-4 | 21-1 | 19-3 | 17-3 | | |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| Hem-Fir | Sel. Struc. | 15-10 | 14-4 | 13-6 | 12-4 | 20-10 | 18-11 | 17-5 | 15-7 | 26-7 | 23-4 | 21-4 | 19-1 | 31-3 | 27-1 | 24-8 | 22-1 | | |
| | No.1 & Btr. | 15-5 | 13-4 | 12-2 | 10-11 | 19-7 | 16-11 | 15-5 | 13-10 | 23-11 | 20-8 | 18-11 | 16-11 | 27-8 | 24-0 | 21-11 | 19-7 | | |
| | No.1 | 14-6 | 12-7 | 11-6 | 10-3 | 18-5 | 15-11 | 14-7 | 13-0 | 22-6 | 19-6 | 17-9 | 15-11 | 26-1 | 22-7 | 20-7 | 18-5 | | |
| | No.2 | 13-7 | 11-9 | 10-9 | 9-7 | 17-2 | 14-11 | 13-7 | 12-2 | 21-0 | 18-2 | 16-7 | 14-10 | 24-4 | 21-1 | 19-3 | 17-3 | | |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 14-9 | 13-5 | 12-7 | 11-8 | 19-5 | 17-8 | 16-7 | 15-0 | 24-10 | 22-6 | 20-6 | 18-4 | 30-1 | 26-1 | 23-10 | 21-3 | | |
| | No.1 | 13-9 | 11-11 | 10-11 | 9-9 | 17-5 | 15-1 | 13-9 | 12-4 | 21-4 | 18-5 | 16-10 | 15-1 | 24-8 | 21-5 | 19-6 | 17-6 | | |
| | No.2 | 13-0 | 11-3 | 10-3 | 9-2 | 16-5 | 14-3 | 13-0 | 11-7 | 20-1 | 17-4 | 15-10 | 14-2 | 23-3 | 20-2 | 18-5 | 16-5 | | |
| | No.3 | 9-10 | 8-7 | 7-10 | 7-0 | 12-6 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-9 | 15-4 | 14-0 | 12-6 | | |
| Western Woods | Sel. Struc. | 14-0 | 12-1 | 11-0 | 9-10 | 17-8 | 15-4 | 14-0 | 12-6 | 21-7 | 18-9 | 17-1 | 15-3 | 25-1 | 21-8 | 19-10 | 17-9 | | |
| | No.1 | 12-1 | 10-6 | 9-7 | 8-7 | 15-4 | 13-3 | 12-1 | 10-10 | 18-9 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 | | |
| | No.2 | 12-1 | 10-6 | 9-7 | 8-7 | 15-4 | 13-3 | 12-1 | 10-10 | 18-9 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 | | |
| | No.3 | 9-0 | 7-10 | 7-2 | 6-4 | 11-5 | 9-11 | 9-0 | 8-1 | 13-11 | 12-1 | 11-0 | 9-10 | 16-2 | 14-0 | 12-9 | 11-5 | | |

ROOF RAFTERS

30# SNOW LOAD 15# DEAD LOAD L/180

Table RR-22

Design Criteria: Strength - 30 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 15-9 | 14-4 | 13-5 | 12-0 | 20-9 | 18-8 | 17-0 | 15-3 | 26-4 | 22-9 | 20-9 | 18-7 | 30-6 | 26-5 | 24-1 | 21-7 | | |
| | No.1 & Btr. | 15-2 | 13-2 | 12-0 | 10-9 | 19-3 | 16-8 | 15-3 | 13-7 | 23-6 | 20-4 | 18-7 | 16-8 | 27-3 | 23-7 | 21-7 | 19-3 | | |
| | No.1 | 13-11 | 12-0 | 11-0 | 9-10 | 17-7 | 15-3 | 13-11 | 12-5 | 21-6 | 18-7 | 17-0 | 15-2 | 24-11 | 21-7 | 19-8 | 17-7 | | |
| | No.2 | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.3 | 10-1 | 8-9 | 7-11 | 7-1 | 12-9 | 11-0 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | | |
| Douglas Fir-South | Sel. Struc. | 14-3 | 12-11 | 12-2 | 11-3 | 18-9 | 17-0 | 16-0 | 14-5 | 23-11 | 21-7 | 19-9 | 17-8 | 28-11 | 25-1 | 22-10 | 20-5 | | |
| | No.1 | 13-4 | 11-7 | 10-7 | 9-5 | 16-11 | 14-8 | 13-4 | 11-11 | 20-8 | 17-11 | 16-4 | 14-7 | 23-11 | 20-9 | 18-11 | 16-11 | | |
| | No.2 | 12-10 | 11-1 | 10-1 | 9-1 | 16-2 | 14-0 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-0 | 22-11 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Hem-Fir | Sel. Struc. | 14-10 | 13-6 | 12-9 | 11-7 | 19-7 | 17-10 | 16-5 | 14-8 | 25-0 | 22-0 | 20-1 | 18-0 | 29-6 | 25-6 | 23-3 | 20-10 | | |
| | No.1 & Btr. | 14-7 | 12-7 | 11-6 | 10-4 | 18-5 | 16-0 | 14-7 | 13-0 | 22-6 | 19-6 | 17-10 | 15-11 | 26-1 | 22-7 | 20-8 | 18-6 | | |
| | No.1 | 13-8 | 11-10 | 10-10 | 9-8 | 17-4 | 15-0 | 13-9 | 12-3 | 21-2 | 18-4 | 16-9 | 15-0 | 24-7 | 21-3 | 19-5 | 17-5 | | |
| | No.2 | 12-10 | 11-1 | 10-1 | 9-1 | 16-2 | 14-0 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-0 | 22-11 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-10 | 12-7 | 11-10 | 11-0 | 18-3 | 16-7 | 15-8 | 14-2 | 23-4 | 21-2 | 19-4 | 17-4 | 28-5 | 24-7 | 22-5 | 20-1 | | |
| | No.1 | 13-0 | 11-3 | 10-3 | 9-2 | 16-5 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-2 | 23-3 | 20-2 | 18-5 | 16-6 | | |
| | No.2 | 12-3 | 10-7 | 9-8 | 8-8 | 15-6 | 13-5 | 12-3 | 10-11 | 18-11 | 16-4 | 14-11 | 13-4 | 21-11 | 19-0 | 17-4 | 15-6 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Western Woods | Sel. Struc. | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.2 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.3 | 8-6 | 7-4 | 6-9 | 6-0 | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-2 | 12-1 | 10-9 | | |

ROOF RAFTERS

40# SNOW LOAD 15# DEAD LOAD L/180

Table RR-23

Design Criteria: Strength - 40 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 14-4 | 13-0 | 12-2 | 10-10 | 18-10 | 16-10 | 15-5 | 13-9 | 23-9 | 20-7 | 18-10 | 16-10 | 27-7 | 23-11 | 21-10 | 19-6 | | |
| | No.1 & Btr. | 13-9 | 11-11 | 10-10 | 9-9 | 17-5 | 15-1 | 13-9 | 12-4 | 21-3 | 18-5 | 16-10 | 15-1 | 24-8 | 21-4 | 19-6 | 17-5 | | |
| | No.1 | 12-7 | 10-10 | 9-11 | 8-11 | 15-11 | 13-9 | 12-7 | 11-3 | 19-5 | 16-10 | 15-4 | 13-9 | 22-6 | 19-6 | 17-10 | 15-11 | | |
| | No.2 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.3 | 9-1 | 7-11 | 7-2 | 6-5 | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-1 | 9-11 | 16-4 | 14-2 | 12-11 | 11-6 | | |
| Douglas Fir- South | Sel. Struc. | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-1 | 21-9 | 19-7 | 17-10 | 15-11 | 26-2 | 22-8 | 20-8 | 18-6 | | |
| | No.1 | 12-1 | 10-5 | 9-7 | 8-6 | 15-3 | 13-3 | 12-1 | 10-10 | 18-8 | 16-2 | 14-9 | 13-2 | 21-8 | 18-9 | 17-1 | 15-4 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Hem-Fir | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-6 | 17-10 | 16-2 | 14-10 | 13-4 | 22-9 | 19-11 | 18-2 | 16-3 | 26-8 | 23-1 | 21-1 | 18-10 | | |
| | No.1 & Btr. | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 12-5 | 10-9 | 9-10 | 8-9 | 15-8 | 13-7 | 12-5 | 11-1 | 19-2 | 16-7 | 15-2 | 13-7 | 22-3 | 19-3 | 17-7 | 15-9 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 12-10 | 21-2 | 19-2 | 17-6 | 15-8 | 25-8 | 22-3 | 20-4 | 18-2 | | |
| | No.1 | 11-9 | 10-2 | 9-3 | 8-4 | 14-10 | 12-11 | 11-9 | 10-6 | 18-2 | 15-9 | 14-4 | 12-10 | 21-1 | 18-3 | 16-8 | 14-11 | | |
| | No.2 | 11-1 | 9-7 | 8-9 | 7-10 | 14-0 | 12-1 | 11-1 | 9-11 | 17-1 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 5-11 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Western Woods | Sel. Struc. | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.1 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.2 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 9-9 | 8-5 | 7-8 | 6-11 | 11-11 | 10-4 | 9-5 | 8-5 | 13-9 | 11-11 | 10-11 | 9-9 | | |

ROOF RAFTERS

60# SNOW LOAD 15# DEAD LOAD L/180

Table RR-24

Design Criteria: Strength - 60 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------------|-------|-------|-------------|-------------|-------|-------------|-------------|-------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 16-6 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | 26-5 | 22-10 | 20-10 | 18-8 | | |
| | No.1 & Btr. | 14-11 | 12-11 | 11-9 | 10-7 | 18-3 | 15-9 | 14-5 | 12-11 | 21-2 | 18-4 | 16-8 | 14-11 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 13-7 | 11-9 | 10-9 | 9-8 | 16-8 | 14-5 | 13-2 | 11-9 | 19-3 | 16-8 | 15-3 | 13-8 | 21-7 | 18-8 | 17-0 | 15-3 | | |
| | No.2 | 12-11 | 11-2 | 10-3 | 9-2 | 15-9 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| | No.3 | 9-10 | 8-7 | 7-10 | 7-0 | 12-1 | 10-5 | 9-6 | 8-6 | 14-0 | 12-1 | 11-1 | 9-11 | 15-7 | 13-6 | 12-4 | 11-0 | | |
| Douglas Fir- South | Sel. Struc. | 14-11 | 13-6 | 12-6 | 11-2 | 19-0 | 16-9 | 15-3 | 13-8 | 22-5 | 19-5 | 17-9 | 15-10 | 25-0 | 21-8 | 19-10 | 17-8 | | |
| | No.1 | 13-1 | 11-4 | 10-4 | 9-3 | 16-0 | 13-10 | 12-8 | 11-4 | 18-7 | 16-1 | 14-8 | 13-1 | 20-9 | 17-11 | 16-5 | 14-8 | | |
| | No.2 | 12-7 | 10-10 | 9-11 | 8-11 | 15-4 | 13-3 | 12-1 | 10-10 | 17-9 | 15-5 | 14-1 | 12-7 | 19-10 | 17-2 | 15-8 | 14-1 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 11-9 | 10-2 | 9-4 | 8-4 | 13-8 | 11-10 | 10-9 | 9-8 | 15-3 | 13-2 | 12-1 | 10-9 | | |
| Hem-Fir | Sel. Struc. | 15-7 | 13-11 | 12-9 | 11-5 | 19-8 | 17-1 | 15-7 | 13-11 | 22-10 | 19-9 | 18-0 | 16-2 | 25-6 | 22-1 | 20-2 | 18-0 | | |
| | No.1 & Btr. | 14-3 | 12-4 | 11-3 | 10-1 | 17-5 | 15-1 | 13-9 | 12-4 | 20-3 | 17-6 | 16-0 | 14-4 | 22-7 | 19-7 | 17-10 | 16-0 | | |
| | No.1 | 13-5 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-7 | 19-1 | 16-6 | 15-1 | 13-6 | 21-3 | 18-5 | 16-10 | 15-1 | | |
| | No.2 | 12-7 | 10-10 | 9-11 | 8-11 | 15-4 | 13-3 | 12-1 | 10-10 | 17-9 | 15-5 | 14-1 | 12-7 | 19-10 | 17-2 | 15-8 | 14-1 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 11-9 | 10-2 | 9-4 | 8-4 | 13-8 | 11-10 | 10-9 | 9-8 | 15-3 | 13-2 | 12-1 | 10-9 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 14-6 | 13-2 | 12-3 | 11-0 | 18-6 | 16-5 | 15-0 | 13-5 | 22-0 | 19-1 | 17-5 | 15-7 | 24-7 | 21-3 | 19-5 | 17-4 | | |
| | No.1 | 12-9 | 11-0 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | 20-2 | 17-5 | 15-11 | 14-3 | | |
| | No.2 | 12-0 | 10-5 | 9-6 | 8-6 | 14-8 | 12-8 | 11-7 | 10-4 | 17-0 | 14-8 | 13-5 | 12-0 | 19-0 | 16-5 | 15-0 | 13-5 | | |
| | No.3 | 9-2 | 7-11 | 7-3 | 6-5 | 11-2 | 9-8 | 8-10 | 7-11 | 12-11 | 11-2 | 10-3 | 9-2 | 14-5 | 12-6 | 11-5 | 10-3 | | |
| Western Woods | Sel. Struc. | 12-11 | 11-2 | 10-3 | 9-2 | 15-9 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| | No.1 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 | | |
| | No.3 | 8-4 | 7-3 | 6-7 | 5-11 | 10-2 | 8-10 | 8-1 | 7-2 | 11-10 | 10-3 | 9-4 | 8-4 | 13-2 | 11-5 | 10-5 | 9-4 | | |

ROOF RAFTERS

80# SNOW LOAD 15# DEAD LOAD L/180

Table RR-25

Design Criteria: Strength - 80 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------------|--------------|-------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 14-10 | 12-10 | 11-9 | 10-6 | 18-1 | 15-8 | 14-4 | 12-10 | 21-0 | 18-2 | 16-7 | 14-10 | 23-5 | 20-4 | 18-6 | 16-7 | | |
| | No.1 & Btr. | 13-3 | 11-6 | 10-6 | 9-4 | 16-2 | 14-0 | 12-10 | 11-5 | 18-9 | 16-3 | 14-10 | 13-3 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.1 | 12-1 | 10-6 | 9-7 | 8-7 | 14-9 | 12-10 | 11-8 | 10-5 | 17-2 | 14-10 | 13-7 | 12-1 | 19-2 | 16-7 | 15-2 | 13-6 | | |
| | No.2 | 11-6 | 9-11 | 9-1 | 8-1 | 14-0 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.3 | 8-9 | 7-7 | 6-11 | 6-2 | 10-8 | 9-3 | 8-6 | 7-7 | 12-5 | 10-9 | 9-10 | 8-9 | 13-10 | 12-0 | 11-0 | 9-10 | | |
| Douglas Fir-South | Sel. Struc. | 13-6 | 12-2 | 11-1 | 9-11 | 17-2 | 14-10 | 13-7 | 12-2 | 19-11 | 17-3 | 15-9 | 14-1 | 22-3 | 19-3 | 17-7 | 15-9 | | |
| | No.1 | 11-8 | 10-1 | 9-2 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-3 | 13-0 | 11-8 | 18-5 | 15-11 | 14-7 | 13-0 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 13-7 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| | No.3 | 8-7 | 7-5 | 6-9 | 6-1 | 10-5 | 9-1 | 8-3 | 7-5 | 12-1 | 10-6 | 9-7 | 8-7 | 13-6 | 11-9 | 10-8 | 9-7 | | |
| Hem-Fir | Sel. Struc. | 14-2 | 12-5 | 11-4 | 10-1 | 17-6 | 15-2 | 13-10 | 12-4 | 20-3 | 17-7 | 16-0 | 14-4 | 22-8 | 19-7 | 17-11 | 16-0 | | |
| | No.1 & Btr. | 12-8 | 11-0 | 10-0 | 9-0 | 15-6 | 13-5 | 12-3 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | 20-1 | 17-5 | 15-11 | 14-2 | | |
| | No.1 | 11-11 | 10-4 | 9-5 | 8-5 | 14-7 | 12-8 | 11-6 | 10-4 | 16-11 | 14-8 | 13-5 | 12-0 | 18-11 | 16-4 | 14-11 | 13-4 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 13-7 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| | No.3 | 8-7 | 7-5 | 6-9 | 6-1 | 10-5 | 9-1 | 8-3 | 7-5 | 12-1 | 10-6 | 9-7 | 8-7 | 13-6 | 11-9 | 10-8 | 9-7 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-2 | 11-11 | 10-11 | 9-9 | 16-10 | 14-7 | 13-4 | 11-11 | 19-6 | 16-11 | 15-5 | 13-10 | 21-10 | 18-11 | 17-3 | 15-5 | | |
| | No.1 | 11-4 | 9-10 | 8-11 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-0 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-3 | 9-2 | 15-1 | 13-1 | 11-11 | 10-8 | 16-10 | 14-7 | 13-4 | 11-11 | | |
| | No.3 | 8-1 | 7-0 | 6-5 | 5-9 | 9-11 | 8-7 | 7-10 | 7-0 | 11-6 | 9-11 | 9-1 | 8-2 | 12-10 | 11-1 | 10-2 | 9-1 | | |
| Western Woods | Sel. Struc. | 11-6 | 9-11 | 9-1 | 8-1 | 14-0 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.1 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 | | |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-1 | 7-10 | 7-2 | 6-5 | 10-6 | 9-1 | 8-4 | 7-5 | 11-9 | 10-2 | 9-3 | 8-3 | | |

