PACIFIC LUMBER INSPECTION BUREAU

# Simplified Span Tables

## For Light Frame Construction
## Imported Species

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## INTRODUCTION

The simplified span tables which appear in this booklet have been prepared by the Pacific Lumber Inspection Bureau to facilitate the use and specification of selected imported softwood species in common joist and rafter installations for light frame construction. The imported species covered are those listed in PLIB's *Standard No. 17* (1) and include the following imported species:

### Imported species

- Austrian spruce from Austria and Czech Republic
- Douglas fir from France and Germany
- Norway spruce from Estonia, Latvia and Lithuania
- Norway spruce from Finland
- Norway spruce from Germany, NE France and Switzerland
- Norway spruce from Norway
- Norway spruce from Romania and Ukraine
- Norway spruce from Sweden
- Scots pine from Austria and Czech Republic, Romanian and Ukraine
- Scots pine from Estonia, Latvia, and Lithuania
- Scots pine from Finland
- Scots pine from Germany
- Scots pine from Sweden
- Silver fir (Abies alba) from Germany, NE France and Switzerland

Tables for determining allowable spans for joists and rafters are presented in tabular form as feet and inches. For other spacings and loading criteria, please refer to the American Wood Council's (AWC) *Design Values for STJR* (2) publication.

## REFERENCES

1. Pacific Lumber Inspection Bureau. 2018. Standard No. 17 Grading Rules for West Coast Lumber. 1010 S. 336th St. Suite 210, Federal Way, WA 98003.

2. American Wood Council. 2021. Span Tables for Joists and Rafters. 222 Catoctin Circle SE, Leesburg, VA, 20175.

3. U.S Department of Commerce. 2020. Voluntary Products Standard PS 20-20 American Softwood Lumber Standard. 1401 Constitution Ave NW Washington, DC 20230

# Floor Joist Tables

Notes on the use of these tables:

- Spans are joists over a single span and are for use in covered structures.
- Spans apply to lumber surfaced “GREEN” or surfaced “DRY” which conforms to *Voluntary Products Standard PS 20-20* (3) sizes.
- Applicable design criteria are shown in the heading for each table.
- Spans are tabulated to 26 feet. Check sources for availability of lumber in lengths greater than 20 feet.

| Joist Spacing (inches) | Species and Grade | | Residential sleeping areas, live load = 30 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce Austria & The Czech Republic | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 8 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 8 |
| | | No. 1 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 2 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | Douglas Fir France & Germany | SS | 7 - 11 | 12 - 6 | 16 - 6 | 21 - 0 | 25 - 7 | 7 - 11 | 12 - 6 | 16 - 6 | 21 - 0 | 25 - 7 |
| | | No. 1 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 4 | 7 - 8 | 12 - 0 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 3 | 22 - 4 | 7 - 4 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 3 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 22 - 8 | 7 - 2 | 11 - 3 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 2 | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 6 | 22 - 0 | 7 - 0 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Norway Spruce - Finland | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 22 - 8 | 7 - 2 | 11 - 3 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 2 | 6 - 10 | 10 - 9 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 22 - 4 | 7 - 2 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 2 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 0 | 6 - 10 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |
| | Norway Spruce - Norway | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 |
| | | No. 1 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 0 | 22 - 0 |
| | | No. 2 | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 6 | 22 - 0 | 7 - 0 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 3 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 22 - 8 | 7 - 2 | 11 - 3 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 2 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 4 | 6 - 10 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |
| | Norway Spruce - Sweden | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 22 - 4 | 7 - 2 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 2 | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 5 | 20 - 3 | 6 - 10 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 |
| | | No. 3 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 8 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 8 |
| | | No. 1 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 23 - 4 | 7 - 6 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 2 | 7 - 2 | 11 - 3 | 14 - 11 | 18 - 8 | 21 - 8 | 7 - 2 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 22 - 0 | 7 - 2 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 2 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 4 | 6 - 10 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |
| | Scots Pine - Finland | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 23 - 1 | 7 - 2 | 11 - 3 | 14 - 11 | 18 - 6 | 21 - 6 |
| | | No. 2 | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 6 | 22 - 6 | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 3 | 21 - 2 |
| | | No. 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | Scots Pine - Germany | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 10 | 24 - 2 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 11 | 19 - 0 | 22 - 0 | 7 - 2 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 2 | 6 - 8 | 10 - 5 | 13 - 9 | 17 - 6 | 20 - 7 | 6 - 8 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 |
| | | No. 3 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | Scots Pine - Sweden | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 8 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 3 | 24 - 8 |
| | | No. 1 | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 3 | 22 - 4 | 7 - 4 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 2 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 7 | 7 - 4 | 11 - 7 | 15 - 2 | 18 - 6 | 21 - 6 |
| | | No. 1 | 7 - 2 | 11 - 3 | 14 - 10 | 18 - 1 | 21 - 0 | 7 - 2 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 |
| | | No. 2 | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 1 | 21 - 0 | 7 - 0 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |

| Joist Spacing (inches) | Species and Grade | | Residential sleeping areas, live load = 30 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 |
| | | No. 1 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 4 | 6 - 10 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | | No. 2 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20 - 6 | 6 - 8 | 10 - 3 | 12 - 11 | 15 - 10 | 18 - 4 |
| | | No. 3 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 5 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 |
| | Douglas Fir - France & Germany | SS | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 |
| | | No. 1 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 2 | 21 - 1 | 7 - 0 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 2 | 6 - 8 | 10 - 6 | 13 - 8 | 16 - 8 | 19 - 4 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 8 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 2 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20 - 11 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 11 | 19 - 8 | 6 - 6 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 5 | 19 - 1 | 6 - 4 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 | 4 - 11 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 10 |
| | Norway Spruce - Finland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 11 | 19 - 8 | 6 - 6 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 2 | 6 - 2 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 3 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20 - 11 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 8 | 19 - 4 | 6 - 6 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 3 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Norway Spruce - Norway | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 |
| | | No. 1 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 4 | 6 - 8 | 10 - 6 | 13 - 6 | 16 - 5 | 19 - 1 |
| | | No. 2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 5 | 19 - 1 | 6 - 4 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 8 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 2 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 4 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 11 | 19 - 8 | 6 - 6 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 10 | 15 - 11 | 18 - 6 | 6 - 2 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 3 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Norway Spruce - Sweden | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 4 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 8 | 19 - 4 | 6 - 6 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 3 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 21 - 9 |
| | | No. 1 | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 5 | 20 - 3 | 6 - 10 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 |
| | | No. 2 | 6 - 6 | 10 - 3 | 13 - 3 | 16 - 2 | 18 - 9 | 6 - 5 | 9 - 4 | 11 - 10 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 | 4 - 11 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 10 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20 - 5 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 5 | 19 - 1 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 10 | 15 - 11 | 18 - 6 | 6 - 2 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 3 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | Scots Pine - Finland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 9 | 6 - 6 | 10 - 3 | 13 - 2 | 16 - 0 | 18 - 7 |
| | | No. 2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 10 | 20 - 6 | 6 - 4 | 10 - 0 | 12 - 11 | 15 - 10 | 18 - 4 |
| | | No. 3 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 5 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 |
| | Scots Pine - Germany | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20 - 11 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 5 | 19 - 1 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 2 | 6 - 0 | 9 - 6 | 12 - 6 | 15 - 5 | 17 - 10 | 6 - 0 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 3 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | Scots Pine - Sweden | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 2 |
| | | No. 1 | 6 - 8 | 10 - 6 | 13 - 8 | 16 - 8 | 19 - 4 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 10 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20 - 9 | 6 - 8 | 10 - 4 | 13 - 2 | 16 - 0 | 18 - 7 |
| | | No. 1 | 6 - 6 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 6 - 4 | 10 - 0 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 3 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |

| Joist Spacing (inches) | Species and Grade | | Residential sleeping areas, live load = 30 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 19.23333 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 |
| | | No. 1 | 6 - 5 | 10 - 1 | 13 - 4 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 2 | 18 - 9 | 6 - 3 | 9 - 4 | 11 - 10 | 14 - 5 | 16 - 9 |
| | | No. 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 |
| | Douglas Fir - France & Germany | SS | 6 - 10 | 10 - 8 | 14 - 1 | 18 - 0 | 21 - 10 | 6 - 10 | 10 - 8 | 14 - 1 | 18 - 0 | 21 - 4 |
| | | No. 1 | 6 - 7 | 10 - 4 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 2 |
| | | No. 2 | 6 - 3 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 3 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 20 - 8 | 6 - 5 | 10 - 1 | 13 - 4 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 8 | 15 - 6 | 17 - 11 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 2 | 6 - 0 | 9 - 5 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 3 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Norway Spruce - Finland | SS | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20 - 2 | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20 - 2 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 8 | 15 - 6 | 17 - 11 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 3 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 20 - 8 | 6 - 5 | 10 - 1 | 13 - 4 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 6 | 15 - 3 | 17 - 8 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 5 - 10 | 9 - 2 | 11 - 8 | 14 - 4 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | | No. 3 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | Norway Spruce - Norway | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | | No. 1 | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 19 - 6 | 6 - 3 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 6 - 0 | 9 - 5 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 3 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20 - 2 | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 19 - 6 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 8 | 15 - 6 | 17 - 11 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 2 | 5 - 10 | 9 - 2 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 3 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | Norway Spruce - Sweden | SS | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 20 - 8 | 6 - 5 | 10 - 1 | 13 - 4 | 16 - 9 | 19 - 6 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 6 | 15 - 3 | 17 - 8 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 5 - 10 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 0 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 1 | 19 - 10 |
| | | No. 1 | 6 - 5 | 10 - 1 | 13 - 0 | 15 - 11 | 18 - 6 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 2 | 6 - 2 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 |
| | | No. 3 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20 - 2 | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 10 | 9 - 2 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 3 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | Scots Pine - Finland | SS | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 20 - 2 | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 7 | 19 - 10 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 9 | 16 - 3 | 19 - 0 | 6 - 2 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 18 - 9 | 6 - 0 | 9 - 4 | 11 - 10 | 14 - 5 | 16 - 9 |
| | | No. 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 |
| | Scots Pine - Germany | SS | 6 - 5 | 10 - 1 | 13 - 4 | 17 - 0 | 20 - 8 | 6 - 5 | 10 - 1 | 13 - 4 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 8 | 8 - 11 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |
| | Scots Pine - Sweden | SS | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 20 - 3 |
| | | No. 1 | 6 - 3 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 3 | 9 - 10 | 13 - 0 | 16 - 4 | 19 - 0 | 6 - 3 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 1 | 6 - 2 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | | No. 2 | 6 - 0 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | | No. 3 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |

| Joist Spacing (inches) | Species and Grade | | Residential sleeping areas, live load = 30 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 19 - 7 | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 19 - 1 |
| | | No. 1 | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 10 | 9 - 2 | 11 - 10 | 14 - 5 | 16 - 9 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 | 4 - 4 | 6 - 3 | 8 - 0 | 9 - 9 | 11 - 3 |
| | Douglas Fir - France & Germany | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 8 | 20 - 3 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 1 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 5 - 10 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 |
| | | No. 3 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 9 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 1 | 6 - 0 | 9 - 4 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 1 | 5 - 8 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |
| | | No. 2 | 5 - 7 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 3 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 0 | 10 - 5 |
| | Norway Spruce - Finland | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 1 |
| | | No. 1 | 5 - 8 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |
| | | No. 2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 1 | 6 - 0 | 9 - 4 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 1 | 5 - 8 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 |
| | | No. 2 | 5 - 5 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 | 5 - 1 | 7 - 5 | 9 - 4 | 11 - 5 | 13 - 3 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 |
| | Norway Spruce - Norway | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 5 |
| | | No. 1 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 0 | 17 - 5 | 5 - 10 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 7 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 3 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 9 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 8 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 |
| | | No. 2 | 5 - 5 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 |
| | Norway Spruce - Sweden | SS | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 8 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 |
| | | No. 2 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 | 4 - 11 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 10 |
| | | No. 3 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 19 - 7 | 6 - 1 | 9 - 7 | 12 - 6 | 15 - 4 | 17 - 9 |
| | | No. 1 | 6 - 0 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | | No. 2 | 5 - 8 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | | No. 3 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 0 | 10 - 5 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 8 | 5 - 10 | 9 - 2 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 1 | 5 - 8 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 5 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 |
| | Scots Pine - Finland | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 4 | 17 - 9 |
| | | No. 1 | 5 - 8 | 8 - 11 | 11 - 10 | 14 - 8 | 17 - 0 | 5 - 8 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 2 | 5 - 7 | 8 - 9 | 11 - 6 | 14 - 5 | 16 - 9 | 5 - 7 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 | 4 - 4 | 6 - 3 | 8 - 0 | 9 - 9 | 11 - 3 |
| | Scots Pine - Germany | SS | 6 - 0 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 1 | 6 - 0 | 9 - 4 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 1 | 5 - 8 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 3 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | | No. 3 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | Scots Pine - Sweden | SS | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 19 - 7 | 6 - 1 | 9 - 7 | 12 - 7 | 15 - 7 | 18 - 1 |
| | | No. 1 | 5 - 10 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 5 | 4 - 11 | 6 - 3 | 7 - 8 | 8 - 11 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 10 | 9 - 2 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 1 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 | 5 - 1 | 7 - 5 | 9 - 4 | 11 - 5 | 13 - 3 |
| | | No. 2 | 5 - 7 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 | 5 - 1 | 7 - 5 | 9 - 4 | 11 - 5 | 13 - 3 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 |