ROOF RAFTERS

100# SNOW LOAD 15# DEAD LOAD L/180

Table RR-26

Design Criteria: Strength - 100 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 180 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------------|-------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 13-6 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | 21-4 | 18-5 | 16-10 | 15-1 | | |
| | No.1 & Btr. | 12-1 | 10-5 | 9-6 | 8-6 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.1 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-5 | 7-8 | 6-11 | 11-3 | 9-9 | 8-11 | 8-0 | 12-7 | 10-11 | 10-0 | 8-11 | | |
| Douglas Fir-South | Sel. Struc. | 12-7 | 11-1 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-1 | 15-8 | 14-4 | 12-10 | 20-3 | 17-6 | 16-0 | 14-4 | | |
| | No.1 | 10-7 | 9-2 | 8-4 | 7-6 | 12-11 | 11-2 | 10-3 | 9-2 | 15-0 | 13-0 | 11-10 | 10-7 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Hem-Fir | Sel. Struc. | 13-0 | 11-3 | 10-3 | 9-2 | 15-11 | 13-9 | 12-7 | 11-3 | 18-5 | 16-0 | 14-7 | 13-0 | 20-7 | 17-10 | 16-3 | 14-7 | | |
| | No.1 & Btr. | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-2 | 10-0 | 16-4 | 14-2 | 12-11 | 11-7 | 18-3 | 15-10 | 14-5 | 12-11 | | |
| | No.1 | 10-10 | 9-5 | 8-7 | 7-8 | 13-3 | 11-6 | 10-6 | 9-5 | 15-5 | 13-4 | 12-2 | 10-10 | 17-2 | 14-11 | 13-7 | 12-2 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-3 | 10-10 | 9-11 | 8-10 | 15-4 | 13-3 | 12-1 | 10-10 | 17-9 | 15-5 | 14-0 | 12-7 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.1 | 10-3 | 8-11 | 8-2 | 7-3 | 12-7 | 10-11 | 9-11 | 8-11 | 14-7 | 12-7 | 11-6 | 10-4 | 16-3 | 14-1 | 12-10 | 11-6 | | |
| | No.2 | 9-8 | 8-5 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-9 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-0 | 7-10 | 7-1 | 6-4 | 10-5 | 9-1 | 8-3 | 7-5 | 11-8 | 10-1 | 9-3 | 8-3 | | |
| Western Woods | Sel. Struc. | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.1 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.2 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.3 | 6-9 | 5-10 | 5-4 | 4-9 | 8-3 | 7-1 | 6-6 | 5-10 | 9-6 | 8-3 | 7-6 | 6-9 | 10-8 | 9-3 | 8-5 | 7-6 | | |

ROOF RAFTERS

20# SNOW LOAD 15# DEAD LOAD L/240

Table RR-27

Design Criteria: *Strength* - 20 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir- Larch | Sel. Struc. | 16-4 | 14-11 | 14-0 | 13-0 | 21-7 | 19-7 | 18-5 | 17-2 | 27-6 | 25-0 | 23-7 | 21-1 | 33-6 | 29-11 | 27-4 | 24-5 | | |
| | No.1 & Btr. | 16-1 | 14-7 | 13-8 | 12-2 | 21-2 | 18-11 | 17-3 | 15-5 | 26-8 | 23-1 | 21-1 | 18-10 | 30-11 | 26-9 | 24-5 | 21-10 | | |
| | No.1 | 15-9 | 13-8 | 12-5 | 11-2 | 19-11 | 17-3 | 15-9 | 14-1 | 24-4 | 21-1 | 19-3 | 17-3 | 28-3 | 24-5 | 22-4 | 20-0 | | |
| | No.2 | 14-11 | 12-11 | 11-10 | 10-7 | 18-11 | 16-4 | 14-11 | 13-4 | 23-1 | 20-0 | 18-3 | 16-4 | 26-9 | 23-2 | 21-2 | 18-11 | | |
| | No.3 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| Douglas Fir- South | Sel. Struc. | 14-9 | 13-5 | 12-8 | 11-9 | 19-6 | 17-9 | 16-8 | 15-6 | 24-10 | 22-7 | 21-3 | 19-9 | 30-3 | 27-6 | 25-10 | 23-2 | | |
| | No.1 | 14-5 | 13-1 | 12-0 | 10-8 | 19-0 | 16-7 | 15-2 | 13-7 | 23-5 | 20-3 | 18-6 | 16-7 | 27-2 | 23-6 | 21-6 | 19-2 | | |
| | No.2 | 14-1 | 12-7 | 11-6 | 10-3 | 18-4 | 15-11 | 14-6 | 13-0 | 22-5 | 19-5 | 17-9 | 15-10 | 26-0 | 22-6 | 20-7 | 18-5 | | |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | | |
| Hem-Fir | Sel. Struc. | 15-6 | 14-1 | 13-3 | 12-3 | 20-5 | 18-6 | 17-5 | 16-2 | 26-0 | 23-8 | 22-3 | 20-4 | 31-8 | 28-9 | 26-5 | 23-7 | | |
| | No.1 & Btr. | 15-2 | 13-9 | 12-11 | 11-8 | 19-11 | 18-1 | 16-6 | 14-9 | 25-5 | 22-1 | 20-2 | 18-1 | 29-7 | 25-8 | 23-5 | 20-11 | | |
| | No.1 | 15-2 | 13-5 | 12-3 | 11-0 | 19-8 | 17-1 | 15-7 | 13-11 | 24-0 | 20-10 | 19-0 | 17-0 | 27-11 | 24-2 | 22-0 | 19-9 | | |
| | No.2 | 14-5 | 12-7 | 11-6 | 10-3 | 18-4 | 15-11 | 14-6 | 13-0 | 22-5 | 19-5 | 17-9 | 15-10 | 26-0 | 22-6 | 20-7 | 18-5 | | |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 14-5 | 13-1 | 12-4 | 11-5 | 19-0 | 17-3 | 16-3 | 15-1 | 24-3 | 22-1 | 20-9 | 19-3 | 29-6 | 26-10 | 25-3 | 22-9 | | |
| | No.1 | 14-1 | 12-9 | 11-8 | 10-5 | 18-6 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 13-8 | 12-0 | 10-11 | 9-10 | 17-7 | 15-2 | 13-10 | 12-5 | 21-5 | 18-7 | 16-11 | 15-2 | 24-10 | 21-6 | 19-8 | 17-7 | | |
| | No.3 | 10-7 | 9-2 | 8-4 | 7-6 | 13-4 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 | | |
| Western Woods | Sel. Struc. | 14-1 | 12-9 | 11-10 | 10-7 | 18-6 | 16-4 | 14-11 | 13-4 | 23-1 | 20-0 | 18-3 | 16-4 | 26-9 | 23-2 | 21-2 | 18-11 | | |
| | No.1 | 12-11 | 11-2 | 10-3 | 9-2 | 16-4 | 14-2 | 12-11 | 11-7 | 20-0 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 | | |
| | No.2 | 12-11 | 11-2 | 10-3 | 9-2 | 16-4 | 14-2 | 12-11 | 11-7 | 20-0 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 12-2 | 10-7 | 9-8 | 8-8 | 14-11 | 12-11 | 11-9 | 10-7 | 17-3 | 15-0 | 13-8 | 12-3 | | |

ROOF RAFTERS

25# SNOW LOAD 15# DEAD LOAD L/240

Table RR-28

Design Criteria: *Strength* - 25 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir- Larch | Sel. Struc. | 15-2 | 13-10 | 13-0 | 12-1 | 20-0 | 18-2 | 17-2 | 15-11 | 25-7 | 23-3 | 21-10 | 19-9 | 31-1 | 28-0 | 25-7 | 22-10 | | |
| | No.1 & Btr. | 14-11 | 13-7 | 12-9 | 11-5 | 19-8 | 17-8 | 16-2 | 14-5 | 24-11 | 21-7 | 19-9 | 17-8 | 28-11 | 25-1 | 22-10 | 20-5 | | |
| | No.1 | 14-8 | 12-9 | 11-8 | 10-5 | 18-8 | 16-2 | 14-9 | 13-2 | 22-9 | 19-9 | 18-0 | 16-1 | 26-5 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 14-0 | 12-1 | 11-0 | 9-10 | 17-8 | 15-4 | 14-0 | 12-6 | 21-7 | 18-9 | 17-1 | 15-3 | 25-1 | 21-8 | 19-10 | 17-9 | | |
| | No.3 | 10-8 | 9-3 | 8-5 | 7-7 | 13-6 | 11-8 | 10-8 | 9-7 | 16-6 | 14-3 | 13-1 | 11-8 | 19-2 | 16-7 | 15-2 | 13-6 | | |
| Douglas Fir- South | Sel. Struc. | 13-9 | 12-6 | 11-9 | 10-11 | 18-1 | 16-5 | 15-6 | 14-4 | 23-1 | 21-0 | 19-9 | 18-4 | 28-1 | 25-6 | 24-0 | 21-8 | | |
| | No.1 | 13-5 | 12-2 | 11-2 | 10-0 | 17-8 | 15-6 | 14-2 | 12-8 | 21-11 | 19-0 | 17-4 | 15-6 | 25-5 | 22-0 | 20-1 | 18-0 | | |
| | No.2 | 13-1 | 11-9 | 10-9 | 9-7 | 17-2 | 14-11 | 13-7 | 12-2 | 21-0 | 18-2 | 16-7 | 14-10 | 24-4 | 21-1 | 19-3 | 17-3 | | |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| Hem-Fir | Sel. Struc. | 14-4 | 13-1 | 12-3 | 11-5 | 18-11 | 17-2 | 16-2 | 15-0 | 24-2 | 21-11 | 20-8 | 19-1 | 29-4 | 26-8 | 24-8 | 22-1 | | |
| | No.1 & Btr. | 14-1 | 12-9 | 12-0 | 10-11 | 18-6 | 16-10 | 15-5 | 13-10 | 23-8 | 20-8 | 18-11 | 16-11 | 27-8 | 24-0 | 21-11 | 19-7 | | |
| | No.1 | 14-1 | 12-7 | 11-6 | 10-3 | 18-5 | 15-11 | 14-7 | 13-0 | 22-6 | 19-6 | 17-9 | 15-11 | 26-1 | 22-7 | 20-7 | 18-5 | | |
| | No.2 | 13-5 | 11-9 | 10-9 | 9-7 | 17-2 | 14-11 | 13-7 | 12-2 | 21-0 | 18-2 | 16-7 | 14-10 | 24-4 | 21-1 | 19-3 | 17-3 | | |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 13-5 | 12-2 | 11-5 | 10-8 | 17-8 | 16-1 | 15-1 | 14-0 | 22-6 | 20-6 | 19-3 | 17-11 | 27-5 | 24-11 | 23-5 | 21-3 | | |
| | No.1 | 13-1 | 11-10 | 10-11 | 9-9 | 17-2 | 15-1 | 13-9 | 12-4 | 21-4 | 18-5 | 16-10 | 15-1 | 24-8 | 21-5 | 19-6 | 17-6 | | |
| | No.2 | 12-8 | 11-3 | 10-3 | 9-2 | 16-5 | 14-3 | 13-0 | 11-7 | 20-1 | 17-4 | 15-10 | 14-2 | 23-3 | 20-2 | 18-5 | 16-5 | | |
| | No.3 | 9-10 | 8-7 | 7-10 | 7-0 | 12-6 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-9 | 15-4 | 14-0 | 12-6 | | |
| Western Woods | Sel. Struc. | 13-1 | 11-10 | 11-0 | 9-10 | 17-2 | 15-4 | 14-0 | 12-6 | 21-7 | 18-9 | 17-1 | 15-3 | 25-1 | 21-8 | 19-10 | 17-9 | | |
| | No.1 | 12-1 | 10-6 | 9-7 | 8-7 | 15-4 | 13-3 | 12-1 | 10-10 | 18-9 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 | | |
| | No.2 | 12-1 | 10-6 | 9-7 | 8-7 | 15-4 | 13-3 | 12-1 | 10-10 | 18-9 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 | | |
| | No.3 | 9-0 | 7-10 | 7-2 | 6-4 | 11-5 | 9-11 | 9-0 | 8-1 | 13-11 | 12-1 | 11-0 | 9-10 | 16-2 | 14-0 | 12-9 | 11-5 | | |

ROOF RAFTERS

30# SNOW LOAD 15# DEAD LOAD L/240

Table RR-29

Design Criteria: Strength - 30 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 14-4 | 13-0 | 12-3 | 11-4 | 18-10 | 17-2 | 16-1 | 15-0 | 24-1 | 21-10 | 20-7 | 18-7 | 29-3 | 26-5 | 24-1 | 21-7 | | |
| | No.1 & Btr. | 14-1 | 12-9 | 12-0 | 10-9 | 18-6 | 16-8 | 15-3 | 13-7 | 23-6 | 20-4 | 18-7 | 16-8 | 27-3 | 23-7 | 21-7 | 19-3 | | |
| | No.1 | 13-9 | 12-0 | 11-0 | 9-10 | 17-7 | 15-3 | 13-11 | 12-5 | 21-6 | 18-7 | 17-0 | 15-2 | 24-11 | 21-7 | 19-8 | 17-7 | | |
| | No.2 | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.3 | 10-1 | 8-9 | 7-11 | 7-1 | 12-9 | 11-0 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | | |
| Douglas Fir-South | Sel. Struc. | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-6 | 21-9 | 19-9 | 18-7 | 17-3 | 26-5 | 24-0 | 22-7 | 20-5 | | |
| | No.1 | 12-7 | 11-5 | 10-7 | 9-5 | 16-7 | 14-8 | 13-4 | 11-11 | 20-8 | 17-11 | 16-4 | 14-7 | 23-11 | 20-9 | 18-11 | 16-11 | | |
| | No.2 | 12-3 | 11-1 | 10-1 | 9-1 | 16-2 | 14-0 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-0 | 22-11 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Hem-Fir | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-9 | 17-10 | 16-2 | 15-3 | 14-2 | 22-9 | 20-8 | 19-5 | 18-0 | 27-8 | 25-1 | 23-3 | 20-10 | | |
| | No.1 & Btr. | 13-3 | 12-0 | 11-4 | 10-4 | 17-5 | 15-10 | 14-7 | 13-0 | 22-3 | 19-6 | 17-10 | 15-11 | 26-1 | 22-7 | 20-8 | 18-6 | | |
| | No.1 | 13-3 | 11-10 | 10-10 | 9-8 | 17-4 | 15-0 | 13-9 | 12-3 | 21-2 | 18-4 | 16-9 | 15-0 | 24-7 | 21-3 | 19-5 | 17-5 | | |
| | No.2 | 12-7 | 11-1 | 10-1 | 9-1 | 16-2 | 14-0 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-0 | 22-11 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-10 | 25-9 | 23-5 | 22-1 | 20-1 | | |
| | No.1 | 12-3 | 11-2 | 10-3 | 9-2 | 16-2 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-2 | 23-3 | 20-2 | 18-5 | 16-6 | | |
| | No.2 | 11-11 | 10-7 | 9-8 | 8-8 | 15-6 | 13-5 | 12-3 | 10-11 | 18-11 | 16-4 | 14-11 | 13-4 | 21-11 | 19-0 | 17-4 | 15-6 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Western Woods | Sel. Struc. | 12-3 | 11-2 | 10-5 | 9-4 | 16-2 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.2 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.3 | 8-6 | 7-4 | 6-9 | 6-0 | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-2 | 12-1 | 10-9 | | |

ROOF RAFTERS

40# SNOW LOAD 15# DEAD LOAD L/240

Table RR-30

Design Criteria: Strength - 40 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 13-0 | 11-10 | 11-1 | 10-4 | 17-2 | 15-7 | 14-8 | 13-7 | 21-10 | 19-10 | 18-8 | 16-10 | 26-7 | 23-11 | 21-10 | 19-6 | | |
| | No.1 & Btr. | 12-9 | 11-7 | 10-10 | 9-9 | 16-10 | 15-1 | 13-9 | 12-4 | 21-3 | 18-5 | 16-10 | 15-1 | 24-8 | 21-4 | 19-6 | 17-5 | | |
| | No.1 | 12-6 | 10-10 | 9-11 | 8-11 | 15-11 | 13-9 | 12-7 | 11-3 | 19-5 | 16-10 | 15-4 | 13-9 | 22-6 | 19-6 | 17-10 | 15-11 | | |
| | No.2 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.3 | 9-1 | 7-11 | 7-2 | 6-5 | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-1 | 9-11 | 16-4 | 14-2 | 12-11 | 11-6 | | |
| Douglas Fir-South | Sel. Struc. | 11-9 | 10-8 | 10-0 | 9-4 | 15-6 | 14-1 | 13-3 | 12-3 | 19-9 | 17-11 | 16-11 | 15-8 | 24-0 | 21-10 | 20-6 | 18-6 | | |
| | No.1 | 11-5 | 10-5 | 9-7 | 8-6 | 15-1 | 13-3 | 12-1 | 10-10 | 18-8 | 16-2 | 14-9 | 13-2 | 21-8 | 18-9 | 17-1 | 15-4 | | |
| | No.2 | 11-2 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Hem-Fir | Sel. Struc. | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-3 | 25-1 | 22-10 | 21-1 | 18-10 | | |
| | No.1 & Btr. | 12-0 | 10-11 | 10-3 | 9-4 | 15-10 | 14-5 | 13-2 | 11-9 | 20-2 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 12-0 | 10-9 | 9-10 | 8-9 | 15-8 | 13-7 | 12-5 | 11-1 | 19-2 | 16-7 | 15-2 | 13-7 | 22-3 | 19-3 | 17-7 | 15-9 | | |
| | No.2 | 11-5 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-5 | 10-5 | 9-9 | 9-1 | 15-1 | 13-9 | 12-11 | 12-0 | 19-3 | 17-6 | 16-6 | 15-3 | 23-5 | 21-3 | 20-0 | 18-2 | | |
| | No.1 | 11-2 | 10-2 | 9-3 | 8-4 | 14-8 | 12-11 | 11-9 | 10-6 | 18-2 | 15-9 | 14-4 | 12-10 | 21-1 | 18-3 | 16-8 | 14-11 | | |
| | No.2 | 10-10 | 9-7 | 8-9 | 7-10 | 14-0 | 12-1 | 11-1 | 9-11 | 17-1 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 5-11 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Western Woods | Sel. Struc. | 11-2 | 10-2 | 9-5 | 8-5 | 14-8 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.1 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.2 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 9-9 | 8-5 | 7-8 | 6-11 | 11-11 | 10-4 | 9-5 | 8-5 | 13-9 | 11-11 | 10-11 | 9-9 | | |