| Joist Spacing (inches) | Species and Grade | | Residential living areas= 40 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 |
| | | No. 1 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 2 | 6 - 8 | 10 - 6 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Douglas Fir - France & Germany | SS | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 23 - 3 |
| | | No. 1 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 21 - 9 | 7 - 0 | 10 - 11 | 14 - 0 | 17 - 1 | 19 - 10 |
| | | No. 2 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 3 | 20 - 0 | 6 - 8 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 3 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 4 | 6 - 6 | 10 - 3 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 10 | 19 - 8 | 6 - 4 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | Norway Spruce - Finland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 4 | 6 - 6 | 10 - 3 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 |
| | | No. 3 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 0 | 6 - 6 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 2 | 18 - 9 | 6 - 2 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | Norway Spruce - Norway | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 |
| | | No. 1 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 4 | 20 - 1 |
| | | No. 2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 10 | 19 - 8 | 6 - 4 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 4 | 6 - 6 | 10 - 3 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 1 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | Norway Spruce - Sweden | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 20 - 0 | 6 - 6 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 3 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 |
| | | No. 1 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20 - 11 | 6 - 10 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | | No. 2 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 9 | 19 - 5 | 6 - 6 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 3 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 0 | 19 - 8 | 6 - 6 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 2 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 1 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | Scots Pine - Finland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 3 | 21 - 0 | 6 - 6 | 10 - 3 | 13 - 6 | 16 - 11 | 19 - 7 |
| | | No. 2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 10 | 20 - 6 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 8 | 19 - 4 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Scots Pine - Germany | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 21 - 11 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 6 | 17 - 0 | 19 - 8 | 6 - 6 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 2 | 6 - 0 | 9 - 6 | 12 - 6 | 15 - 11 | 18 - 5 | 6 - 0 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Scots Pine - Sweden | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 |
| | | No. 1 | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 3 | 20 - 0 | 6 - 8 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 2 | 6 - 2 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 10 | 16 - 11 | 19 - 7 |
| | | No. 1 | 6 - 6 | 10 - 3 | 13 - 3 | 16 - 2 | 18 - 9 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 2 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 2 | 18 - 9 | 6 - 4 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |

| Joist Spacing (inches) | Species and Grade | | Residential living areas= 40 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20 - 4 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20 - 4 |
| | | No. 1 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 1 | 6 - 2 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 6 - 1 | 9 - 6 | 12 - 7 | 15 - 10 | 18 - 4 | 6 - 1 | 9 - 4 | 11 - 10 | 14 - 5 | 16 - 9 |
| | | No. 3 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 |
| | Douglas Fir - France & Germany | SS | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 21 - 1 |
| | | No. 1 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 3 | 18 - 10 | 6 - 4 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 2 |
| | | No. 2 | 6 - 1 | 9 - 6 | 12 - 3 | 14 - 11 | 17 - 4 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 2 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 1 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 3 | 15 - 2 | 17 - 7 | 5 - 11 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 2 | 5 - 9 | 9 - 1 | 12 - 0 | 14 - 9 | 17 - 1 | 5 - 9 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 10 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Norway Spruce - Finland | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 3 | 15 - 2 | 17 - 7 | 5 - 11 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 2 | 5 - 8 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 3 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 1 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 11 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 5 - 8 | 8 - 10 | 11 - 6 | 14 - 0 | 16 - 3 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | | No. 3 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | Norway Spruce - Norway | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 |
| | | No. 1 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 1 | 6 - 1 | 9 - 6 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 5 - 9 | 9 - 1 | 12 - 0 | 14 - 9 | 17 - 1 | 5 - 9 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 2 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 3 | 15 - 2 | 17 - 7 | 5 - 11 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 2 | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 8 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 3 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | Norway Spruce - Sweden | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 6 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 11 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 5 - 8 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 | 5 - 5 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20 - 4 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 19 - 10 |
| | | No. 1 | 6 - 2 | 9 - 9 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 2 | 5 - 11 | 9 - 4 | 11 - 10 | 14 - 6 | 16 - 10 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 10 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 18 - 8 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 1 | 14 - 9 | 17 - 1 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 8 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 3 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | Scots Pine - Finland | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 3 | 15 - 8 | 18 - 7 | 5 - 11 | 9 - 4 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 5 - 9 | 9 - 1 | 12 - 0 | 15 - 3 | 18 - 4 | 5 - 9 | 9 - 1 | 11 - 10 | 14 - 5 | 16 - 9 |
| | | No. 3 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 |
| | Scots Pine - Germany | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 11 | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 1 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 1 | 14 - 9 | 17 - 1 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 6 | 8 - 7 | 11 - 3 | 13 - 9 | 16 - 0 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 3 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |
| | Scots Pine - Sweden | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20 - 4 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20 - 3 |
| | | No. 1 | 6 - 1 | 9 - 6 | 12 - 3 | 14 - 11 | 17 - 4 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 10 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 18 - 7 | 6 - 1 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 1 | 5 - 11 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | | No. 2 | 5 - 9 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | | No. 3 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |

| Joist Spacing (inches) | Species and Grade | | Residential living areas= 40 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 5 - 11 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 | 5 - 11 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 |
| | | No. 1 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 0 | 17 - 5 | 5 - 10 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 |
| | | No. 2 | 5 - 9 | 9 - 0 | 11 - 10 | 14 - 5 | 16 - 9 | 5 - 9 | 8 - 6 | 10 - 10 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 | 4 - 5 | 6 - 5 | 8 - 2 | 9 - 11 | 11 - 6 |
| | Douglas Fir - France & Germany | SS | 6 - 2 | 9 - 8 | 12 - 10 | 16 - 4 | 19 - 10 | 6 - 2 | 9 - 8 | 12 - 10 | 16 - 4 | 19 - 6 |
| | | No. 1 | 5 - 11 | 9 - 4 | 12 - 2 | 14 - 10 | 17 - 2 | 5 - 11 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 2 | 5 - 9 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 6 | 8 - 1 | 10 - 2 | 12 - 5 | 14 - 5 |
| | | No. 3 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 7 | 8 - 9 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | | No. 2 | 5 - 5 | 8 - 7 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 3 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 |
| | Norway Spruce - Finland | SS | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 1 | 18 - 4 | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 1 | 18 - 4 |
| | | No. 1 | 5 - 7 | 8 - 9 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | | No. 2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 9 | 5 - 5 | 6 - 10 | 8 - 5 | 9 - 9 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 7 | 8 - 9 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 6 | 8 - 1 | 10 - 2 | 12 - 5 | 14 - 5 |
| | | No. 2 | 5 - 4 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 11 | 5 - 9 | 7 - 4 | 8 - 11 | 10 - 4 |
| | Norway Spruce - Norway | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 |
| | | No. 1 | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 0 | 17 - 5 | 5 - 9 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 |
| | | No. 2 | 5 - 5 | 8 - 7 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 3 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 1 | 18 - 4 | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 1 | 17 - 9 |
| | | No. 1 | 5 - 7 | 8 - 9 | 11 - 4 | 13 - 10 | 16 - 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | | No. 2 | 5 - 4 | 8 - 4 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 11 | 5 - 9 | 7 - 4 | 8 - 11 | 10 - 4 |
| | Norway Spruce - Sweden | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 4 | 17 - 9 |
| | | No. 1 | 5 - 7 | 8 - 9 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 6 | 8 - 1 | 10 - 2 | 12 - 5 | 14 - 5 |
| | | No. 2 | 5 - 4 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 |
| | | No. 3 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 5 - 11 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 | 5 - 11 | 9 - 4 | 12 - 4 | 15 - 8 | 18 - 1 |
| | | No. 1 | 5 - 10 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 2 | 5 - 7 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 |
| | | No. 3 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 1 | 18 - 4 | 5 - 9 | 9 - 0 | 11 - 10 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 7 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 2 | 5 - 4 | 8 - 4 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 11 | 5 - 9 | 7 - 4 | 8 - 11 | 10 - 4 |
| | Scots Pine - Finland | SS | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 1 | 18 - 4 | 5 - 9 | 9 - 0 | 11 - 10 | 15 - 1 | 18 - 1 |
| | | No. 1 | 5 - 7 | 8 - 9 | 11 - 7 | 14 - 8 | 17 - 0 | 5 - 7 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 2 | 5 - 5 | 8 - 7 | 11 - 3 | 14 - 5 | 16 - 9 | 5 - 5 | 8 - 6 | 10 - 10 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 7 | 4 - 5 | 6 - 5 | 8 - 2 | 9 - 11 | 11 - 6 |
| | Scots Pine - Germany | SS | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 5 | 18 - 9 | 5 - 10 | 9 - 2 | 12 - 1 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 7 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 2 | 5 - 2 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | | No. 3 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Scots Pine - Sweden | SS | 5 - 11 | 9 - 4 | 12 - 4 | 15 - 9 | 19 - 2 | 5 - 11 | 9 - 4 | 12 - 4 | 15 - 9 | 18 - 6 |
| | | No. 1 | 5 - 9 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 6 | 8 - 1 | 10 - 2 | 12 - 5 | 14 - 5 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 9 | 9 - 0 | 11 - 10 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 7 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | | No. 2 | 5 - 5 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 | 3 - 11 | 5 - 9 | 7 - 4 | 8 - 11 | 10 - 4 |

| Joist Spacing (inches) | Species and Grade | | Residential living areas= 40 psf, L/Δ = 360 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Floor Joist Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 7 | 17 - 9 | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 7 | 17 - 5 |
| | | No. 1 | 5 - 5 | 8 - 6 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 2 | 5 - 4 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 | 5 - 3 | 7 - 7 | 9 - 8 | 11 - 10 | 13 - 8 |
| | | No. 3 | 4 - 4 | 6 - 3 | 8 - 0 | 9 - 9 | 11 - 3 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 11 | 10 - 4 |
| | Douglas Fir - France & Germany | SS | 5 - 9 | 9 - 0 | 11 - 11 | 15 - 2 | 18 - 5 | 5 - 9 | 9 - 0 | 11 - 11 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 6 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 |
| | | No. 2 | 5 - 4 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 2 | 12 - 11 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 9 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 5 | 9 - 10 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 1 | 5 - 5 | 8 - 6 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 1 | 5 - 2 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | | No. 2 | 5 - 1 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 0 | 10 - 5 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 6 |
| | Norway Spruce - Finland | SS | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 17 - 0 | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 16 - 6 |
| | | No. 1 | 5 - 2 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | | No. 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 6 | 3 - 4 | 4 - 10 | 6 - 2 | 7 - 6 | 8 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 1 | 5 - 5 | 8 - 6 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 1 | 5 - 2 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 2 | 12 - 11 |
| | | No. 2 | 4 - 11 | 7 - 5 | 9 - 4 | 11 - 5 | 13 - 3 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 6 | 5 - 2 | 6 - 7 | 8 - 0 | 9 - 3 |
| | Norway Spruce - Norway | SS | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 18 - 1 | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 17 - 8 |
| | | No. 1 | 5 - 4 | 8 - 4 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 4 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 2 | 5 - 1 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 9 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 5 | 9 - 10 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 17 - 0 | 5 - 4 | 8 - 4 | 11 - 0 | 13 - 8 | 15 - 11 |
| | | No. 1 | 5 - 2 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 4 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | | No. 2 | 4 - 11 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | | No. 3 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 6 | 5 - 2 | 6 - 7 | 8 - 0 | 9 - 3 |
| | Norway Spruce - Sweden | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 5 | 5 - 5 | 8 - 6 | 11 - 3 | 13 - 8 | 15 - 11 |
| | | No. 1 | 5 - 2 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 2 | 12 - 11 |
| | | No. 2 | 4 - 11 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 10 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | | No. 3 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 7 | 17 - 9 | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 0 | 16 - 3 |
| | | No. 1 | 5 - 5 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | | No. 2 | 5 - 2 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 0 | 10 - 5 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 16 - 8 | 5 - 4 | 8 - 4 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 2 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | | No. 2 | 4 - 11 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | | No. 3 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 6 | 5 - 2 | 6 - 7 | 8 - 0 | 9 - 3 |
| | Scots Pine - Finland | SS | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 17 - 0 | 5 - 4 | 8 - 4 | 11 - 0 | 14 - 0 | 16 - 3 |
| | | No. 1 | 5 - 2 | 8 - 2 | 10 - 9 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 2 | 5 - 1 | 7 - 11 | 10 - 6 | 12 - 11 | 15 - 0 | 5 - 1 | 7 - 7 | 9 - 8 | 11 - 10 | 13 - 8 |
| | | No. 3 | 4 - 4 | 6 - 3 | 8 - 0 | 9 - 9 | 11 - 3 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 11 | 10 - 4 |
| | Scots Pine - Germany | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 1 | 5 - 5 | 8 - 6 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 1 | 5 - 2 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | | No. 2 | 4 - 9 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 | 4 - 6 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 |
| | | No. 3 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Scots Pine - Sweden | SS | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 7 | 17 - 9 | 5 - 6 | 8 - 8 | 11 - 5 | 14 - 3 | 16 - 6 |
| | | No. 1 | 5 - 4 | 7 - 11 | 10 - 0 | 12 - 2 | 14 - 2 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 2 | 12 - 11 |
| | | No. 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | | No. 3 | 3 - 5 | 4 - 11 | 6 - 3 | 7 - 8 | 8 - 11 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 4 | 8 - 4 | 10 - 9 | 13 - 1 | 15 - 2 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 1 | 5 - 1 | 7 - 5 | 9 - 4 | 11 - 5 | 13 - 3 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | | No. 2 | 5 - 1 | 7 - 5 | 9 - 4 | 11 - 5 | 13 - 3 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 10 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 6 | 5 - 2 | 6 - 7 | 8 - 0 | 9 - 3 |