ROOF RAFTERS

60# SNOW LOAD 15# DEAD LOAD L/240

Table RR-31

Design Criteria: *Strength* - 60 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|-------------|-------------|-------|-------------|-------------|-------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 15-0 | 13-7 | 12-10 | 11-9 | 19-1 | 17-4 | 16-1 | 14-5 | 23-3 | 20-5 | 18-8 | 16-8 | 26-5 | 22-10 | 20-10 | 18-8 | | |
| | No.1 & Btr. | 14-8 | 12-11 | 11-9 | 10-7 | 18-3 | 15-9 | 14-5 | 12-11 | 21-2 | 18-4 | 16-8 | 14-11 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 13-7 | 11-9 | 10-9 | 9-8 | 16-8 | 14-5 | 13-2 | 11-9 | 19-3 | 16-8 | 15-3 | 13-8 | 21-7 | 18-8 | 17-0 | 15-3 | | |
| | No.2 | 12-11 | 11-2 | 10-3 | 9-2 | 15-9 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| Douglas Fir- South | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-9 | 17-3 | 15-8 | 14-9 | 13-8 | 21-0 | 19-1 | 17-9 | 15-10 | 24-8 | 21-8 | 19-10 | 17-8 | | |
| | No.1 | 13-1 | 11-4 | 10-4 | 9-3 | 16-0 | 13-10 | 12-8 | 11-4 | 18-7 | 16-1 | 14-8 | 13-1 | 20-9 | 17-11 | 16-5 | 14-8 | | |
| | No.2 | 12-7 | 10-10 | 9-11 | 8-11 | 15-4 | 13-3 | 12-1 | 10-10 | 17-9 | 15-5 | 14-1 | 12-7 | 19-10 | 17-2 | 15-8 | 14-1 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 11-9 | 10-2 | 9-4 | 8-4 | 13-8 | 11-10 | 10-9 | 9-8 | 15-3 | 13-2 | 12-1 | 10-9 | | |
| Hem-Fir | Sel. Struc. | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 13-11 | 21-11 | 19-9 | 18-0 | 16-2 | 25-6 | 22-1 | 20-2 | 18-0 | | |
| | No.1 & Btr. | 13-10 | 12-4 | 11-3 | 10-1 | 17-5 | 15-1 | 13-9 | 12-4 | 20-3 | 17-6 | 16-0 | 14-4 | 22-7 | 19-7 | 17-10 | 16-0 | | |
| | No.1 | 13-5 | 11-8 | 10-8 | 9-6 | 16-5 | 14-3 | 13-0 | 11-7 | 19-1 | 16-6 | 15-1 | 13-6 | 21-3 | 18-5 | 16-10 | 15-1 | | |
| | No.2 | 12-7 | 10-10 | 9-11 | 8-11 | 15-4 | 13-3 | 12-1 | 10-10 | 17-9 | 15-5 | 14-1 | 12-7 | 19-10 | 17-2 | 15-8 | 14-1 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-4 | 20-6 | 18-7 | 17-5 | 15-7 | 24-1 | 21-3 | 19-5 | 17-4 | | |
| | No.1 | 12-9 | 11-0 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | 20-2 | 17-5 | 15-11 | 14-3 | | |
| | No.2 | 12-0 | 10-5 | 9-6 | 8-6 | 14-8 | 12-8 | 11-7 | 10-4 | 17-0 | 14-8 | 13-5 | 12-0 | 19-0 | 16-5 | 15-0 | 13-5 | | |
| | No.3 | 9-2 | 7-11 | 7-3 | 6-5 | 11-2 | 9-8 | 8-10 | 7-11 | 12-11 | 11-2 | 10-3 | 9-2 | 14-5 | 12-6 | 11-5 | 10-3 | | |
| Western Woods | Sel. Struc. | 12-10 | 11-2 | 10-3 | 9-2 | 15-9 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| | No.1 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 | | |
| | No.3 | 8-4 | 7-3 | 6-7 | 5-11 | 10-2 | 8-10 | 8-1 | 7-2 | 11-10 | 10-3 | 9-4 | 8-4 | 13-2 | 11-5 | 10-5 | 9-4 | | |

ROOF RAFTERS

80# SNOW LOAD 15# DEAD LOAD L/240

Table RR-32

Design Criteria: *Strength* - 80 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|--------------|-------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir- Larch | Sel. Struc. | 13-7 | 12-4 | 11-8 | 10-6 | 17-4 | 15-8 | 14-4 | 12-10 | 21-0 | 18-2 | 16-7 | 14-10 | 23-5 | 20-4 | 18-6 | 16-7 | | |
| | No.1 & Btr. | 13-3 | 11-6 | 10-6 | 9-4 | 16-2 | 14-0 | 12-10 | 11-5 | 18-9 | 16-3 | 14-10 | 13-3 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.1 | 12-1 | 10-6 | 9-7 | 8-7 | 14-9 | 12-10 | 11-8 | 10-5 | 17-2 | 14-10 | 13-7 | 12-1 | 19-2 | 16-7 | 15-2 | 13-6 | | |
| | No.2 | 11-6 | 9-11 | 9-1 | 8-1 | 14-0 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| Douglas Fir- South | Sel. Struc. | 12-3 | 11-2 | 10-6 | 9-9 | 15-8 | 14-3 | 13-5 | 12-2 | 19-1 | 17-3 | 15-9 | 14-1 | 22-3 | 19-3 | 17-7 | 15-9 | | |
| | No.1 | 11-8 | 10-1 | 9-2 | 8-3 | 14-3 | 12-4 | 11-3 | 10-1 | 16-6 | 14-3 | 13-0 | 11-8 | 18-5 | 15-11 | 14-7 | 13-0 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 13-7 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| | No.3 | 8-7 | 7-5 | 6-9 | 6-1 | 10-5 | 9-1 | 8-3 | 7-5 | 12-1 | 10-6 | 9-7 | 8-7 | 13-6 | 11-9 | 10-8 | 9-7 | | |
| Hem-Fir | Sel. Struc. | 12-10 | 11-8 | 11-0 | 10-1 | 16-5 | 14-11 | 13-10 | 12-4 | 19-11 | 17-7 | 16-0 | 14-4 | 22-8 | 19-7 | 17-11 | 16-0 | | |
| | No.1 & Btr. | 12-7 | 11-0 | 10-0 | 9-0 | 15-6 | 13-5 | 12-3 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | 20-1 | 17-5 | 15-11 | 14-2 | | |
| | No.1 | 11-11 | 10-4 | 9-5 | 8-5 | 14-7 | 12-8 | 11-6 | 10-4 | 16-11 | 14-8 | 13-5 | 12-0 | 18-11 | 16-4 | 14-11 | 13-4 | | |
| | No.2 | 11-2 | 9-8 | 8-10 | 7-11 | 13-7 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 12-0 | 10-11 | 10-3 | 9-6 | 15-3 | 13-11 | 13-1 | 11-11 | 18-7 | 16-11 | 15-5 | 13-10 | 21-10 | 18-11 | 17-3 | 15-5 | | |
| | No.1 | 11-4 | 9-10 | 8-11 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-0 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-3 | 9-2 | 15-1 | 13-1 | 11-11 | 10-8 | 16-10 | 14-7 | 13-4 | 11-11 | | |
| | No.3 | 8-1 | 7-0 | 6-5 | 5-9 | 9-11 | 8-7 | 7-10 | 7-0 | 11-6 | 9-11 | 9-1 | 8-2 | 12-10 | 11-1 | 10-2 | 9-1 | | |
| Western Woods | Sel. Struc. | 11-6 | 9-11 | 9-1 | 8-1 | 14-0 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.1 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 | | |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-1 | 7-10 | 7-2 | 6-5 | 10-6 | 9-1 | 8-4 | 7-5 | 11-9 | 10-2 | 9-3 | 8-3 | | |

ROOF RAFTERS

100# SNOW LOAD 15# DEAD LOAD L/240

Table RR-33

Design Criteria: *Strength* - 100 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 12-7 | 11-6 | 10-8 | 9-6 | 16-1 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | 21-4 | 18-5 | 16-10 | 15-1 | | |
| | No.1 & Btr. | 12-1 | 10-5 | 9-6 | 8-6 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.1 | 11-0 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-5 | 7-8 | 6-11 | 11-3 | 9-9 | 8-11 | 8-0 | 12-7 | 10-11 | 10-0 | 8-11 | | |
| Douglas Fir-South | Sel. Struc. | 11-5 | 10-4 | 9-9 | 9-0 | 14-7 | 13-3 | 12-4 | 11-0 | 17-8 | 15-8 | 14-4 | 12-10 | 20-3 | 17-6 | 16-0 | 14-4 | | |
| | No.1 | 10-7 | 9-2 | 8-4 | 7-6 | 12-11 | 11-2 | 10-3 | 9-2 | 15-0 | 13-0 | 11-10 | 10-7 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Hem-Fir | Sel. Struc. | 11-11 | 10-10 | 10-2 | 9-2 | 15-2 | 13-9 | 12-7 | 11-3 | 18-5 | 16-0 | 14-7 | 13-0 | 20-7 | 17-10 | 16-3 | 14-7 | | |
| | No.1 & Btr. | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-2 | 10-0 | 16-4 | 14-2 | 12-11 | 11-7 | 18-3 | 15-10 | 14-5 | 12-11 | | |
| | No.1 | 10-10 | 9-5 | 8-7 | 7-8 | 13-3 | 11-6 | 10-6 | 9-5 | 15-5 | 13-4 | 12-2 | 10-10 | 17-2 | 14-11 | 13-7 | 12-2 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-1 | 10-1 | 9-6 | 8-10 | 14-2 | 12-11 | 12-1 | 10-10 | 17-3 | 15-5 | 14-0 | 12-7 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.1 | 10-3 | 8-11 | 8-2 | 7-3 | 12-7 | 10-11 | 9-11 | 8-11 | 14-7 | 12-7 | 11-6 | 10-4 | 16-3 | 14-1 | 12-10 | 11-6 | | |
| | No.2 | 9-8 | 8-5 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-9 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-0 | 7-10 | 7-1 | 6-4 | 10-5 | 9-1 | 8-3 | 7-5 | 11-8 | 10-1 | 9-3 | 8-3 | | |
| Western Woods | Sel. Struc. | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.1 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.2 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.3 | 6-9 | 5-10 | 5-4 | 4-9 | 8-3 | 7-1 | 6-6 | 5-10 | 9-6 | 8-3 | 7-6 | 6-9 | 10-8 | 9-3 | 8-5 | 7-6 | | |

ROOF RAFTERS

20# SNOW LOAD 25# DEAD LOAD L/240

Table RR-34

Design Criteria: *Strength* - 20 lbs. per sq. ft. snow load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 16-4 | 14-9 | 13-5 | 12-0 | 21-6 | 18-8 | 17-0 | 15-3 | 26-4 | 22-9 | 20-9 | 18-7 | 30-6 | 26-5 | 24-1 | 21-7 | | |
| | No.1 & Btr. | 15-2 | 13-2 | 12-0 | 10-9 | 19-3 | 16-8 | 15-3 | 13-7 | 23-6 | 20-4 | 18-7 | 16-8 | 27-3 | 23-7 | 21-7 | 19-3 | | |
| | No.1 | 13-11 | 12-0 | 11-0 | 9-10 | 17-7 | 15-3 | 13-11 | 12-5 | 21-6 | 18-7 | 17-0 | 15-2 | 24-11 | 21-7 | 19-8 | 17-7 | | |
| | No.2 | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.3 | 10-1 | 8-9 | 7-11 | 7-1 | 12-9 | 11-0 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | | |
| Douglas Fir-South | Sel. Struc. | 14-9 | 13-5 | 12-8 | 11-5 | 19-6 | 17-8 | 16-2 | 14-5 | 24-10 | 21-7 | 19-9 | 17-8 | 28-11 | 25-1 | 22-10 | 20-5 | | |
| | No.1 | 13-4 | 11-7 | 10-7 | 9-5 | 16-11 | 14-8 | 13-4 | 11-11 | 20-8 | 17-11 | 16-4 | 14-7 | 23-11 | 20-9 | 18-11 | 16-11 | | |
| | No.2 | 12-10 | 11-1 | 10-1 | 9-1 | 16-2 | 14-0 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-0 | 22-11 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Hem-Fir | Sel. Struc. | 15-6 | 14-1 | 13-0 | 11-7 | 20-5 | 18-0 | 16-5 | 14-8 | 25-5 | 22-0 | 20-1 | 18-0 | 29-6 | 25-6 | 23-3 | 20-10 | | |
| | No.1 & Btr. | 14-7 | 12-7 | 11-6 | 10-4 | 18-5 | 16-0 | 14-7 | 13-0 | 22-6 | 19-6 | 17-10 | 15-11 | 26-1 | 22-7 | 20-8 | 18-6 | | |
| | No.1 | 13-8 | 11-10 | 10-10 | 9-8 | 17-4 | 15-0 | 13-9 | 12-3 | 21-2 | 18-4 | 16-9 | 15-0 | 24-7 | 21-3 | 19-5 | 17-5 | | |
| | No.2 | 12-10 | 11-1 | 10-1 | 9-1 | 16-2 | 14-0 | 12-10 | 11-6 | 19-10 | 17-2 | 15-8 | 14-0 | 22-11 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 14-5 | 13-1 | 12-4 | 11-2 | 19-0 | 17-3 | 15-10 | 14-2 | 24-3 | 21-2 | 19-4 | 17-4 | 28-5 | 24-7 | 22-5 | 20-1 | | |
| | No.1 | 13-0 | 11-3 | 10-3 | 9-2 | 16-5 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-2 | 23-3 | 20-2 | 18-5 | 16-6 | | |
| | No.2 | 12-3 | 10-7 | 9-8 | 8-8 | 15-6 | 13-5 | 12-3 | 10-11 | 18-11 | 16-4 | 14-11 | 13-4 | 21-11 | 19-0 | 17-4 | 15-6 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Western Woods | Sel. Struc. | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.2 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.3 | 8-6 | 7-4 | 6-9 | 6-0 | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-2 | 12-1 | 10-9 | | |

ROOF RAFTERS

25# SNOW LOAD 25# DEAD LOAD L/240

Table RR-35

Design Criteria: *Strength* - 25 lbs. per sq. ft. snow load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 15-2 | 13-10 | 12-9 | 11-5 | 20-0 | 17-8 | 16-2 | 14-5 | 24-11 | 21-7 | 19-9 | 17-8 | 28-11 | 25-1 | 22-10 | 20-5 | | |
| | No.1 & Btr. | 14-5 | 12-6 | 11-5 | 10-2 | 18-3 | 15-10 | 14-5 | 12-11 | 22-4 | 19-4 | 17-8 | 15-9 | 25-11 | 22-5 | 20-5 | 18-4 | | |
| | No.1 | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.2 | 12-6 | 10-10 | 9-10 | 8-10 | 15-10 | 13-8 | 12-6 | 11-2 | 19-4 | 16-9 | 15-3 | 13-8 | 22-5 | 19-5 | 17-9 | 15-10 | | |
| Douglas Fir-South | Sel. Struc. | 13-9 | 12-6 | 11-9 | 10-10 | 18-1 | 16-5 | 15-4 | 13-8 | 23-1 | 20-6 | 18-9 | 16-9 | 27-5 | 23-9 | 21-8 | 19-5 | | |
| | No.1 | 12-8 | 11-0 | 10-0 | 8-11 | 16-0 | 13-11 | 12-8 | 11-4 | 19-7 | 17-0 | 15-6 | 13-10 | 22-9 | 19-8 | 18-0 | 16-1 | | |
| | No.2 | 12-2 | 10-6 | 9-7 | 8-7 | 15-4 | 13-4 | 12-2 | 10-10 | 18-9 | 16-3 | 14-10 | 13-3 | 21-9 | 18-10 | 17-3 | 15-5 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Hem-Fir | Sel. Struc. | 14-4 | 13-1 | 12-3 | 11-0 | 18-11 | 17-1 | 15-7 | 13-11 | 24-1 | 20-10 | 19-1 | 17-1 | 27-11 | 24-2 | 22-1 | 19-9 | | |
| | No.1 & Btr. | 13-10 | 12-0 | 10-11 | 9-9 | 17-6 | 15-2 | 13-10 | 12-4 | 21-4 | 18-6 | 16-11 | 15-1 | 24-9 | 21-5 | 19-7 | 17-6 | | |
| | No.1 | 13-0 | 11-3 | 10-3 | 9-2 | 16-6 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-3 | 23-4 | 20-2 | 18-5 | 16-6 | | |
| | No.2 | 12-2 | 10-6 | 9-7 | 8-7 | 15-4 | 13-4 | 12-2 | 10-10 | 18-9 | 16-3 | 14-10 | 13-3 | 21-9 | 18-10 | 17-3 | 15-5 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-5 | 12-2 | 11-5 | 10-7 | 17-8 | 16-1 | 15-0 | 13-5 | 22-6 | 20-1 | 18-4 | 16-5 | 26-11 | 23-4 | 21-3 | 19-1 | | |
| | No.1 | 12-4 | 10-8 | 9-9 | 8-9 | 15-7 | 13-6 | 12-4 | 11-0 | 19-1 | 16-6 | 15-1 | 13-6 | 22-1 | 19-2 | 17-6 | 15-7 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-9 | 11-7 | 10-5 | 17-11 | 15-6 | 14-2 | 12-8 | 20-10 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-10 | 7-8 | 7-0 | 6-3 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | | |
| Western Woods | Sel. Struc. | 12-6 | 10-10 | 9-10 | 8-10 | 15-10 | 13-8 | 12-6 | 11-2 | 19-4 | 16-9 | 15-3 | 13-8 | 22-5 | 19-5 | 17-9 | 15-10 | | |
| | No.1 | 10-10 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| | No.2 | 10-10 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | | |

ROOF RAFTERS

30# SNOW LOAD 25# DEAD LOAD L/240

Table RR-36

Design Criteria: *Strength* - 30 lbs. per sq. ft. snow load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 14-4 | 13-0 | 12-2 | 10-10 | 18-10 | 16-10 | 15-5 | 13-9 | 23-9 | 20-7 | 18-10 | 16-10 | 27-7 | 23-11 | 21-10 | 19-6 | | |
| | No.1 & Btr. | 13-9 | 11-11 | 10-10 | 9-9 | 17-5 | 15-1 | 13-9 | 12-4 | 21-3 | 18-5 | 16-10 | 15-1 | 24-8 | 21-4 | 19-6 | 17-5 | | |
| | No.1 | 12-7 | 10-10 | 9-11 | 8-11 | 15-11 | 13-9 | 12-7 | 11-3 | 19-5 | 16-10 | 15-4 | 13-9 | 22-6 | 19-6 | 17-10 | 15-11 | | |
| | No.2 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| Douglas Fir-South | Sel. Struc. | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-1 | 21-9 | 19-7 | 17-10 | 15-11 | 26-2 | 22-8 | 20-8 | 18-6 | | |
| | No.1 | 12-1 | 10-5 | 9-7 | 8-6 | 15-3 | 13-3 | 12-1 | 10-10 | 18-8 | 16-2 | 14-9 | 13-2 | 21-8 | 18-9 | 17-1 | 15-4 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Hem-Fir | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-6 | 17-10 | 16-2 | 14-10 | 13-4 | 22-9 | 19-11 | 18-2 | 16-3 | 26-8 | 23-1 | 21-1 | 18-10 | | |
| | No.1 & Btr. | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 12-5 | 10-9 | 9-10 | 8-9 | 15-8 | 13-7 | 12-5 | 11-1 | 19-2 | 16-7 | 15-2 | 13-7 | 22-3 | 19-3 | 17-7 | 15-9 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 12-10 | 21-2 | 19-2 | 17-6 | 15-8 | 25-8 | 22-3 | 20-4 | 18-2 | | |
| | No.1 | 11-9 | 10-2 | 9-3 | 8-4 | 14-10 | 12-11 | 11-9 | 10-6 | 18-2 | 15-9 | 14-4 | 12-10 | 21-1 | 18-3 | 16-8 | 14-11 | | |
| | No.2 | 11-1 | 9-7 | 8-9 | 7-10 | 14-0 | 12-1 | 11-1 | 9-11 | 17-1 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 5-11 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Western Woods | Sel. Struc. | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.1 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.2 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 9-9 | 8-5 | 7-8 | 6-11 | 11-11 | 10-4 | 9-5 | 8-5 | 13-9 | 11-11 | 10-11 | 9-9 | | |

ROOF RAFTERS

40# SNOW LOAD 25# DEAD LOAD L/240

Table RR-37

Design Criteria: Strength - 40 lbs. per sq. ft. snow load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 13-0 | 11-10 | 11-1 | 10-0 | 17-2 | 15-6 | 14-2 | 12-8 | 21-10 | 18-11 | 17-4 | 15-6 | 25-4 | 22-0 | 20-1 | 17-11 | | |
| | No.1 & Btr. | 12-8 | 10-11 | 10-0 | 8-11 | 16-0 | 13-10 | 12-8 | 11-4 | 19-7 | 16-11 | 15-6 | 13-10 | 22-8 | 19-8 | 17-11 | 16-1 | | |
| | No.1 | 11-7 | 10-0 | 9-2 | 8-2 | 14-7 | 12-8 | 11-7 | 10-4 | 17-10 | 15-6 | 14-1 | 12-8 | 20-9 | 17-11 | 16-5 | 14-8 | | |
| | No.2 | 10-11 | 9-6 | 8-8 | 7-9 | 13-10 | 12-0 | 11-0 | 9-10 | 16-11 | 14-8 | 13-5 | 12-0 | 19-8 | 17-0 | 15-6 | 13-11 | | |
| | No.3 | 8-4 | 7-3 | 6-7 | 5-11 | 10-7 | 9-2 | 8-5 | 7-6 | 12-11 | 11-3 | 10-3 | 9-2 | 15-0 | 13-0 | 11-10 | 10-7 | | |
| Douglas Fir-South | Sel. Struc. | 11-9 | 10-8 | 10-0 | 9-4 | 15-6 | 14-1 | 13-3 | 12-0 | 19-9 | 17-11 | 16-5 | 14-8 | 24-0 | 20-10 | 19-0 | 17-0 | | |
| | No.1 | 11-1 | 9-7 | 8-9 | 7-10 | 14-1 | 12-2 | 11-1 | 9-11 | 17-2 | 14-11 | 13-7 | 12-2 | 19-11 | 17-3 | 15-9 | 14-1 | | |
| | No.2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-6 | 11-8 | 10-8 | 9-6 | 16-6 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.3 | 8-2 | 7-1 | 6-5 | 5-9 | 10-4 | 8-11 | 8-2 | 7-4 | 12-8 | 10-11 | 10-0 | 8-11 | 14-8 | 12-8 | 11-7 | 10-4 | | |
| Hem-Fir | Sel. Struc. | 12-3 | 11-2 | 10-6 | 9-8 | 16-2 | 14-8 | 13-8 | 12-3 | 20-8 | 18-4 | 16-9 | 14-11 | 24-6 | 21-3 | 19-5 | 17-4 | | |
| | No.1 & Btr. | 12-0 | 10-6 | 9-7 | 8-7 | 15-4 | 13-3 | 12-2 | 10-10 | 18-9 | 16-3 | 14-10 | 13-3 | 21-9 | 18-10 | 17-2 | 15-4 | | |
| | No.1 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-6 | 11-8 | 10-8 | 9-6 | 16-6 | 14-3 | 13-0 | 11-8 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.3 | 8-2 | 7-1 | 6-5 | 5-9 | 10-4 | 8-11 | 8-2 | 7-4 | 12-8 | 10-11 | 10-0 | 8-11 | 14-8 | 12-8 | 11-7 | 10-4 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-5 | 10-5 | 9-9 | 9-1 | 15-1 | 13-9 | 12-11 | 11-9 | 19-3 | 17-6 | 16-1 | 14-5 | 23-5 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 10-10 | 9-4 | 8-6 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-9 | 15-4 | 13-8 | | |
| | No.2 | 10-2 | 8-10 | 8-0 | 7-2 | 12-10 | 11-2 | 10-2 | 9-1 | 15-9 | 13-7 | 12-5 | 11-1 | 18-3 | 15-10 | 14-5 | 12-11 | | |
| | No.3 | 7-9 | 6-9 | 6-1 | 5-6 | 9-10 | 8-6 | 7-9 | 6-11 | 12-0 | 10-5 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | | |
| Western Woods | Sel. Struc. | 10-11 | 9-6 | 8-8 | 7-9 | 13-10 | 12-0 | 11-0 | 9-10 | 16-11 | 14-8 | 13-5 | 12-0 | 19-8 | 17-0 | 15-6 | 13-11 | | |
| | No.1 | 9-6 | 8-3 | 7-6 | 6-9 | 12-0 | 10-5 | 9-6 | 8-6 | 14-8 | 12-9 | 11-7 | 10-5 | 17-0 | 14-9 | 13-5 | 12-0 | | |
| | No.2 | 9-6 | 8-3 | 7-6 | 6-9 | 12-0 | 10-5 | 9-6 | 8-6 | 14-8 | 12-9 | 11-7 | 10-5 | 17-0 | 14-9 | 13-5 | 12-0 | | |
| | No.3 | 7-1 | 6-1 | 5-7 | 5-0 | 8-11 | 7-9 | 7-1 | 6-4 | 10-11 | 9-6 | 8-8 | 7-9 | 12-8 | 11-0 | 10-0 | 9-0 | | |

ROOF RAFTERS

60# SNOW LOAD 25# DEAD LOAD L/240

Table RR-38

Design Criteria: Strength - 60 lbs. per sq. ft. snow load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 15-0 | 13-7 | 12-5 | 11-1 | 19-1 | 16-7 | 15-2 | 13-6 | 22-2 | 19-3 | 17-6 | 15-8 | 24-9 | 21-6 | 19-7 | 17-6 | | |
| | No.1 & Btr. | 14-0 | 12-2 | 11-1 | 9-11 | 17-1 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 | 22-2 | 19-2 | 17-6 | 15-8 | | |
| | No.1 | 12-9 | 11-1 | 10-1 | 9-1 | 15-7 | 13-6 | 12-4 | 11-1 | 18-1 | 15-8 | 14-4 | 12-10 | 20-3 | 17-6 | 16-0 | 14-4 | | |
| | No.2 | 12-2 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-9 | 10-6 | 17-2 | 14-11 | 13-7 | 12-2 | 19-2 | 16-8 | 15-2 | 13-7 | | |
| | No.3 | 9-3 | 8-0 | 7-4 | 6-7 | 11-4 | 9-10 | 8-11 | 8-0 | 13-2 | 11-4 | 10-5 | 9-3 | 14-8 | 12-8 | 11-7 | 10-4 | | |
| Douglas Fir-South | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-6 | 17-3 | 15-8 | 14-4 | 12-10 | 21-0 | 18-3 | 16-8 | 14-11 | 23-6 | 20-4 | 18-7 | 16-8 | | |
| | No.1 | 12-4 | 10-8 | 9-9 | 8-8 | 15-0 | 13-0 | 11-11 | 10-7 | 17-5 | 15-1 | 13-9 | 12-4 | 19-6 | 16-10 | 15-5 | 13-9 | | |
| | No.2 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| | No.3 | 9-1 | 7-10 | 7-2 | 6-5 | 11-1 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-2 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| Hem-Fir | Sel. Struc. | 14-2 | 12-10 | 12-0 | 10-8 | 18-0 | 16-0 | 14-7 | 13-1 | 21-5 | 18-7 | 16-11 | 15-2 | 23-11 | 20-9 | 18-11 | 16-11 | | |
| | No.1 & Btr. | 13-5 | 11-7 | 10-7 | 9-6 | 16-5 | 14-2 | 12-11 | 11-7 | 19-0 | 16-5 | 15-0 | 13-5 | 21-3 | 18-5 | 16-9 | 15-0 | | |
| | No.1 | 12-8 | 10-11 | 10-0 | 8-11 | 15-5 | 13-4 | 12-2 | 10-11 | 17-11 | 15-6 | 14-2 | 12-8 | 20-0 | 17-4 | 15-10 | 14-2 | | |
| | No.2 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| | No.3 | 9-1 | 7-10 | 7-2 | 6-5 | 11-1 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-2 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 13-2 | 12-0 | 11-3 | 10-4 | 16-10 | 15-3 | 14-1 | 12-7 | 20-6 | 17-11 | 16-4 | 14-7 | 23-1 | 20-0 | 18-3 | 16-4 | | |
| | No.1 | 12-0 | 10-4 | 9-5 | 8-6 | 14-7 | 12-8 | 11-7 | 10-4 | 16-11 | 14-8 | 13-5 | 12-0 | 18-11 | 16-5 | 15-0 | 13-5 | | |
| | No.2 | 11-3 | 9-9 | 8-11 | 8-0 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-10 | 12-7 | 11-3 | 17-10 | 15-5 | 14-1 | 12-7 | | |
| | No.3 | 8-7 | 7-5 | 6-9 | 6-1 | 10-6 | 9-1 | 8-3 | 7-5 | 12-2 | 10-6 | 9-7 | 8-7 | 13-7 | 11-9 | 10-9 | 9-7 | | |
| Western Woods | Sel. Struc. | 12-2 | 10-6 | 9-7 | 8-7 | 14-10 | 12-10 | 11-9 | 10-6 | 17-2 | 14-11 | 13-7 | 12-2 | 19-2 | 16-8 | 15-2 | 13-7 | | |
| | No.1 | 10-6 | 9-1 | 8-4 | 7-5 | 12-10 | 11-1 | 10-2 | 9-1 | 14-11 | 12-11 | 11-9 | 10-6 | 16-8 | 14-5 | 13-2 | 11-9 | | |
| | No.2 | 10-6 | 9-1 | 8-4 | 7-5 | 12-10 | 11-1 | 10-2 | 9-1 | 14-11 | 12-11 | 11-9 | 10-6 | 16-8 | 14-5 | 13-2 | 11-9 | | |
| | No.3 | 7-10 | 6-9 | 6-2 | 5-6 | 9-7 | 8-3 | 7-7 | 6-9 | 11-1 | 9-7 | 8-9 | 7-10 | 12-5 | 10-9 | 9-10 | 8-9 | | |

ROOF RAFTERS

80# SNOW LOAD 25# DEAD LOAD L/240

Table RR-39

Design Criteria: Strength - 80 lbs. per sq. ft. snow load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------------|-------------|-------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 13-7 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | 22-4 | 19-4 | 17-8 | 15-9 | | |
| | No.1 & Btr. | 12-7 | 10-11 | 10-0 | 8-11 | 15-5 | 13-4 | 12-2 | 10-11 | 17-10 | 15-6 | 14-1 | 12-8 | 19-11 | 17-3 | 15-9 | 14-1 | | |
| | No.1 | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-1 | 9-11 | 16-4 | 14-1 | 12-11 | 11-6 | 18-3 | 15-9 | 14-5 | 12-11 | | |
| | No.2 | 10-11 | 9-5 | 8-8 | 7-9 | 13-4 | 11-7 | 10-7 | 9-5 | 15-6 | 13-5 | 12-3 | 10-11 | 17-3 | 15-0 | 13-8 | 12-3 | | |
| | No.3 | 8-4 | 7-3 | 6-7 | 5-11 | 10-2 | 8-10 | 8-1 | 7-2 | 11-10 | 10-3 | 9-4 | 8-4 | 13-2 | 11-5 | 10-5 | 9-4 | | |
| Douglas Fir-South | Sel. Struc. | 12-3 | 11-2 | 10-6 | 9-5 | 15-8 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 | 21-2 | 18-4 | 16-9 | 15-0 | | |
| | No.1 | 11-1 | 9-7 | 8-9 | 7-10 | 13-6 | 11-8 | 10-8 | 9-7 | 15-8 | 13-7 | 12-5 | 11-1 | 17-6 | 15-2 | 13-10 | 12-5 | | |
| | No.2 | 10-7 | 9-2 | 8-5 | 7-6 | 13-0 | 11-3 | 10-3 | 9-2 | 15-0 | 13-0 | 11-11 | 10-8 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.3 | 8-2 | 7-1 | 6-5 | 5-9 | 9-11 | 8-7 | 7-10 | 7-0 | 11-6 | 10-0 | 9-1 | 8-2 | 12-11 | 11-2 | 10-2 | 9-1 | | |
| Hem-Fir | Sel. Struc. | 12-10 | 11-8 | 10-9 | 9-8 | 16-5 | 14-5 | 13-2 | 11-9 | 19-3 | 16-8 | 15-3 | 13-8 | 21-7 | 18-8 | 17-0 | 15-3 | | |
| | No.1 & Btr. | 12-1 | 10-5 | 9-6 | 8-6 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-10 | 13-6 | 12-1 | 19-1 | 16-7 | 15-1 | 13-6 | | |
| | No.1 | 11-4 | 9-10 | 9-0 | 8-0 | 13-11 | 12-0 | 11-0 | 9-10 | 16-1 | 13-11 | 12-9 | 11-5 | 18-0 | 15-7 | 14-3 | 12-9 | | |
| | No.2 | 10-7 | 9-2 | 8-5 | 7-6 | 13-0 | 11-3 | 10-3 | 9-2 | 15-0 | 13-0 | 11-11 | 10-8 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.3 | 8-2 | 7-1 | 6-5 | 5-9 | 9-11 | 8-7 | 7-10 | 7-0 | 11-6 | 10-0 | 9-1 | 8-2 | 12-11 | 11-2 | 10-2 | 9-1 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-0 | 10-11 | 10-3 | 9-3 | 15-3 | 13-11 | 12-8 | 11-4 | 18-7 | 16-1 | 14-8 | 13-2 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.1 | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-2 | 12-1 | 10-9 | 17-0 | 14-9 | 13-6 | 12-1 | | |
| | No.2 | 10-2 | 8-9 | 8-0 | 7-2 | 12-4 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-0 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-8 | 6-1 | 5-5 | 9-5 | 8-2 | 7-5 | 6-8 | 10-11 | 9-6 | 8-8 | 7-9 | 12-3 | 10-7 | 9-8 | 8-8 | | |
| Western Woods | Sel. Struc. | 10-11 | 9-5 | 8-8 | 7-9 | 13-4 | 11-7 | 10-7 | 9-5 | 15-6 | 13-5 | 12-3 | 10-11 | 17-3 | 15-0 | 13-8 | 12-3 | | |
| | No.1 | 9-5 | 8-2 | 7-6 | 6-8 | 11-7 | 10-0 | 9-2 | 8-2 | 13-5 | 11-7 | 10-7 | 9-6 | 15-0 | 12-11 | 11-10 | 10-7 | | |
| | No.2 | 9-5 | 8-2 | 7-6 | 6-8 | 11-7 | 10-0 | 9-2 | 8-2 | 13-5 | 11-7 | 10-7 | 9-6 | 15-0 | 12-11 | 11-10 | 10-7 | | |
| | No.3 | 7-1 | 6-1 | 5-7 | 5-0 | 8-7 | 7-5 | 6-10 | 6-1 | 10-0 | 8-8 | 7-11 | 7-1 | 11-2 | 9-8 | 8-10 | 7-11 | | |

ROOF RAFTERS

100# SNOW LOAD 25# DEAD LOAD L/240

Table RR-40

Design Criteria: Strength - 100 lbs. per sq. ft. snow load, plus 25 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 240 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------------|-------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 12-7 | 11-2 | 10-3 | 9-2 | 15-9 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| | No.1 & Btr. | 11-7 | 10-0 | 9-2 | 8-2 | 14-1 | 12-3 | 11-2 | 10-0 | 16-4 | 14-2 | 12-11 | 11-7 | 18-3 | 15-10 | 14-5 | 12-11 | | |
| | No.1 | 10-7 | 9-2 | 8-4 | 7-5 | 12-11 | 11-2 | 10-2 | 9-1 | 14-11 | 12-11 | 11-10 | 10-7 | 16-8 | 14-5 | 13-2 | 11-10 | | |
| | No.2 | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-2 | 12-3 | 11-2 | 10-0 | 15-10 | 13-9 | 12-6 | 11-2 | | |
| | No.3 | 7-8 | 6-7 | 6-0 | 5-5 | 9-4 | 8-1 | 7-5 | 6-7 | 10-10 | 9-4 | 8-7 | 7-8 | 12-1 | 10-6 | 9-7 | 8-7 | | |
| Douglas Fir-South | Sel. Struc. | 11-5 | 10-4 | 9-8 | 8-8 | 14-7 | 13-0 | 11-10 | 10-7 | 17-4 | 15-0 | 13-9 | 12-3 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| | No.1 | 10-2 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-10 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.2 | 9-9 | 8-5 | 7-8 | 6-11 | 11-11 | 10-3 | 9-5 | 8-5 | 13-9 | 11-11 | 10-11 | 9-9 | 15-5 | 13-4 | 12-2 | 10-11 | | |
| | No.3 | 7-5 | 6-5 | 5-11 | 5-3 | 9-1 | 7-11 | 7-2 | 6-5 | 10-7 | 9-2 | 8-4 | 7-6 | 11-10 | 10-3 | 9-4 | 8-4 | | |
| Hem-Fir | Sel. Struc. | 11-11 | 10-10 | 9-10 | 8-10 | 15-2 | 13-2 | 12-1 | 10-9 | 17-8 | 15-4 | 14-0 | 12-6 | 19-9 | 17-1 | 15-7 | 14-0 | | |
| | No.1 & Btr. | 11-1 | 9-7 | 8-9 | 7-10 | 13-6 | 11-8 | 10-8 | 9-7 | 15-8 | 13-7 | 12-5 | 11-1 | 17-6 | 15-2 | 13-10 | 12-5 | | |
| | No.1 | 10-5 | 9-0 | 8-3 | 7-4 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-9 | 11-8 | 10-5 | 16-6 | 14-3 | 13-0 | 11-8 | | |
| | No.2 | 9-9 | 8-5 | 7-8 | 6-11 | 11-11 | 10-3 | 9-5 | 8-5 | 13-9 | 11-11 | 10-11 | 9-9 | 15-5 | 13-4 | 12-2 | 10-11 | | |
| | No.3 | 7-5 | 6-5 | 5-11 | 5-3 | 9-1 | 7-11 | 7-2 | 6-5 | 10-7 | 9-2 | 8-4 | 7-6 | 11-10 | 10-3 | 9-4 | 8-4 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-1 | 10-1 | 9-6 | 8-6 | 14-2 | 12-9 | 11-7 | 10-5 | 17-0 | 14-9 | 13-6 | 12-1 | 19-0 | 16-6 | 15-1 | 13-5 | | |
| | No.1 | 9-10 | 8-7 | 7-10 | 7-0 | 12-1 | 10-5 | 9-6 | 8-6 | 14-0 | 12-1 | 11-1 | 9-11 | 15-7 | 13-6 | 12-4 | 11-0 | | |
| | No.2 | 9-3 | 8-0 | 7-4 | 6-7 | 11-4 | 9-10 | 9-0 | 8-0 | 13-2 | 11-5 | 10-5 | 9-4 | 14-8 | 12-9 | 11-7 | 10-5 | | |
| | No.3 | 7-1 | 6-2 | 5-7 | 5-0 | 8-8 | 7-6 | 6-10 | 6-1 | 10-0 | 8-8 | 7-11 | 7-1 | 11-2 | 9-8 | 8-10 | 7-11 | | |
| Western Woods | Sel. Struc. | 10-0 | 8-8 | 7-11 | 7-1 | 12-3 | 10-7 | 9-8 | 8-8 | 14-2 | 12-3 | 11-2 | 10-0 | 15-10 | 13-9 | 12-6 | 11-2 | | |
| | No.1 | 8-8 | 7-6 | 6-10 | 6-2 | 10-7 | 9-2 | 8-4 | 7-6 | 12-3 | 10-8 | 9-8 | 8-8 | 13-9 | 11-11 | 10-10 | 9-8 | | |
| | No.2 | 8-8 | 7-6 | 6-10 | 6-2 | 10-7 | 9-2 | 8-4 | 7-6 | 12-3 | 10-8 | 9-8 | 8-8 | 13-9 | 11-11 | 10-10 | 9-8 | | |
| | No.3 | 6-5 | 5-7 | 5-1 | 4-7 | 7-11 | 6-10 | 6-3 | 5-7 | 9-2 | 7-11 | 7-3 | 6-6 | 10-3 | 8-10 | 8-1 | 7-3 | | |

ROOF RAFTERS

20# SNOW LOAD 15# DEAD LOAD L/360

Table RR-41

Design Criteria: Strength - 20 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 14-4 | 13-0 | 12-3 | 11-4 | 18-10 | 17-2 | 16-1 | 15-0 | 24-1 | 21-10 | 20-7 | 19-1 | 29-3 | 26-7 | 25-0 | 23-3 | | |
| | No.1 & Btr. | 14-1 | 12-9 | 12-0 | 11-2 | 18-6 | 16-10 | 15-10 | 14-8 | 23-8 | 21-6 | 20-2 | 18-9 | 28-9 | 26-1 | 24-5 | 21-10 | | |
| | No.1 | 13-9 | 12-6 | 11-9 | 10-11 | 18-2 | 16-6 | 15-6 | 14-1 | 23-2 | 21-1 | 19-3 | 17-3 | 28-2 | 24-5 | 22-4 | 20-0 | | |
| | No.2 | 13-6 | 12-3 | 11-7 | 10-7 | 17-10 | 16-2 | 14-11 | 13-4 | 22-9 | 20-0 | 18-3 | 16-4 | 26-9 | 23-2 | 21-2 | 18-11 | | |
| | No.3 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| Douglas Fir-South | Sel. Struc. | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-6 | 21-9 | 19-9 | 18-7 | 17-3 | 26-5 | 24-0 | 22-7 | 21-0 | | |
| | No.1 | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-7 | 25-9 | 23-5 | 21-6 | 19-2 | | |
| | No.2 | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 15-10 | 25-1 | 22-6 | 20-7 | 18-5 | | |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | | |
| Hem-Fir | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-9 | 17-10 | 16-2 | 15-3 | 14-2 | 22-9 | 20-8 | 19-5 | 18-0 | 27-8 | 25-1 | 23-7 | 21-11 | | |
| | No.1 & Btr. | 13-3 | 12-0 | 11-4 | 10-6 | 17-5 | 15-10 | 14-11 | 13-10 | 22-3 | 20-2 | 19-0 | 17-8 | 27-1 | 24-7 | 23-1 | 20-11 | | |
| | No.1 | 13-3 | 12-0 | 11-4 | 10-6 | 17-5 | 15-10 | 14-11 | 13-10 | 22-3 | 20-2 | 19-0 | 17-0 | 27-1 | 24-2 | 22-0 | 19-9 | | |
| | No.2 | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-0 | 21-2 | 19-3 | 17-9 | 15-10 | 25-9 | 22-6 | 20-7 | 18-5 | | |
| | No.3 | 11-2 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-10 | 25-9 | 23-5 | 22-1 | 20-6 | | |
| | No.1 | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-1 | 25-1 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 11-11 | 10-10 | 10-2 | 9-6 | 15-9 | 14-3 | 13-5 | 12-5 | 20-1 | 18-3 | 16-11 | 15-2 | 24-5 | 21-6 | 19-8 | 17-7 | | |
| | No.3 | 10-7 | 9-2 | 8-4 | 7-6 | 13-4 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 | | |
| Western Woods | Sel. Struc. | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-4 | 25-1 | 22-10 | 21-2 | 18-11 | | |
| | No.1 | 11-11 | 10-10 | 10-2 | 9-2 | 15-9 | 14-2 | 12-11 | 11-7 | 20-0 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 | | |
| | No.2 | 11-7 | 10-6 | 9-10 | 9-2 | 15-3 | 13-10 | 12-11 | 11-7 | 19-5 | 17-4 | 15-10 | 14-2 | 23-2 | 20-1 | 18-4 | 16-5 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 12-2 | 10-7 | 9-8 | 8-8 | 14-11 | 12-11 | 11-9 | 10-7 | 17-3 | 15-0 | 13-8 | 12-3 | | |

ROOF RAFTERS

25# SNOW LOAD 15# DEAD LOAD L/360

Table RR-42

Design Criteria: Strength - 25 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 13-3 | 12-1 | 11-4 | 10-6 | 17-6 | 15-11 | 15-0 | 13-11 | 22-4 | 20-3 | 19-1 | 17-9 | 27-2 | 24-8 | 23-3 | 21-7 | | |
| | No.1 & Btr. | 13-1 | 11-10 | 11-2 | 10-4 | 17-2 | 15-7 | 14-8 | 13-8 | 21-11 | 19-11 | 18-9 | 17-5 | 26-8 | 24-3 | 22-10 | 20-5 | | |
| | No.1 | 12-10 | 11-8 | 10-11 | 10-2 | 16-10 | 15-4 | 14-5 | 13-2 | 21-6 | 19-7 | 18-0 | 16-1 | 26-2 | 22-10 | 20-11 | 18-8 | | |
| | No.2 | 12-6 | 11-5 | 10-9 | 9-10 | 16-6 | 15-0 | 14-0 | 12-6 | 21-1 | 18-9 | 17-1 | 15-3 | 25-1 | 21-8 | 19-10 | 17-9 | | |
| | No.3 | 10-8 | 9-3 | 8-5 | 7-7 | 13-6 | 11-8 | 10-8 | 9-7 | 16-6 | 14-3 | 13-1 | 11-8 | 19-2 | 16-7 | 15-2 | 13-6 | | |
| Douglas Fir-South | Sel. Struc. | 12-0 | 10-11 | 10-3 | 9-6 | 15-10 | 14-4 | 13-6 | 12-7 | 20-2 | 18-4 | 17-3 | 16-0 | 24-6 | 22-3 | 21-0 | 19-6 | | |
| | No.1 | 11-8 | 10-8 | 10-0 | 9-3 | 15-5 | 14-0 | 13-2 | 12-3 | 19-8 | 17-11 | 16-10 | 15-6 | 23-11 | 21-9 | 20-1 | 18-0 | | |
| | No.2 | 11-5 | 10-4 | 9-9 | 9-1 | 15-0 | 13-8 | 12-10 | 11-11 | 19-2 | 17-5 | 16-5 | 14-10 | 23-4 | 21-1 | 19-3 | 17-3 | | |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| Hem-Fir | Sel. Struc. | 12-6 | 11-5 | 10-9 | 9-11 | 16-6 | 15-0 | 14-2 | 13-1 | 21-1 | 19-2 | 18-0 | 16-9 | 25-8 | 23-4 | 21-11 | 20-4 | | |
| | No.1 & Btr. | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-5 | 25-1 | 22-10 | 21-6 | 19-7 | | |
| | No.1 | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 15-11 | 25-1 | 22-7 | 20-7 | 18-5 | | |
| | No.2 | 11-8 | 10-8 | 10-0 | 9-3 | 15-5 | 14-0 | 13-2 | 12-2 | 19-8 | 17-11 | 16-7 | 14-10 | 23-11 | 21-1 | 19-3 | 17-3 | | |
| | No.3 | 10-5 | 9-0 | 8-3 | 7-4 | 13-2 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-8 | 10-8 | 10-0 | 9-3 | 15-5 | 14-0 | 13-2 | 12-3 | 19-8 | 17-11 | 16-10 | 15-7 | 23-11 | 21-9 | 20-6 | 19-0 | | |
| | No.1 | 11-5 | 10-4 | 9-9 | 9-1 | 15-0 | 13-8 | 12-10 | 11-11 | 19-2 | 17-5 | 16-5 | 15-1 | 23-4 | 21-2 | 19-6 | 17-6 | | |
| | No.2 | 11-1 | 10-1 | 9-6 | 8-9 | 14-7 | 13-3 | 12-6 | 11-7 | 18-7 | 16-11 | 15-10 | 14-2 | 22-8 | 20-2 | 18-5 | 16-5 | | |
| | No.3 | 9-10 | 8-7 | 7-10 | 7-0 | 12-6 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-9 | 15-4 | 14-0 | 12-6 | | |
| Western Woods | Sel. Struc. | 11-5 | 10-4 | 9-9 | 9-1 | 15-0 | 13-8 | 12-10 | 11-11 | 19-2 | 17-5 | 16-5 | 15-2 | 23-4 | 21-2 | 19-10 | 17-9 | | |
| | No.1 | 11-1 | 10-1 | 9-6 | 8-7 | 14-7 | 13-3 | 12-1 | 10-10 | 18-7 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 | | |
| | No.2 | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 10-10 | 18-0 | 16-2 | 14-10 | 13-3 | 21-8 | 18-9 | 17-2 | 15-4 | | |
| | No.3 | 9-0 | 7-10 | 7-2 | 6-4 | 11-5 | 9-11 | 9-0 | 8-1 | 13-11 | 12-1 | 11-0 | 9-10 | 16-2 | 14-0 | 12-9 | 11-5 | | |

ROOF RAFTERS

30# SNOW LOAD 15# DEAD LOAD L/360

Table RR-43

Design Criteria: Strength - 30 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir- Larch | Sel. Struc. | 12-6 | 11-4 | 10-8 | 9-11 | 16-6 | 15-0 | 14-1 | 13-1 | 21-0 | 19-1 | 18-0 | 16-8 | 25-7 | 23-3 | 21-10 | 20-3 | | |
| | No.1 & Btr. | 12-3 | 11-2 | 10-6 | 9-9 | 16-2 | 14-8 | 13-10 | 12-10 | 20-8 | 18-9 | 17-8 | 16-5 | 25-1 | 22-10 | 21-6 | 19-3 | | |
| | No.1 | 12-0 | 10-11 | 10-4 | 9-7 | 15-10 | 14-5 | 13-7 | 12-5 | 20-3 | 18-5 | 17-0 | 15-2 | 24-8 | 21-7 | 19-8 | 17-7 | | |
| | No.2 | 11-10 | 10-9 | 10-1 | 9-4 | 15-7 | 14-2 | 13-2 | 11-9 | 19-10 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.3 | 10-1 | 8-9 | 7-11 | 7-1 | 12-9 | 11-0 | 10-1 | 9-0 | 15-7 | 13-6 | 12-4 | 11-0 | 18-0 | 15-7 | 14-3 | 12-9 | | |
| Douglas Fir- South | Sel. Struc. | 11-3 | 10-3 | 9-8 | 8-11 | 14-11 | 13-6 | 12-9 | 11-10 | 19-0 | 17-3 | 16-3 | 15-1 | 23-1 | 21-0 | 19-9 | 18-4 | | |
| | No.1 | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-10 | 14-7 | 22-6 | 20-6 | 18-11 | 16-11 | | |
| | No.2 | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-0 | 21-11 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Hem-Fir | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-7 | 14-2 | 13-4 | 12-4 | 19-10 | 18-0 | 17-0 | 15-9 | 24-2 | 21-11 | 20-8 | 19-2 | | |
| | No.1 & Btr. | 11-7 | 10-6 | 9-10 | 9-2 | 15-3 | 13-10 | 13-0 | 12-1 | 19-5 | 17-8 | 16-7 | 15-5 | 23-7 | 21-6 | 20-2 | 18-6 | | |
| | No.1 | 11-7 | 10-6 | 9-10 | 9-2 | 15-3 | 13-10 | 13-0 | 12-1 | 19-5 | 17-8 | 16-7 | 15-0 | 23-7 | 21-3 | 19-5 | 17-5 | | |
| | No.2 | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-8 | 14-0 | 22-6 | 19-11 | 18-2 | 16-3 | | |
| | No.3 | 9-10 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-10 | 14-8 | 22-6 | 20-6 | 19-3 | 17-11 | | |
| | No.1 | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-2 | 21-11 | 19-11 | 18-5 | 16-6 | | |
| | No.2 | 10-5 | 9-6 | 8-11 | 8-3 | 13-9 | 12-6 | 11-9 | 10-11 | 17-6 | 15-11 | 14-11 | 13-4 | 21-4 | 19-0 | 17-4 | 15-6 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Western Woods | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-4 | 21-11 | 19-11 | 18-8 | 16-8 | | |
| | No.1 | 10-5 | 9-6 | 8-11 | 8-1 | 13-9 | 12-6 | 11-5 | 10-3 | 17-6 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.2 | 10-1 | 9-2 | 8-8 | 8-0 | 13-4 | 12-1 | 11-4 | 10-3 | 17-0 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.3 | 8-6 | 7-4 | 6-9 | 6-0 | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-2 | 12-1 | 10-9 | | |