# Ceiling Joist Tables

Notes on the use of these tables:

- Spans are for ceiling joists over a single span and are for use in covered structures.
- Spans apply to lumber surfaced “GREEN” or surfaced “DRY” which conforms to *Voluntary Products Standard PS 20-20* (3) sizes.
- Applicable design criteria are shown in the heading for each table.
- Spans are tabulated to 26 feet. Check sources for availability of lumber in lengths greater than 20 feet.

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics without storage, live load = 10 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 5 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 12 - 8 | 19 - 11 | 26 - 0* | 26 - 0* | 26 - 0* |
| | | No. 1 | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0* | 26 - 0* |
| | | No. 2 | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 3 | 11 - 1 | 16 - 3 | 20 - 7 | 25 - 2 | 26 - 0* |
| | Douglas Fir - France & Germany | SS | 13 - 2 | 20 - 8 | 26 - 0* | 26 - 0* | 26 - 0* |
| | | No. 1 | 12 - 8 | 19 - 11 | 26 - 0* | 26 - 0* | 26 - 0* |
| | | No. 2 | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 7 | 15 - 5 | 19 - 7 | 23 - 11 | 26 - 0* |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 7 | 18 - 2 | 24 - 0 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 3 | 15 - 0 | 19 - 1 | 23 - 3 | 26 - 0* |
| | Norway Spruce - Finland | SS | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 3 | 17 - 8 | 22 - 5 | 26 - 0* | 26 - 0* |
| | | No. 3 | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 0 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | Norway Spruce - Norway | SS | 12 - 11 | 20 - 3 | 26 - 0* | 26 - 0* | 26 - 0* |
| | | No. 1 | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 7 | 18 - 2 | 24 - 0 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 7 | 15 - 5 | 19 - 7 | 23 - 11 | 26 - 0* |
| | Norway Spruce - Romania & Ukraine | SS | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 0 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | Norway Spruce - Sweden | SS | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 3 | 9 - 8 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 12 - 8 | 19 - 11 | 26 - 0* | 26 - 0* | 26 - 0* |
| | | No. 1 | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 3 | 15 - 0 | 19 - 1 | 23 - 3 | 26 - 0* |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 0 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | Scots Pine - Finland | SS | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 7 | 18 - 2 | 24 - 0 | 26 - 0* | 26 - 0* |
| | | No. 3 | 11 - 1 | 16 - 3 | 20 - 7 | 25 - 2 | 26 - 0* |
| | Scots Pine - Germany | SS | 12 - 5 | 19 - 6 | 25 - 8 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 7 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 11 | 17 - 2 | 22 - 8 | 26 - 0* | 26 - 0* |
| | | No. 3 | 9 - 8 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | Scots Pine - Sweden | SS | 12 - 8 | 19 - 11 | 26 - 0* | 26 - 0* | 26 - 0* |
| | | No. 1 | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 3 | 17 - 0 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 3 | 8 - 9 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 11 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 12 - 2 | 19 - 1 | 25 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 10 | 18 - 8 | 24 - 2 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 7 | 18 - 2 | 24 - 0 | 26 - 0* | 26 - 0* |
| | | No. 3 | 10 - 0 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics without storage, live load = 10 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 5 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 11 - 6 | 18 - 1 | 23 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 3 | 9 - 7 | 14 - 1 | 17 - 10 | 21 - 9 | 25 - 3 |
| | Douglas Fir - France & Germany | SS | 11 - 11 | 18 - 9 | 24 - 8 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 6 | 18 - 1 | 23 - 10 | 26 - 0* | 26 - 0* |
| | | No. 2 | 11 - 0 | 17 - 4 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 3 | 9 - 2 | 13 - 5 | 16 - 11 | 20 - 8 | 24 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 6 | 16 - 6 | 21 - 9 | 26 - 0* | 26 - 0* |
| | | No. 3 | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 2 | 23 - 4 |
| | Norway Spruce - Finland | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 3 | 15 - 4 | 19 - 5 | 23 - 9 | 26 - 0* |
| | | No. 3 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 3 | 16 - 1 | 20 - 11 | 25 - 7 | 26 - 0* |
| | | No. 3 | 8 - 8 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 8 |
| | Norway Spruce - Norway | SS | 11 - 9 | 18 - 5 | 24 - 3 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 6 | 16 - 6 | 21 - 9 | 26 - 0* | 26 - 0* |
| | | No. 3 | 9 - 2 | 13 - 5 | 16 - 11 | 20 - 8 | 24 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0* | 26 - 0* |
| | | No. 3 | 8 - 8 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 8 |
| | Norway Spruce - Sweden | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 3 | 15 - 11 | 20 - 2 | 24 - 8 | 26 - 0* |
| | | No. 3 | 8 - 5 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 11 - 6 | 18 - 1 | 23 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 9 | 16 - 11 | 21 - 8 | 26 - 0* | 26 - 0* |
| | | No. 3 | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 2 | 23 - 4 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 0 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0* | 26 - 0* |
| | | No. 3 | 8 - 8 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 8 |
| | Scots Pine - Finland | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 6 | 16 - 6 | 21 - 9 | 26 - 0* | 26 - 0* |
| | | No. 3 | 9 - 7 | 14 - 1 | 17 - 10 | 21 - 9 | 25 - 3 |
| | Scots Pine - Germany | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 11 | 22 - 0 | 26 - 0* | 26 - 0* |
| | | No. 2 | 9 - 11 | 15 - 7 | 20 - 7 | 25 - 2 | 26 - 0* |
| | | No. 3 | 8 - 5 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | Scots Pine - Sweden | SS | 11 - 6 | 18 - 1 | 23 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 0 | 17 - 4 | 22 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 1 | 14 - 9 | 18 - 8 | 22 - 9 | 26 - 0* |
| | | No. 3 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 1 | 19 - 10 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 9 | 16 - 6 | 20 - 11 | 25 - 7 | 26 - 0* |
| | | No. 2 | 10 - 6 | 16 - 6 | 20 - 11 | 25 - 7 | 26 - 0* |
| | | No. 3 | 8 - 8 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 8 |