ROOF RAFTERS

40# SNOW LOAD 15# DEAD LOAD L/360

Table RR-44

Design Criteria: Strength - 40 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|--------------------------------|-------------|-------|------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir- Larch | Sel. Struc. | 11-4 | 10-4 | 9-8 | 9-0 | 15-0 | 13-7 | 12-10 | 11-11 | 19-1 | 17-4 | 16-4 | 15-2 | 23-3 | 21-1 | 19-10 | 18-5 | | |
| | No.1 & Btr. | 11-2 | 10-2 | 9-6 | 8-10 | 14-8 | 13-4 | 12-7 | 11-8 | 18-9 | 17-0 | 16-0 | 14-11 | 22-10 | 20-9 | 19-6 | 17-5 | | |
| | No.1 | 10-11 | 9-11 | 9-4 | 8-8 | 14-5 | 13-1 | 12-4 | 11-3 | 18-5 | 16-9 | 15-4 | 13-9 | 22-5 | 19-6 | 17-10 | 15-11 | | |
| | No.2 | 10-9 | 9-9 | 9-2 | 8-5 | 14-2 | 12-10 | 11-11 | 10-8 | 18-0 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.3 | 9-1 | 7-11 | 7-2 | 6-5 | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-1 | 9-11 | 16-4 | 14-2 | 12-11 | 11-6 | | |
| Douglas Fir- South | Sel. Struc. | 10-3 | 9-4 | 8-9 | 8-2 | 13-6 | 12-3 | 11-7 | 10-9 | 17-3 | 15-8 | 14-9 | 13-8 | 21-0 | 19-1 | 17-11 | 16-8 | | |
| | No.1 | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-2 | 20-6 | 18-7 | 17-1 | 15-4 | | |
| | No.2 | 9-9 | 8-10 | 8-4 | 7-9 | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 14-0 | 12-8 | 19-11 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Hem-Fir | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-4 | 21-11 | 19-11 | 18-9 | 17-5 | | |
| | No.1 & Btr. | 10-6 | 9-6 | 9-0 | 8-4 | 13-10 | 12-7 | 11-10 | 11-0 | 17-8 | 16-0 | 15-1 | 14-0 | 21-6 | 19-6 | 18-4 | 16-8 | | |
| | No.1 | 10-6 | 9-6 | 9-0 | 8-4 | 13-10 | 12-7 | 11-10 | 11-0 | 17-8 | 16-0 | 15-1 | 13-7 | 21-6 | 19-3 | 17-7 | 15-9 | | |
| | No.2 | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-4 | 16-10 | 15-3 | 14-2 | 12-8 | 20-6 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Spruce- Pine-Fir (South) | Sel. Struc. | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-4 | 20-6 | 18-7 | 17-6 | 16-3 | | |
| | No.1 | 9-9 | 8-10 | 8-4 | 7-9 | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 14-0 | 12-10 | 19-11 | 18-1 | 16-8 | 14-11 | | |
| | No.2 | 9-6 | 8-7 | 8-1 | 7-6 | 12-6 | 11-4 | 10-8 | 9-11 | 15-11 | 14-6 | 13-6 | 12-1 | 19-4 | 17-2 | 15-8 | 14-0 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 5-11 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Western Woods | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-9 | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 14-0 | 13-0 | 19-11 | 18-1 | 16-11 | 15-1 | | |
| | No.1 | 9-6 | 8-7 | 8-1 | 7-4 | 12-6 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.2 | 9-2 | 8-4 | 7-10 | 7-3 | 12-1 | 11-0 | 10-4 | 9-3 | 15-5 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 9-9 | 8-5 | 7-8 | 6-11 | 11-11 | 10-4 | 9-5 | 8-5 | 13-9 | 11-11 | 10-11 | 9-9 | | |

ROOF RAFTERS

60# SNOW LOAD 15# DEAD LOAD L/360

Table RR-45

Design Criteria: Strength - 60 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------|-------|-------|--------|-------------|-------|-------|-------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 13-1 | 11-11 | 11-2 | 10-5 | 16-8 | 15-2 | 14-3 | 13-3 | 20-3 | 18-5 | 17-4 | 16-1 | 23-11 | 21-9 | 20-5 | 18-8 | | |
| | No.1 & Btr. | 12-10 | 11-8 | 11-0 | 10-2 | 16-5 | 14-11 | 14-0 | 12-11 | 19-11 | 18-1 | 16-8 | 14-11 | 23-6 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 12-7 | 11-5 | 10-9 | 9-8 | 16-1 | 14-5 | 13-2 | 11-9 | 19-3 | 16-8 | 15-3 | 13-8 | 21-7 | 18-8 | 17-0 | 15-3 | | |
| | No.2 | 12-4 | 11-2 | 10-3 | 9-2 | 15-9 | 13-8 | 12-6 | 11-2 | 18-4 | 15-10 | 14-6 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| | No.3 | 9-10 | 8-7 | 7-10 | 7-0 | 12-1 | 10-5 | 9-6 | 8-6 | 14-0 | 12-1 | 11-1 | 9-11 | 15-7 | 13-6 | 12-4 | 11-0 | | |
| Douglas Fir-South | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-1 | 13-8 | 12-11 | 11-11 | 18-4 | 16-8 | 15-8 | 14-7 | 21-7 | 19-7 | 18-5 | 17-2 | | |
| | No.1 | 11-6 | 10-6 | 9-10 | 9-2 | 14-8 | 13-4 | 12-7 | 11-4 | 17-11 | 16-1 | 14-8 | 13-1 | 20-9 | 17-11 | 16-5 | 14-8 | | |
| | No.2 | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-1 | 10-10 | 17-5 | 15-5 | 14-1 | 12-7 | 19-10 | 17-2 | 15-8 | 14-1 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 11-9 | 10-2 | 9-4 | 8-4 | 13-8 | 11-10 | 10-9 | 9-8 | 15-3 | 13-2 | 12-1 | 10-9 | | |
| Hem-Fir | Sel. Struc. | 12-4 | 11-3 | 10-7 | 9-10 | 15-9 | 14-4 | 13-6 | 12-6 | 19-2 | 17-5 | 16-5 | 15-2 | 22-7 | 20-6 | 19-3 | 17-11 | | |
| | No.1 & Btr. | 12-1 | 11-0 | 10-4 | 9-7 | 15-5 | 14-0 | 13-2 | 12-3 | 18-9 | 17-0 | 16-0 | 14-4 | 22-1 | 19-7 | 17-10 | 16-0 | | |
| | No.1 | 12-1 | 11-0 | 10-4 | 9-6 | 15-5 | 14-0 | 13-0 | 11-7 | 18-9 | 16-6 | 15-1 | 13-6 | 21-3 | 18-5 | 16-10 | 15-1 | | |
| | No.2 | 11-6 | 10-6 | 9-10 | 8-11 | 14-8 | 13-3 | 12-1 | 10-10 | 17-9 | 15-5 | 14-1 | 12-7 | 19-10 | 17-2 | 15-8 | 14-1 | | |
| | No.3 | 9-8 | 8-4 | 7-7 | 6-10 | 11-9 | 10-2 | 9-4 | 8-4 | 13-8 | 11-10 | 10-9 | 9-8 | 15-3 | 13-2 | 12-1 | 10-9 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-6 | 10-6 | 9-10 | 9-2 | 14-8 | 13-4 | 12-7 | 11-8 | 17-11 | 16-3 | 15-3 | 14-2 | 21-1 | 19-2 | 18-0 | 16-9 | | |
| | No.1 | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-3 | 11-0 | 17-5 | 15-7 | 14-3 | 12-9 | 20-2 | 17-5 | 15-11 | 14-3 | | |
| | No.2 | 10-11 | 9-11 | 9-4 | 8-6 | 13-11 | 12-8 | 11-7 | 10-4 | 16-11 | 14-8 | 13-5 | 12-0 | 19-0 | 16-5 | 15-0 | 13-5 | | |
| | No.3 | 9-2 | 7-11 | 7-3 | 6-5 | 11-2 | 9-8 | 8-10 | 7-11 | 12-11 | 11-2 | 10-3 | 9-2 | 14-5 | 12-6 | 11-5 | 10-3 | | |
| Western Woods | Sel. Struc. | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-3 | 11-2 | 17-5 | 15-10 | 14-6 | 12-11 | 20-5 | 17-8 | 16-2 | 14-5 | | |
| | No.1 | 10-11 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 | | |
| | No.2 | 10-7 | 9-7 | 8-10 | 7-11 | 13-6 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | 17-8 | 15-4 | 14-0 | 12-6 | | |
| | No.3 | 8-4 | 7-3 | 6-7 | 5-11 | 10-2 | 8-10 | 8-1 | 7-2 | 11-10 | 10-3 | 9-4 | 8-4 | 13-2 | 11-5 | 10-5 | 9-4 | | |

ROOF RAFTERS

80# SNOW LOAD 15# DEAD LOAD L/360

Table RR-46

Design Criteria: Strength - 80 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|--------|-------------|-------|-------|--------------|--------------|-------|-------------|-------------|--------------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 11-11 | 10-10 | 10-2 | 9-5 | 15-2 | 13-9 | 12-11 | 12-0 | 18-5 | 16-9 | 15-9 | 14-8 | 21-9 | 19-9 | 18-6 | 16-7 | | |
| | No.1 & Btr. | 11-8 | 10-7 | 10-0 | 9-3 | 14-11 | 13-6 | 12-9 | 11-5 | 18-1 | 16-3 | 14-10 | 13-3 | 21-0 | 18-2 | 16-7 | 14-10 | | |
| | No.1 | 11-5 | 10-5 | 9-7 | 8-7 | 14-7 | 12-10 | 11-8 | 10-5 | 17-2 | 14-10 | 13-7 | 12-1 | 19-2 | 16-7 | 15-2 | 13-6 | | |
| | No.2 | 11-3 | 9-11 | 9-1 | 8-1 | 14-0 | 12-2 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.3 | 8-9 | 7-7 | 6-11 | 6-2 | 10-8 | 9-3 | 8-6 | 7-7 | 12-5 | 10-9 | 9-10 | 8-9 | 13-10 | 12-0 | 11-0 | 9-10 | | |
| Douglas Fir-South | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-10 | 16-8 | 15-2 | 14-3 | 13-3 | 19-7 | 17-10 | 16-9 | 15-7 | | |
| | No.1 | 10-6 | 9-6 | 8-11 | 8-3 | 13-4 | 12-2 | 11-3 | 10-1 | 16-3 | 14-3 | 13-0 | 11-8 | 18-5 | 15-11 | 14-7 | 13-0 | | |
| | No.2 | 10-2 | 9-3 | 8-9 | 7-11 | 13-0 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| | No.3 | 8-7 | 7-5 | 6-9 | 6-1 | 10-5 | 9-1 | 8-3 | 7-5 | 12-1 | 10-6 | 9-7 | 8-7 | 13-6 | 11-9 | 10-8 | 9-7 | | |
| Hem-Fir | Sel. Struc. | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-3 | 11-4 | 17-5 | 15-10 | 14-11 | 13-10 | 20-6 | 18-8 | 17-6 | 16-0 | | |
| | No.1 & Btr. | 11-0 | 10-0 | 9-5 | 8-9 | 14-0 | 12-9 | 12-0 | 11-0 | 17-0 | 15-6 | 14-3 | 12-9 | 20-1 | 17-5 | 15-11 | 14-2 | | |
| | No.1 | 11-0 | 10-0 | 9-5 | 8-5 | 14-0 | 12-8 | 11-6 | 10-4 | 16-11 | 14-8 | 13-5 | 12-0 | 18-11 | 16-4 | 14-11 | 13-4 | | |
| | No.2 | 10-6 | 9-6 | 8-10 | 7-11 | 13-4 | 11-10 | 10-9 | 9-8 | 15-10 | 13-8 | 12-6 | 11-2 | 17-8 | 15-3 | 13-11 | 12-6 | | |
| | No.3 | 8-7 | 7-5 | 6-9 | 6-1 | 10-5 | 9-1 | 8-3 | 7-5 | 12-1 | 10-6 | 9-7 | 8-7 | 13-6 | 11-9 | 10-8 | 9-7 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-6 | 9-6 | 8-11 | 8-4 | 13-4 | 12-2 | 11-5 | 10-7 | 16-3 | 14-9 | 13-11 | 12-11 | 19-2 | 17-5 | 16-4 | 15-2 | | |
| | No.1 | 10-2 | 9-3 | 8-9 | 8-0 | 13-0 | 11-10 | 10-11 | 9-9 | 15-10 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 | | |
| | No.2 | 9-11 | 9-0 | 8-5 | 7-6 | 12-8 | 11-3 | 10-3 | 9-2 | 15-1 | 13-1 | 11-11 | 10-8 | 16-10 | 14-7 | 13-4 | 11-11 | | |
| | No.3 | 8-1 | 7-0 | 6-5 | 5-9 | 9-11 | 8-7 | 7-10 | 7-0 | 11-6 | 9-11 | 9-1 | 8-2 | 12-10 | 11-1 | 10-2 | 9-1 | | |
| Western Woods | Sel. Struc. | 10-2 | 9-3 | 8-9 | 8-1 | 13-0 | 11-10 | 11-1 | 9-11 | 15-10 | 14-1 | 12-10 | 11-6 | 18-2 | 15-9 | 14-4 | 12-10 | | |
| | No.1 | 9-11 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 | | |
| | No.2 | 9-7 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 9-11 | 15-9 | 13-7 | 12-5 | 11-1 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-1 | 7-10 | 7-2 | 6-5 | 10-6 | 9-1 | 8-4 | 7-5 | 11-9 | 10-2 | 9-3 | 8-3 | | |

ROOF RAFTERS

100# SNOW LOAD 15# DEAD LOAD L/360

Table RR-47

Design Criteria: Strength - 100 lbs. per sq. ft. snow load, plus 15 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|------|-------|-------|--------|------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-9 | 14-1 | 12-9 | 12-0 | 11-2 | 17-1 | 15-7 | 14-8 | 13-6 | 20-2 | 18-4 | 16-10 | 15-1 | | |
| | No.1 & Btr. | 10-10 | 9-10 | 9-3 | 8-6 | 13-10 | 12-7 | 11-8 | 10-5 | 16-10 | 14-9 | 13-6 | 12-1 | 19-1 | 16-6 | 15-1 | 13-6 | | |
| | No.1 | 10-8 | 9-6 | 8-8 | 7-9 | 13-5 | 11-8 | 10-7 | 9-6 | 15-7 | 13-6 | 12-4 | 11-0 | 17-5 | 15-1 | 13-9 | 12-4 | | |
| | No.2 | 10-5 | 9-0 | 8-3 | 7-5 | 12-9 | 11-0 | 10-1 | 9-0 | 14-9 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.3 | 8-0 | 6-11 | 6-4 | 5-8 | 9-9 | 8-5 | 7-8 | 6-11 | 11-3 | 9-9 | 8-11 | 8-0 | 12-7 | 10-11 | 10-0 | 8-11 | | |
| Douglas Fir-South | Sel. Struc. | 10-0 | 9-1 | 8-6 | 7-11 | 12-8 | 11-7 | 10-10 | 10-1 | 15-5 | 14-0 | 13-3 | 12-3 | 18-2 | 16-6 | 15-7 | 14-4 | | |
| | No.1 | 9-9 | 8-10 | 8-4 | 7-6 | 12-5 | 11-2 | 10-3 | 9-2 | 15-0 | 13-0 | 11-10 | 10-7 | 16-9 | 14-6 | 13-3 | 11-10 | | |
| | No.2 | 9-6 | 8-7 | 8-0 | 7-2 | 12-1 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Hem-Fir | Sel. Struc. | 10-5 | 9-6 | 8-11 | 8-3 | 13-3 | 12-1 | 11-4 | 10-7 | 16-2 | 14-8 | 13-10 | 12-10 | 19-0 | 17-3 | 16-3 | 14-7 | | |
| | No.1 & Btr. | 10-2 | 9-3 | 8-9 | 8-1 | 13-0 | 11-10 | 11-1 | 10-0 | 15-10 | 14-2 | 12-11 | 11-7 | 18-3 | 15-10 | 14-5 | 12-11 | | |
| | No.1 | 10-2 | 9-3 | 8-7 | 7-8 | 13-0 | 11-6 | 10-6 | 9-5 | 15-5 | 13-4 | 12-2 | 10-10 | 17-2 | 14-11 | 13-7 | 12-2 | | |
| | No.2 | 9-9 | 8-9 | 8-0 | 7-2 | 12-5 | 10-9 | 9-9 | 8-9 | 14-4 | 12-5 | 11-4 | 10-2 | 16-1 | 13-11 | 12-8 | 11-4 | | |
| | No.3 | 7-9 | 6-9 | 6-2 | 5-6 | 9-6 | 8-3 | 7-6 | 6-9 | 11-0 | 9-6 | 8-8 | 7-9 | 12-4 | 10-8 | 9-9 | 8-8 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-9 | 12-5 | 11-3 | 10-7 | 9-10 | 15-1 | 13-8 | 12-11 | 12-0 | 17-9 | 16-2 | 15-2 | 14-0 | | |
| | No.1 | 9-6 | 8-7 | 8-1 | 7-3 | 12-1 | 10-11 | 9-11 | 8-11 | 14-7 | 12-7 | 11-6 | 10-4 | 16-3 | 14-1 | 12-10 | 11-6 | | |
| | No.2 | 9-2 | 8-4 | 7-8 | 6-10 | 11-9 | 10-3 | 9-4 | 8-4 | 13-9 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 | | |
| | No.3 | 7-5 | 6-5 | 5-10 | 5-3 | 9-0 | 7-10 | 7-1 | 6-4 | 10-5 | 9-1 | 8-3 | 7-5 | 11-8 | 10-1 | 9-3 | 8-3 | | |
| Western Woods | Sel. Struc. | 9-6 | 8-7 | 8-1 | 7-5 | 12-1 | 11-0 | 10-1 | 9-0 | 14-8 | 12-10 | 11-8 | 10-5 | 16-6 | 14-4 | 13-1 | 11-8 | | |
| | No.1 | 9-0 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.2 | 8-11 | 7-10 | 7-2 | 6-5 | 11-0 | 9-7 | 8-9 | 7-10 | 12-10 | 11-1 | 10-1 | 9-1 | 14-4 | 12-5 | 11-4 | 10-1 | | |
| | No.3 | 6-9 | 5-10 | 5-4 | 4-9 | 8-3 | 7-1 | 6-6 | 5-10 | 9-6 | 8-3 | 7-6 | 6-9 | 10-8 | 9-3 | 8-5 | 7-6 | | |

ROOF RAFTERS

20# SNOW LOAD 30# DEAD LOAD L/360

Table RR-48

Design Criteria: Strength - 20 lbs. per sq. ft. snow load, plus 30 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | | | |
| Douglas Fir-Larch | Sel. Struc. | 14-4 | 13-0 | 12-3 | 11-4 | 18-10 | 17-2 | 16-1 | 14-5 | 24-1 | 21-7 | 19-9 | 17-8 | 28-11 | 25-1 | 22-10 | 20-5 | | |
| | No.1 & Btr. | 14-1 | 12-6 | 11-5 | 10-2 | 18-3 | 15-10 | 14-5 | 12-11 | 22-4 | 19-4 | 17-8 | 15-9 | 25-11 | 22-5 | 20-5 | 18-4 | | |
| | No.1 | 13-2 | 11-5 | 10-5 | 9-4 | 16-8 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.2 | 12-6 | 10-10 | 9-10 | 8-10 | 15-10 | 13-8 | 12-6 | 11-2 | 19-4 | 16-9 | 15-3 | 13-8 | 22-5 | 19-5 | 17-9 | 15-10 | | |
| | No.3 | 9-6 | 8-3 | 7-7 | 6-9 | 12-1 | 10-6 | 9-7 | 8-7 | 14-9 | 12-9 | 11-8 | 10-5 | 17-1 | 14-10 | 13-6 | 12-1 | | |
| Douglas Fir-South | Sel. Struc. | 12-11 | 11-9 | 11-1 | 10-3 | 17-0 | 15-6 | 14-7 | 13-6 | 21-9 | 19-9 | 18-7 | 16-9 | 26-5 | 23-9 | 21-8 | 19-5 | | |
| | No.1 | 12-7 | 11-0 | 10-0 | 8-11 | 16-0 | 13-11 | 12-8 | 11-4 | 19-7 | 17-0 | 15-6 | 13-10 | 22-9 | 19-8 | 18-0 | 16-1 | | |
| | No.2 | 12-2 | 10-6 | 9-7 | 8-7 | 15-4 | 13-4 | 12-2 | 10-10 | 18-9 | 16-3 | 14-10 | 13-3 | 21-9 | 18-10 | 17-3 | 15-5 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Hem-Fir | Sel. Struc. | 13-6 | 12-3 | 11-7 | 10-9 | 17-10 | 16-2 | 15-3 | 13-11 | 22-9 | 20-8 | 19-1 | 17-1 | 27-8 | 24-2 | 22-1 | 19-9 | | |
| | No.1 & Btr. | 13-3 | 12-0 | 10-11 | 9-9 | 17-5 | 15-2 | 13-10 | 12-4 | 21-4 | 18-6 | 16-11 | 15-1 | 24-9 | 21-5 | 19-7 | 17-6 | | |
| | No.1 | 13-0 | 11-3 | 10-3 | 9-2 | 16-6 | 14-3 | 13-0 | 11-8 | 20-1 | 17-5 | 15-11 | 14-3 | 23-4 | 20-2 | 18-5 | 16-6 | | |
| | No.2 | 12-2 | 10-6 | 9-7 | 8-7 | 15-4 | 13-4 | 12-2 | 10-10 | 18-9 | 16-3 | 14-10 | 13-3 | 21-9 | 18-10 | 17-3 | 15-5 | | |
| | No.3 | 9-4 | 8-1 | 7-4 | 6-7 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 12-7 | 11-5 | 10-9 | 10-0 | 16-7 | 15-1 | 14-2 | 13-2 | 21-2 | 19-3 | 18-1 | 16-5 | 25-9 | 23-4 | 21-3 | 19-1 | | |
| | No.1 | 12-3 | 10-8 | 9-9 | 8-9 | 15-7 | 13-6 | 12-4 | 11-0 | 19-1 | 16-6 | 15-1 | 13-6 | 22-1 | 19-2 | 17-6 | 15-7 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-9 | 11-7 | 10-5 | 17-11 | 15-6 | 14-2 | 12-8 | 20-10 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-10 | 7-8 | 7-0 | 6-3 | 11-2 | 9-8 | 8-10 | 7-11 | 13-8 | 11-10 | 10-10 | 9-8 | 15-10 | 13-9 | 12-6 | 11-2 | | |
| Western Woods | Sel. Struc. | 12-3 | 10-10 | 9-10 | 8-10 | 15-10 | 13-8 | 12-6 | 11-2 | 19-4 | 16-9 | 15-3 | 13-8 | 22-5 | 19-5 | 17-9 | 15-10 | | |
| | No.1 | 10-10 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| | No.2 | 10-10 | 9-4 | 8-7 | 7-8 | 13-8 | 11-10 | 10-10 | 9-8 | 16-9 | 14-6 | 13-3 | 11-10 | 19-5 | 16-10 | 15-4 | 13-9 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | | |

ROOF RAFTERS

25# SNOW LOAD 30# DEAD LOAD L/360

Table RR-49

Design Criteria: Strength - 25 lbs. per sq. ft. snow load, plus 30 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|-------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 13-3 | 12-1 | 11-4 | 10-6 | 17-6 | 15-11 | 15-0 | 13-9 | 22-4 | 20-3 | 18-10 | 16-10 | 27-2 | 23-11 | 21-10 | 19-6 | | |
| | No.1 & Btr. | 13-1 | 11-10 | 10-10 | 9-9 | 17-2 | 15-1 | 13-9 | 12-4 | 21-3 | 18-5 | 16-10 | 15-1 | 24-8 | 21-4 | 19-6 | 17-5 | | |
| | No.1 | 12-7 | 10-10 | 9-11 | 8-11 | 15-11 | 13-9 | 12-7 | 11-3 | 19-5 | 16-10 | 15-4 | 13-9 | 22-6 | 19-6 | 17-10 | 15-11 | | |
| | No.2 | 11-11 | 10-4 | 9-5 | 8-5 | 15-1 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.3 | 9-1 | 7-11 | 7-2 | 6-5 | 11-6 | 10-0 | 9-1 | 8-2 | 14-1 | 12-2 | 11-1 | 9-11 | 16-4 | 14-2 | 12-11 | 11-6 | | |
| Douglas Fir-South | Sel. Struc. | 12-0 | 10-11 | 10-3 | 9-6 | 15-10 | 14-4 | 13-6 | 12-7 | 20-2 | 18-4 | 17-3 | 15-11 | 24-6 | 22-3 | 20-8 | 18-6 | | |
| | No.1 | 11-8 | 10-5 | 9-7 | 8-6 | 15-3 | 13-3 | 12-1 | 10-10 | 18-8 | 16-2 | 14-9 | 13-2 | 21-8 | 18-9 | 17-1 | 15-4 | | |
| | No.2 | 11-5 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Hem-Fir | Sel. Struc. | 12-6 | 11-5 | 10-9 | 9-11 | 16-6 | 15-0 | 14-2 | 13-1 | 21-1 | 19-2 | 18-0 | 16-3 | 25-8 | 23-1 | 21-1 | 18-10 | | |
| | No.1 & Btr. | 12-3 | 11-2 | 10-5 | 9-4 | 16-2 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 12-3 | 10-9 | 9-10 | 8-9 | 15-8 | 13-7 | 12-5 | 11-1 | 19-2 | 16-7 | 15-2 | 13-7 | 22-3 | 19-3 | 17-7 | 15-9 | | |
| | No.2 | 11-7 | 10-0 | 9-2 | 8-2 | 14-8 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.3 | 8-11 | 7-8 | 7-0 | 6-3 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-8 | 10-8 | 10-0 | 9-3 | 15-5 | 14-0 | 13-2 | 12-3 | 19-8 | 17-11 | 16-10 | 15-7 | 23-11 | 21-9 | 20-4 | 18-2 | | |
| | No.1 | 11-5 | 10-2 | 9-3 | 8-4 | 14-10 | 12-11 | 11-9 | 10-6 | 18-2 | 15-9 | 14-4 | 12-10 | 21-1 | 18-3 | 16-8 | 14-11 | | |
| | No.2 | 11-1 | 9-7 | 8-9 | 7-10 | 14-0 | 12-1 | 11-1 | 9-11 | 17-1 | 14-10 | 13-6 | 12-1 | 19-10 | 17-2 | 15-8 | 14-0 | | |
| | No.3 | 8-5 | 7-4 | 6-8 | 5-11 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | | |
| Western Woods | Sel. Struc. | 11-5 | 10-4 | 9-5 | 8-5 | 15-0 | 13-1 | 11-11 | 10-8 | 18-5 | 15-11 | 14-7 | 13-0 | 21-4 | 18-6 | 16-11 | 15-1 | | |
| | No.1 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.2 | 10-4 | 8-11 | 8-2 | 7-4 | 13-1 | 11-4 | 10-4 | 9-3 | 15-11 | 13-10 | 12-7 | 11-3 | 18-6 | 16-0 | 14-8 | 13-1 | | |
| | No.3 | 7-8 | 6-8 | 6-1 | 5-5 | 9-9 | 8-5 | 7-8 | 6-11 | 11-11 | 10-4 | 9-5 | 8-5 | 13-9 | 11-11 | 10-11 | 9-9 | | |

ROOF RAFTERS

30# SNOW LOAD 30# DEAD LOAD L/360

Table RR-50

Design Criteria: Strength - 30 lbs. per sq. ft. snow load, plus 30 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| Species or Group | | Grade | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|-------|------|------------------------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|------|--|--|
| | | | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| | | | | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | | |
| Douglas Fir-Larch | Sel. Struc. | 12-6 | 11-4 | 10-8 | 9-11 | 16-6 | 15-0 | 14-1 | 13-1 | 21-0 | 19-1 | 18-0 | 16-1 | 25-7 | 22-10 | 20-11 | 18-8 | | |
| | No.1 & Btr. | 12-3 | 11-2 | 10-5 | 9-4 | 16-2 | 14-5 | 13-2 | 11-9 | 20-4 | 17-8 | 16-1 | 14-5 | 23-7 | 20-5 | 18-8 | 16-8 | | |
| | No.1 | 12-0 | 10-5 | 9-6 | 8-6 | 15-3 | 13-2 | 12-0 | 10-9 | 18-7 | 16-1 | 14-8 | 13-2 | 21-7 | 18-8 | 17-1 | 15-3 | | |
| | No.2 | 11-5 | 9-10 | 9-0 | 8-1 | 14-5 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.3 | 8-9 | 7-7 | 6-11 | 6-2 | 11-0 | 9-7 | 8-9 | 7-10 | 13-6 | 11-8 | 10-8 | 9-6 | 15-7 | 13-6 | 12-4 | 11-1 | | |
| Douglas Fir-South | Sel. Struc. | 11-3 | 10-3 | 9-8 | 8-11 | 14-11 | 13-6 | 12-9 | 11-10 | 19-0 | 17-3 | 16-3 | 15-1 | 23-1 | 21-0 | 19-9 | 17-9 | | |
| | No.1 | 11-0 | 10-0 | 9-2 | 8-2 | 14-6 | 12-8 | 11-7 | 10-4 | 17-11 | 15-6 | 14-2 | 12-8 | 20-9 | 18-0 | 16-5 | 14-8 | | |
| | No.2 | 10-9 | 9-7 | 8-9 | 7-10 | 14-0 | 12-2 | 11-1 | 9-11 | 17-2 | 14-10 | 13-7 | 12-1 | 19-11 | 17-3 | 15-9 | 14-1 | | |
| | No.3 | 8-6 | 7-4 | 6-9 | 6-0 | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-2 | 12-1 | 10-9 | | |
| Hem-Fir | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-7 | 14-2 | 13-4 | 12-4 | 19-10 | 18-0 | 17-0 | 15-7 | 24-2 | 21-11 | 20-2 | 18-0 | | |
| | No.1 & Btr. | 11-7 | 10-6 | 9-10 | 8-11 | 15-3 | 13-10 | 12-7 | 11-3 | 19-5 | 16-11 | 15-5 | 13-9 | 22-7 | 19-7 | 17-11 | 16-0 | | |
| | No.1 | 11-7 | 10-3 | 9-5 | 8-5 | 15-0 | 13-0 | 11-11 | 10-8 | 18-4 | 15-11 | 14-6 | 13-0 | 21-3 | 18-5 | 16-10 | 15-1 | | |
| | No.2 | 11-0 | 9-7 | 8-9 | 7-10 | 14-0 | 12-2 | 11-1 | 9-11 | 17-2 | 14-10 | 13-7 | 12-1 | 19-11 | 17-3 | 15-9 | 14-1 | | |
| | No.3 | 8-6 | 7-4 | 6-9 | 6-0 | 10-9 | 9-4 | 8-6 | 7-7 | 13-2 | 11-5 | 10-5 | 9-4 | 15-3 | 13-2 | 12-1 | 10-9 | | |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-9 | 14-6 | 13-2 | 12-5 | 11-6 | 18-6 | 16-10 | 15-10 | 14-8 | 22-6 | 20-6 | 19-3 | 17-5 | | |
| | No.1 | 10-9 | 9-9 | 8-11 | 7-11 | 14-2 | 12-4 | 11-3 | 10-1 | 17-5 | 15-1 | 13-9 | 12-4 | 20-2 | 17-6 | 15-11 | 14-3 | | |
| | No.2 | 10-5 | 9-2 | 8-4 | 7-6 | 13-5 | 11-7 | 10-7 | 9-6 | 16-4 | 14-2 | 12-11 | 11-7 | 19-0 | 16-5 | 15-0 | 13-5 | | |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | | |
| Western Woods | Sel. Struc. | 10-9 | 9-9 | 9-0 | 8-1 | 14-2 | 12-6 | 11-5 | 10-3 | 17-8 | 15-3 | 13-11 | 12-6 | 20-5 | 17-9 | 16-2 | 14-6 | | |
| | No.1 | 9-10 | 8-7 | 7-10 | 7-0 | 12-6 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-9 | 15-4 | 14-0 | 12-6 | | |
| | No.2 | 9-10 | 8-7 | 7-10 | 7-0 | 12-6 | 10-10 | 9-11 | 8-10 | 15-3 | 13-3 | 12-1 | 10-10 | 17-9 | 15-4 | 14-0 | 12-6 | | |
| | No.3 | 7-4 | 6-4 | 5-10 | 5-2 | 9-4 | 8-1 | 7-4 | 6-7 | 11-5 | 9-10 | 9-0 | 8-1 | 13-2 | 11-5 | 10-5 | 9-4 | | |

ROOF RAFTERS

40# SNOW LOAD 30# DEAD LOAD L/360

Table RR-51

Design Criteria: *Strength* - 40 lbs. per sq. ft. snow load, plus 30 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 6 | | | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 11-4 | 10-4 | 9-8 | 9-0 | 15-0 | 13-7 | 12-10 | 11-11 | 19-1 | 17-4 | 16-4 | 14-11 | 23-3 | 21-1 | 19-4 | 17-3 |
| | No.1 & Btr. | 11-2 | 10-2 | 9-6 | 8-7 | 14-8 | 13-4 | 12-2 | 10-11 | 18-9 | 16-4 | 14-11 | 13-4 | 21-10 | 18-11 | 17-3 | 15-6 |
| | No.1 | 10-11 | 9-8 | 8-10 | 7-10 | 14-1 | 12-2 | 11-2 | 10-0 | 17-3 | 14-11 | 13-7 | 12-2 | 20-0 | 17-3 | 15-9 | 14-1 |
| | No.2 | 10-7 | 9-2 | 8-4 | 7-6 | 13-4 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 |
| | No.3 | 8-1 | 7-0 | 6-4 | 5-8 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 |
| Douglas Fir-South | Sel. Struc. | 10-3 | 9-4 | 8-9 | 8-2 | 13-6 | 12-3 | 11-7 | 10-9 | 17-3 | 15-8 | 14-9 | 13-8 | 21-0 | 19-1 | 17-11 | 16-5 |
| | No.1 | 10-0 | 9-1 | 8-6 | 7-7 | 13-2 | 11-9 | 10-9 | 9-7 | 16-7 | 14-4 | 13-1 | 11-8 | 19-2 | 16-8 | 15-2 | 13-7 |
| | No.2 | 9-9 | 8-10 | 8-1 | 7-3 | 12-10 | 11-3 | 10-3 | 9-2 | 15-10 | 13-9 | 12-7 | 11-3 | 18-5 | 15-11 | 14-7 | 13-0 |
| | No.3 | 7-10 | 6-10 | 6-3 | 5-7 | 10-0 | 8-8 | 7-11 | 7-1 | 12-2 | 10-7 | 9-7 | 8-7 | 14-1 | 12-3 | 11-2 | 10-0 |
| Hem-Fir | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 14-2 | 12-10 | 12-1 | 11-3 | 18-0 | 16-5 | 15-5 | 14-4 | 21-11 | 19-11 | 18-8 | 16-8 |
| | No.1 & Btr. | 10-6 | 9-6 | 9-0 | 8-3 | 13-10 | 12-7 | 11-8 | 10-5 | 17-8 | 15-8 | 14-3 | 12-9 | 20-11 | 18-2 | 16-7 | 14-10 |
| | No.1 | 10-6 | 9-6 | 8-8 | 7-9 | 13-10 | 12-1 | 11-0 | 9-10 | 17-0 | 14-9 | 13-5 | 12-0 | 19-9 | 17-1 | 15-7 | 13-11 |
| | No.2 | 10-0 | 8-11 | 8-1 | 7-3 | 13-0 | 11-3 | 10-3 | 9-2 | 15-10 | 13-9 | 12-7 | 11-3 | 18-5 | 15-11 | 14-7 | 13-0 |
| | No.3 | 7-10 | 6-10 | 6-3 | 5-7 | 10-0 | 8-8 | 7-11 | 7-1 | 12-2 | 10-7 | 9-7 | 8-7 | 14-1 | 12-3 | 11-2 | 10-0 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-0 | 9-1 | 8-7 | 7-11 | 13-2 | 12-0 | 11-3 | 10-6 | 16-10 | 15-3 | 14-5 | 13-4 | 20-6 | 18-7 | 17-6 | 16-1 |
| | No.1 | 9-9 | 8-10 | 8-3 | 7-4 | 12-10 | 11-5 | 10-5 | 9-4 | 16-1 | 13-11 | 12-9 | 11-5 | 18-8 | 16-2 | 14-9 | 13-2 |
| | No.2 | 9-6 | 8-6 | 7-9 | 6-11 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-1 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 |
| | No.3 | 7-6 | 6-6 | 5-11 | 5-3 | 9-5 | 8-2 | 7-6 | 6-8 | 11-7 | 10-0 | 9-2 | 8-2 | 13-5 | 11-7 | 10-7 | 9-6 |
| Western Woods | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-6 | 12-10 | 11-7 | 10-7 | 9-5 | 16-4 | 14-2 | 12-11 | 11-7 | 18-11 | 16-5 | 15-0 | 13-5 |
| | No.1 | 9-2 | 7-11 | 7-3 | 6-6 | 11-7 | 10-0 | 9-2 | 8-2 | 14-2 | 12-3 | 11-2 | 10-0 | 16-5 | 14-2 | 13-0 | 11-7 |
| | No.2 | 9-2 | 7-11 | 7-3 | 6-6 | 11-7 | 10-0 | 9-2 | 8-2 | 14-2 | 12-3 | 11-2 | 10-0 | 16-5 | 14-2 | 13-0 | 11-7 |
| | No.3 | 6-10 | 5-11 | 5-5 | 4-10 | 8-8 | 7-6 | 6-10 | 6-1 | 10-7 | 9-2 | 8-4 | 7-5 | 12-3 | 10-7 | 9-8 | 8-8 |