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics without storage, live load = 10 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 5 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | Douglas Fir - France & Germany | SS | 11 - 3 | 17 - 8 | 23 - 3 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 10 | 17 - 0 | 22 - 2 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 4 | 16 - 1 | 20 - 5 | 24 - 11 | 26 - 0* |
| | | No. 3 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 11 | 20 - 8 | 25 - 3 | 26 - 0* |
| | | No. 2 | 9 - 11 | 15 - 7 | 20 - 1 | 24 - 6 | 26 - 0* |
| | | No. 3 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | Norway Spruce - Finland | SS | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 11 | 20 - 8 | 25 - 3 | 26 - 0* |
| | | No. 2 | 9 - 7 | 14 - 0 | 17 - 9 | 21 - 8 | 25 - 2 |
| | | No. 3 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 11 | 20 - 5 | 24 - 11 | 26 - 0* |
| | | No. 2 | 9 - 8 | 15 - 1 | 19 - 1 | 23 - 4 | 26 - 0* |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 |
| | Norway Spruce - Norway | SS | 11 - 0 | 17 - 4 | 22 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 2 | 9 - 11 | 15 - 7 | 20 - 1 | 24 - 6 | 26 - 0* |
| | | No. 3 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 |
| | Norway Spruce - Romania & Ukraine | SS | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 11 | 20 - 8 | 25 - 3 | 26 - 0* |
| | | No. 2 | 9 - 8 | 15 - 2 | 19 - 5 | 23 - 9 | 26 - 0* |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 |
| | Norway Spruce - Sweden | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 11 | 20 - 5 | 24 - 11 | 26 - 0* |
| | | No. 2 | 9 - 8 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 7 | 16 - 8 | 21 - 4 | 26 - 0* | 26 - 0* |
| | | No. 2 | 10 - 2 | 15 - 7 | 19 - 9 | 24 - 2 | 26 - 0* |
| | | No. 3 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 10 | 20 - 1 | 24 - 6 | 26 - 0* |
| | | No. 2 | 9 - 8 | 15 - 2 | 19 - 5 | 23 - 9 | 26 - 0* |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 |
| | Scots Pine - Finland | SS | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 11 | 21 - 0 | 26 - 0* | 26 - 0* |
| | | No. 2 | 9 - 11 | 15 - 7 | 20 - 6 | 26 - 0* | 26 - 0* |
| | | No. 3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | Scots Pine - Germany | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 10 | 20 - 1 | 24 - 6 | 26 - 0* |
| | | No. 2 | 9 - 4 | 14 - 8 | 18 - 9 | 22 - 11 | 26 - 0* |
| | | No. 3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | Scots Pine - Sweden | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 1 | 20 - 5 | 24 - 11 | 26 - 0* |
| | | No. 2 | 9 - 2 | 13 - 5 | 17 - 0 | 20 - 9 | 24 - 1 |
| | | No. 3 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 10 - 4 | 16 - 4 | 21 - 6 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 2 | 15 - 1 | 19 - 1 | 23 - 4 | 26 - 0* |
| | | No. 2 | 9 - 11 | 15 - 1 | 19 - 1 | 23 - 4 | 26 - 0* |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 |