ROOF RAFTERS

60# SNOW LOAD 30# DEAD LOAD L/360

Table RR-52

Design Criteria: *Strength* - 60 lbs. per sq. ft. snow load, plus 30 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|-------|-------|------|--------|-------|-------|-------|--------|------|-------|-------|--------|-------|-------|-------|
| | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 13-1 | 11-11 | 11-2 | 10-5 | 16-8 | 15-2 | 14-3 | 13-2 | 20-3 | 18-5 | 17-1 | 15-3 | 23-11 | 20-10 | 19-1 | 17-0 |
| | No.1 & Btr. | 12-10 | 11-8 | 10-9 | 9-8 | 16-5 | 14-5 | 13-2 | 11-9 | 19-3 | 16-8 | 15-3 | 13-8 | 21-7 | 18-8 | 17-0 | 15-3 |
| | No.1 | 12-5 | 10-9 | 9-10 | 8-9 | 15-2 | 13-2 | 12-0 | 10-9 | 17-7 | 15-3 | 13-11 | 12-5 | 19-8 | 17-0 | 15-7 | 13-11 |
| | No.2 | 11-9 | 10-3 | 9-4 | 8-4 | 14-5 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | 18-8 | 16-2 | 14-9 | 13-2 |
| | No.3 | 9-0 | 7-10 | 7-1 | 6-4 | 11-0 | 9-6 | 8-8 | 7-9 | 12-9 | 11-1 | 10-1 | 9-0 | 14-3 | 12-4 | 11-3 | 10-1 |
| Douglas Fir-South | Sel. Struc. | 11-10 | 10-9 | 10-1 | 9-4 | 15-1 | 13-8 | 12-11 | 11-11 | 18-4 | 16-8 | 15-8 | 14-6 | 21-7 | 19-7 | 18-1 | 16-2 |
| | No.1 | 11-6 | 10-4 | 9-5 | 8-5 | 14-7 | 12-8 | 11-7 | 10-4 | 16-11 | 14-8 | 13-5 | 12-0 | 18-11 | 16-5 | 14-11 | 13-5 |
| | No.2 | 11-3 | 9-11 | 9-1 | 8-1 | 14-0 | 12-1 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-8 | 14-4 | 12-10 |
| | No.3 | 8-9 | 7-7 | 6-11 | 6-3 | 10-9 | 9-4 | 8-6 | 7-7 | 12-5 | 10-9 | 9-10 | 8-10 | 13-11 | 12-1 | 11-0 | 9-10 |
| Hem-Fir | Sel. Struc. | 12-4 | 11-3 | 10-7 | 9-10 | 15-9 | 14-4 | 13-6 | 12-6 | 19-2 | 17-5 | 16-5 | 14-9 | 22-7 | 20-2 | 18-5 | 16-6 |
| | No.1 & Btr. | 12-1 | 11-0 | 10-4 | 9-3 | 15-5 | 13-9 | 12-7 | 11-3 | 18-6 | 16-0 | 14-7 | 13-1 | 20-8 | 17-10 | 16-4 | 14-7 |
| | No.1 | 12-1 | 10-8 | 9-8 | 8-8 | 15-0 | 13-0 | 11-10 | 10-7 | 17-5 | 15-1 | 13-9 | 12-4 | 19-5 | 16-10 | 15-4 | 13-9 |
| | No.2 | 11-6 | 9-11 | 9-1 | 8-1 | 14-0 | 12-1 | 11-1 | 9-11 | 16-3 | 14-1 | 12-10 | 11-6 | 18-2 | 15-8 | 14-4 | 12-10 |
| | No.3 | 8-9 | 7-7 | 6-11 | 6-3 | 10-9 | 9-4 | 8-6 | 7-7 | 12-5 | 10-9 | 9-10 | 8-10 | 13-11 | 12-1 | 11-0 | 9-10 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 11-6 | 10-6 | 9-10 | 9-2 | 14-8 | 13-4 | 12-7 | 11-8 | 17-11 | 16-3 | 15-3 | 14-2 | 21-1 | 19-2 | 17-9 | 15-10 |
| | No.1 | 11-3 | 10-1 | 9-2 | 8-3 | 14-2 | 12-4 | 11-3 | 10-1 | 16-6 | 14-3 | 13-0 | 11-8 | 18-5 | 15-11 | 14-7 | 13-0 |
| | No.2 | 10-11 | 9-6 | 8-8 | 7-9 | 13-4 | 11-7 | 10-7 | 9-5 | 15-6 | 13-5 | 12-3 | 11-0 | 17-4 | 15-0 | 13-8 | 12-3 |
| | No.3 | 8-4 | 7-3 | 6-7 | 5-11 | 10-2 | 8-10 | 8-1 | 7-2 | 11-10 | 10-3 | 9-4 | 8-4 | 13-2 | 11-5 | 10-5 | 9-4 |
| Western Woods | Sel. Struc. | 11-3 | 10-2 | 9-4 | 8-4 | 14-4 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | 18-8 | 16-2 | 14-9 | 13-2 |
| | No.1 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | 16-2 | 14-0 | 12-9 | 11-5 |
| | No.2 | 10-3 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | 16-2 | 14-0 | 12-9 | 11-5 |
| | No.3 | 7-7 | 6-7 | 6-0 | 5-5 | 9-4 | 8-1 | 7-4 | 6-7 | 10-9 | 9-4 | 8-6 | 7-7 | 12-1 | 10-5 | 9-6 | 8-6 |

ROOF RAFTERS

80# SNOW LOAD 30# DEAD LOAD L/360

Table RR-53

Design Criteria: Strength - 80 lbs. per sq. ft. snow load, plus 30 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|-------|-------|------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 11-11 | 10-10 | 10-2 | 9-5 | 15-2 | 13-9 | 12-11 | 11-11 | 18-5 | 16-9 | 15-5 | 13-9 | 21-9 | 18-10 | 17-3 | 15-5 |
| | No.1 & Btr. | 11-8 | 10-7 | 9-9 | 8-8 | 14-11 | 13-0 | 11-11 | 10-8 | 17-5 | 15-1 | 13-9 | 12-4 | 19-6 | 16-11 | 15-5 | 13-9 |
| | No.1 | 11-3 | 9-9 | 8-11 | 7-11 | 13-9 | 11-11 | 10-10 | 9-9 | 15-11 | 13-9 | 12-7 | 11-3 | 17-10 | 15-5 | 14-1 | 12-7 |
| | No.2 | 10-8 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | 16-11 | 14-7 | 13-4 | 11-11 |
| | No.3 | 8-2 | 7-1 | 6-5 | 5-9 | 9-11 | 8-7 | 7-10 | 7-0 | 11-6 | 10-0 | 9-1 | 8-2 | 12-11 | 11-2 | 10-2 | 9-1 |
| Douglas Fir-South | Sel. Struc. | 10-9 | 9-9 | 9-2 | 8-6 | 13-8 | 12-5 | 11-8 | 10-10 | 16-8 | 15-2 | 14-3 | 13-1 | 19-7 | 17-10 | 16-4 | 14-7 |
| | No.1 | 10-6 | 9-4 | 8-7 | 7-8 | 13-2 | 11-5 | 10-5 | 9-4 | 15-4 | 13-3 | 12-1 | 10-10 | 17-1 | 14-10 | 13-6 | 12-1 |
| | No.2 | 10-2 | 9-0 | 8-2 | 7-4 | 12-8 | 11-0 | 10-0 | 8-11 | 14-8 | 12-9 | 11-7 | 10-5 | 16-5 | 14-2 | 13-0 | 11-7 |
| | No.3 | 7-11 | 6-11 | 6-3 | 5-7 | 9-9 | 8-5 | 7-8 | 6-10 | 11-3 | 9-9 | 8-11 | 8-0 | 12-7 | 10-11 | 9-11 | 8-11 |
| Hem-Fir | Sel. Struc. | 11-3 | 10-2 | 9-7 | 8-11 | 14-4 | 13-0 | 12-3 | 11-4 | 17-5 | 15-10 | 14-11 | 13-4 | 20-6 | 18-3 | 16-8 | 14-11 |
| | No.1 & Btr. | 11-0 | 10-0 | 9-4 | 8-4 | 14-0 | 12-6 | 11-5 | 10-2 | 16-8 | 14-6 | 13-2 | 11-10 | 18-8 | 16-2 | 14-9 | 13-2 |
| | No.1 | 11-0 | 9-7 | 8-9 | 7-10 | 13-7 | 11-9 | 10-9 | 9-7 | 15-9 | 13-7 | 12-5 | 11-1 | 17-7 | 15-3 | 13-11 | 12-5 |
| | No.2 | 10-4 | 9-0 | 8-2 | 7-4 | 12-8 | 11-0 | 10-0 | 8-11 | 14-8 | 12-9 | 11-7 | 10-5 | 16-5 | 14-2 | 13-0 | 11-7 |
| | No.3 | 7-11 | 6-11 | 6-3 | 5-7 | 9-9 | 8-5 | 7-8 | 6-10 | 11-3 | 9-9 | 8-11 | 8-0 | 12-7 | 10-11 | 9-11 | 8-11 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 10-6 | 9-6 | 8-11 | 8-4 | 13-4 | 12-2 | 11-5 | 10-7 | 16-3 | 14-9 | 13-11 | 12-10 | 19-2 | 17-5 | 16-0 | 14-4 |
| | No.1 | 10-2 | 9-1 | 8-4 | 7-5 | 12-10 | 11-1 | 10-2 | 9-1 | 14-11 | 12-11 | 11-9 | 10-6 | 16-8 | 14-5 | 13-2 | 11-9 |
| | No.2 | 9-11 | 8-7 | 7-10 | 7-0 | 12-1 | 10-6 | 9-7 | 8-7 | 14-0 | 12-2 | 11-1 | 9-11 | 15-8 | 13-7 | 12-5 | 11-1 |
| | No.3 | 7-6 | 6-6 | 6-0 | 5-4 | 9-3 | 8-0 | 7-3 | 6-6 | 10-8 | 9-3 | 8-5 | 7-7 | 11-11 | 10-4 | 9-5 | 8-5 |
| Western Woods | Sel. Struc. | 10-2 | 9-3 | 8-5 | 7-6 | 13-0 | 11-3 | 10-4 | 9-3 | 15-1 | 13-1 | 11-11 | 10-8 | 16-11 | 14-7 | 13-4 | 11-11 |
| | No.1 | 9-3 | 8-0 | 7-4 | 6-6 | 11-3 | 9-9 | 8-11 | 8-0 | 13-1 | 11-4 | 10-4 | 9-3 | 14-7 | 12-8 | 11-7 | 10-4 |
| | No.2 | 9-3 | 8-0 | 7-4 | 6-6 | 11-3 | 9-9 | 8-11 | 8-0 | 13-1 | 11-4 | 10-4 | 9-3 | 14-7 | 12-8 | 11-7 | 10-4 |
| | No.3 | 6-11 | 6-0 | 5-5 | 4-10 | 8-5 | 7-3 | 6-8 | 5-11 | 9-9 | 8-5 | 7-9 | 6-11 | 10-11 | 9-5 | 8-7 | 7-8 |

ROOF RAFTERS

100# SNOW LOAD 30# DEAD LOAD L/360

Table RR-54

Design Criteria: Strength - 100 lbs. per sq. ft. snow load, plus 30 lbs. per sq. ft. dead load.
Deflection - Limited in span in inches divided by 360 for live load only.

| | | Span (feet and inches) | | | | | | | | | | | | | | | |
|-------------------------|-------------|------------------------|------|-------|------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | 2 x 8 | | | | 2 x 10 | | | | 2 x 12 | | | | 2 x 14 | | | |
| Species or Group | Grade | spacing on center | | | | | | | | | | | | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| Douglas Fir-Larch | Sel. Struc. | 11-0 | 10-0 | 9-5 | 8-9 | 14-1 | 12-9 | 12-0 | 10-11 | 17-1 | 15-6 | 14-2 | 12-8 | 20-1 | 17-4 | 15-10 | 14-2 |
| | No.1 & Btr. | 10-10 | 9-10 | 8-11 | 8-0 | 13-10 | 12-0 | 10-11 | 9-9 | 16-1 | 13-11 | 12-8 | 11-4 | 17-11 | 15-6 | 14-2 | 12-8 |
| | No.1 | 10-4 | 8-11 | 8-2 | 7-4 | 12-8 | 10-11 | 10-0 | 8-11 | 14-8 | 12-8 | 11-7 | 10-4 | 16-4 | 14-2 | 12-11 | 11-7 |
| | No.2 | 9-10 | 8-6 | 7-9 | 6-11 | 12-0 | 10-5 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | 15-6 | 13-5 | 12-3 | 11-0 |
| | No.3 | 7-6 | 6-6 | 5-11 | 5-4 | 9-2 | 7-11 | 7-3 | 6-6 | 10-7 | 9-2 | 8-5 | 7-6 | 11-10 | 10-3 | 9-5 | 8-5 |
| Douglas Fir-South | Sel. Struc. | 10-0 | 9-1 | 8-6 | 7-11 | 12-8 | 11-7 | 10-10 | 10-1 | 15-5 | 14-0 | 13-3 | 12-0 | 18-2 | 16-6 | 15-0 | 13-5 |
| | No.1 | 9-9 | 8-7 | 7-10 | 7-0 | 12-2 | 10-6 | 9-7 | 8-7 | 14-1 | 12-2 | 11-2 | 10-0 | 15-9 | 13-8 | 12-5 | 11-2 |
| | No.2 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-7 | 15-1 | 13-1 | 11-11 | 10-8 |
| | No.3 | 7-4 | 6-4 | 5-9 | 5-2 | 8-11 | 7-9 | 7-1 | 6-4 | 10-4 | 9-0 | 8-2 | 7-4 | 11-7 | 10-0 | 9-2 | 8-2 |
| Hem-Fir | Sel. Struc. | 10-5 | 9-6 | 8-11 | 8-3 | 13-3 | 12-1 | 11-4 | 10-7 | 16-2 | 14-8 | 13-8 | 12-3 | 19-0 | 16-9 | 15-4 | 13-8 |
| | No.1 & Btr. | 10-2 | 9-3 | 8-7 | 7-8 | 13-0 | 11-6 | 10-6 | 9-4 | 15-4 | 13-4 | 12-2 | 10-10 | 17-2 | 14-10 | 13-7 | 12-2 |
| | No.1 | 10-2 | 8-10 | 8-1 | 7-3 | 12-6 | 10-10 | 9-10 | 8-10 | 14-6 | 12-6 | 11-5 | 10-3 | 16-2 | 14-0 | 12-9 | 11-5 |
| | No.2 | 9-6 | 8-3 | 7-6 | 6-9 | 11-8 | 10-1 | 9-2 | 8-3 | 13-6 | 11-8 | 10-8 | 9-7 | 15-1 | 13-1 | 11-11 | 10-8 |
| | No.3 | 7-4 | 6-4 | 5-9 | 5-2 | 8-11 | 7-9 | 7-1 | 6-4 | 10-4 | 9-0 | 8-2 | 7-4 | 11-7 | 10-0 | 9-2 | 8-2 |
| Spruce-Pine-Fir (South) | Sel. Struc. | 9-9 | 8-10 | 8-4 | 7-9 | 12-5 | 11-3 | 10-7 | 9-10 | 15-1 | 13-8 | 12-11 | 11-10 | 17-9 | 16-2 | 14-9 | 13-2 |
| | No.1 | 9-6 | 8-5 | 7-8 | 6-10 | 11-10 | 10-3 | 9-4 | 8-4 | 13-8 | 11-10 | 10-10 | 9-8 | 15-4 | 13-3 | 12-1 | 10-10 |
| | No.2 | 9-1 | 7-11 | 7-2 | 6-5 | 11-1 | 9-8 | 8-10 | 7-10 | 12-11 | 11-2 | 10-2 | 9-1 | 14-5 | 12-6 | 11-5 | 10-2 |
| | No.3 | 6-11 | 6-0 | 5-6 | 4-11 | 8-6 | 7-4 | 6-8 | 6-0 | 9-10 | 8-6 | 7-9 | 6-11 | 11-0 | 9-6 | 8-8 | 7-9 |
| Western Woods | Sel. Struc. | 9-6 | 8-6 | 7-9 | 6-11 | 12-0 | 10-5 | 9-6 | 8-6 | 13-11 | 12-0 | 11-0 | 9-10 | 15-6 | 13-5 | 12-3 | 11-0 |
| | No.1 | 8-6 | 7-4 | 6-9 | 6-0 | 10-5 | 9-0 | 8-2 | 7-4 | 12-0 | 10-5 | 9-6 | 8-6 | 13-5 | 11-8 | 10-8 | 9-6 |
| | No.2 | 8-6 | 7-4 | 6-9 | 6-0 | 10-5 | 9-0 | 8-2 | 7-4 | 12-0 | 10-5 | 9-6 | 8-6 | 13-5 | 11-8 | 10-8 | 9-6 |
| | No.3 | 6-4 | 5-6 | 5-0 | 4-6 | 7-9 | 6-8 | 6-1 | 5-6 | 9-0 | 7-9 | 7-1 | 6-4 | 10-0 | 8-8 | 7-11 | 7-1 |



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