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics without storage, live load = 10 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 5 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 10 | 15 - 6 | 20 - 1 | 24 - 6 | 26 - 0* |
| | | No. 2 | 9 - 8 | 15 - 2 | 19 - 4 | 23 - 7 | 26 - 0* |
| | | No. 3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 | 20 - 7 |
| | Douglas Fir - France & Germany | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 0 | 15 - 8 | 19 - 10 | 24 - 3 | 26 - 0* |
| | | No. 2 | 9 - 8 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 3 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | Norway Spruce - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | | No. 2 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 |
| | | No. 3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 2 | 8 - 11 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | Norway Spruce - Norway | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 8 | 15 - 2 | 19 - 11 | 24 - 6 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 3 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | Norway Spruce - Romania & Ukraine | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | | No. 2 | 8 - 11 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | Norway Spruce - Sweden | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 2 | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 2 | 23 - 4 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 10 | 15 - 0 | 19 - 1 | 23 - 3 | 26 - 0* |
| | | No. 2 | 9 - 5 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 8 - 11 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | Scots Pine - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 23 - 11 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 5 | 19 - 0 | 23 - 7 | 26 - 0* |
| | | No. 3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 | 20 - 7 |
| | Scots Pine - Germany | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 8 - 8 | 13 - 3 | 16 - 10 | 20 - 6 | 23 - 9 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | Scots Pine - Sweden | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 8 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 2 | 8 - 3 | 12 - 0 | 15 - 3 | 18 - 7 | 21 - 7 |
| | | No. 3 | 6 - 2 | 9 - 0 | 11 - 5 | 14 - 0 | 16 - 3 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 9 - 8 | 15 - 2 | 19 - 7 | 23 - 11 | 26 - 0* |
| | | No. 1 | 9 - 3 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 2 | 9 - 2 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics with limited storage, live load = 20 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 10 | 15 - 6 | 20 - 1 | 24 - 6 | 26 - 0* |
| | | No. 2 | 9 - 8 | 15 - 2 | 19 - 4 | 23 - 7 | 26 - 0* |
| | | No. 3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 | 20 - 7 |
| | Douglas Fir - France & Germany | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 0 | 15 - 8 | 19 - 10 | 24 - 3 | 26 - 0* |
| | | No. 2 | 9 - 8 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 3 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | Norway Spruce - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | | No. 2 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 |
| | | No. 3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 2 | 8 - 11 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | Norway Spruce - Norway | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 8 | 15 - 2 | 19 - 11 | 24 - 6 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 3 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | Norway Spruce - Romania & Ukraine | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 7 | 18 - 6 | 22 - 7 | 26 - 0* |
| | | No. 2 | 8 - 11 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | Norway Spruce - Sweden | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 2 | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 2 | 23 - 4 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 10 | 15 - 0 | 19 - 1 | 23 - 3 | 26 - 0* |
| | | No. 2 | 9 - 5 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 8 - 11 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | Scots Pine - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 23 - 11 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 5 | 19 - 0 | 23 - 7 | 26 - 0* |
| | | No. 3 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 | 20 - 7 |
| | Scots Pine - Germany | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 8 - 8 | 13 - 3 | 16 - 10 | 20 - 6 | 23 - 9 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | Scots Pine - Sweden | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 8 | 14 - 5 | 18 - 3 | 22 - 3 | 25 - 10 |
| | | No. 2 | 8 - 3 | 12 - 0 | 15 - 3 | 18 - 7 | 21 - 7 |
| | | No. 3 | 6 - 2 | 9 - 0 | 11 - 5 | 14 - 0 | 16 - 3 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 9 - 8 | 15 - 2 | 19 - 7 | 23 - 11 | 26 - 0* |
| | | No. 1 | 9 - 3 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 2 | 9 - 2 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 3 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics with limited storage, live load = 20 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 9 - 1 | 14 - 4 | 18 - 11 | 24 - 1 | 26 - 0* |
| | | No. 1 | 8 - 11 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 2 | 8 - 9 | 13 - 2 | 16 - 9 | 20 - 5 | 23 - 8 |
| | | No. 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | Douglas Fir - France & Germany | SS | 9 - 6 | 14 - 11 | 19 - 7 | 25 - 0 | 26 - 0* |
| | | No. 1 | 9 - 1 | 13 - 7 | 17 - 2 | 21 - 0 | 24 - 4 |
| | | No. 2 | 8 - 6 | 12 - 6 | 15 - 9 | 19 - 3 | 22 - 4 |
| | | No. 3 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 3 | 26 - 0* |
| | | No. 1 | 8 - 7 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 8 |
| | | No. 2 | 8 - 4 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | Norway Spruce - Finland | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* |
| | | No. 1 | 8 - 7 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 8 |
| | | No. 2 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 3 | 26 - 0* |
| | | No. 1 | 8 - 6 | 12 - 6 | 15 - 9 | 19 - 3 | 22 - 4 |
| | | No. 2 | 8 - 0 | 11 - 8 | 14 - 10 | 18 - 1 | 21 - 0 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | Norway Spruce - Norway | SS | 9 - 4 | 14 - 7 | 19 - 3 | 24 - 7 | 26 - 0* |
| | | No. 1 | 8 - 9 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 2 | 8 - 4 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 3 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* |
| | | No. 1 | 8 - 7 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 8 |
| | | No. 2 | 8 - 1 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | Norway Spruce - Sweden | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* |
| | | No. 1 | 8 - 6 | 12 - 6 | 15 - 9 | 19 - 3 | 22 - 4 |
| | | No. 2 | 7 - 9 | 11 - 3 | 14 - 3 | 17 - 5 | 20 - 3 |
| | | No. 3 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 9 - 1 | 14 - 4 | 18 - 11 | 24 - 1 | 26 - 0* |
| | | No. 1 | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 2 | 23 - 4 |
| | | No. 2 | 8 - 3 | 12 - 1 | 15 - 4 | 18 - 8 | 21 - 8 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 8 - 9 | 13 - 9 | 18 - 1 | 22 - 9 | 26 - 0* |
| | | No. 1 | 8 - 5 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 2 | 8 - 1 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | Scots Pine - Finland | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 16 - 11 | 20 - 8 | 24 - 0 |
| | | No. 2 | 8 - 4 | 13 - 1 | 16 - 9 | 20 - 5 | 23 - 8 |
| | | No. 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | Scots Pine - Germany | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 3 | 26 - 0* |
| | | No. 1 | 8 - 5 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 2 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 | 20 - 7 |
| | | No. 3 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Scots Pine - Sweden | SS | 9 - 1 | 14 - 4 | 18 - 11 | 24 - 1 | 26 - 0* |
| | | No. 1 | 8 - 6 | 12 - 6 | 15 - 9 | 19 - 3 | 22 - 4 |
| | | No. 2 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 8 - 9 | 13 - 5 | 16 - 11 | 20 - 8 | 24 - 0 |
| | | No. 1 | 8 - 0 | 11 - 8 | 14 - 10 | 18 - 1 | 21 - 0 |
| | | No. 2 | 8 - 0 | 11 - 8 | 14 - 10 | 18 - 1 | 21 - 0 |
| | | No. 3 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics with limited storage, live load = 20 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 8 | 26 - 0* |
| | | No. 1 | 8 - 5 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 |
| | | No. 2 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 7 |
| | | No. 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | Douglas Fir - France & Germany | SS | 8 - 11 | 14 - 0 | 18 - 5 | 23 - 7 | 26 - 0* |
| | | No. 1 | 8 - 5 | 12 - 4 | 15 - 8 | 19 - 2 | 22 - 2 |
| | | No. 2 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 |
| | | No. 3 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 |
| | | No. 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Norway Spruce - Finland | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 26 - 0* |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 |
| | | No. 2 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 |
| | | No. 3 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 1 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 |
| | | No. 2 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | Norway Spruce - Norway | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* |
| | | No. 1 | 8 - 3 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 |
| | | No. 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 3 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 |
| | Norway Spruce - Romania & Ukraine | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 8 | 25 - 2 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 |
| | | No. 2 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | Norway Spruce - Sweden | SS | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 8 | 25 - 2 |
| | | No. 1 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 |
| | | No. 2 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | | No. 3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 1 | 25 - 8 |
| | | No. 1 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 2 | 7 - 6 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 9 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 8 - 3 | 12 - 11 | 17 - 0 | 20 - 9 | 24 - 1 |
| | | No. 1 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | Scots Pine - Finland | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 25 - 8 |
| | | No. 1 | 8 - 1 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 |
| | | No. 2 | 7 - 10 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 7 |
| | | No. 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | Scots Pine - Germany | SS | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 1 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 3 | 18 - 10 |
| | | No. 3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | Scots Pine - Sweden | SS | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 6 | 26 - 0* |
| | | No. 1 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 |
| | | No. 2 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 8 - 3 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 |
| | | No. 1 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | | No. 2 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |

| Joist Spacing (inches) | Species and Grade | | Uninhabitable attics with limited storage, live load = 20 psf, L/Δ = 240 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Ceiling Joist Spans (ft - in) | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 24 - 8 |
| | | No. 1 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 7 - 4 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 3 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Douglas Fir - France & Germany | SS | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 3 | 24 - 8 |
| | | No. 1 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 1 | 19 - 10 |
| | | No. 2 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 3 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 10 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 1 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | Norway Spruce - Finland | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 23 - 4 |
| | | No. 1 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 |
| | | No. 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 10 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 1 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 2 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | Norway Spruce - Norway | SS | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 | 25 - 0 |
| | | No. 1 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 5 | 22 - 6 |
| | | No. 1 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | Norway Spruce - Sweden | SS | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 5 | 22 - 6 |
| | | No. 1 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 2 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 3 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 0 | 12 - 6 | 16 - 2 | 19 - 9 | 22 - 11 |
| | | No. 1 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 5 | 19 - 1 |
| | | No. 2 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 3 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 8 | 13 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 8 | 12 - 0 | 15 - 3 | 18 - 7 | 21 - 7 |
| | | No. 1 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 2 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | Scots Pine - Finland | SS | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 9 | 22 - 11 |
| | | No. 1 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | | No. 2 | 7 - 3 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 3 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | Scots Pine - Germany | SS | 7 - 10 | 12 - 3 | 15 - 7 | 19 - 0 | 22 - 0 |
| | | No. 1 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 2 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 3 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Scots Pine - Sweden | SS | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 2 | 23 - 4 |
| | | No. 1 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 |
| | | No. 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | | No. 1 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 2 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |

# Rafter Span Tables

Notes on the use of these tables:

- Spans are for rafters used in covered structures.
- Spans apply to lumber surfaced "GREEN" or surfaced "DRY" which conforms to *Voluntary Products Standard PS 20-20* (3) sizes.
- Applicable design criteria are shown in the heading for each table.
- Spans are tabulated to 26 feet. Check sources for availability of lumber in lengths greater than 20 feet.
- Rafter spans are measured along the horizontal projection.
- The tabulated rafter spans assume that ceiling joists are located at the bottom of the attic space or that some other method of resisting the outward push of the rafters on the bearing walls, such as rafter ties, is provided at that location. Where ceiling joists or rafter ties are located higher in the attic space, the rafter spans shall be multiplied by the following factors:

  $H_C/H_R$ Rafter Span Adjustment Factors

| $H_C/H_R$ | Rafter Span Adjustment Factor |
|---|---|
| 1/2 | 0.58 |
| 1/3 | 0.67 |
| 1/4 | 0.76 |
| 1/5 | 0.83 |
| 1/6 | 0.90 |
| 1/7.5 and less | 1.00 |

  Where:
  $H_C$ = Height of ceiling joists or rafter ties measured vertically above the top of the rafter support walls.
  $H_R$ = Height off roof ridge measured vertically above the top of the rafter support walls.

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 11 - 1 | 17 - 4 | 22 - 11 | 26 - 0* | 26 - 0* | 11 - 1 | 17 - 4 | 22 - 11 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* | 10 - 6 | 15 - 4 | 19 - 5 | 23 - 9 | 26 - 0* |
| | | No. 2 | 10 - 7 | 16 - 8 | 21 - 7 | 26 - 0* | 26 - 0* | 10 - 1 | 14 - 9 | 18 - 8 | 22 - 10 | 26 - 0* |
| | | No. 3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | Douglas Fir - France & Germany | SS | 11 - 6 | 18 - 0 | 23 - 9 | 26 - 0* | 26 - 0* | 11 - 6 | 18 - 0 | 23 - 9 | 26 - 0* | 26 - 0* |
| | | No. 1 | 11 - 1 | 17 - 4 | 22 - 2 | 26 - 0* | 26 - 0* | 10 - 4 | 15 - 2 | 19 - 2 | 23 - 5 | 26 - 0* |
| | | No. 2 | 10 - 7 | 16 - 1 | 20 - 5 | 24 - 11 | 26 - 0* | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 3 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* | 10 - 10 | 16 - 10 | 21 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 3 | 20 - 8 | 25 - 3 | 26 - 0* | 9 - 8 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 10 - 1 | 15 - 10 | 20 - 1 | 24 - 6 | 26 - 0* | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | Norway Spruce - Finland | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 3 | 20 - 8 | 25 - 3 | 26 - 0* | 9 - 8 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 9 - 7 | 14 - 0 | 17 - 9 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 3 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* | 10 - 10 | 16 - 10 | 21 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 1 | 20 - 5 | 24 - 11 | 26 - 0* | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 2 | 9 - 10 | 15 - 1 | 19 - 1 | 23 - 4 | 26 - 0* | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Norway Spruce - Norway | SS | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* | 11 - 3 | 17 - 8 | 23 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* | 10 - 6 | 15 - 4 | 19 - 5 | 23 - 9 | 26 - 0* |
| | | No. 2 | 10 - 1 | 15 - 10 | 20 - 1 | 24 - 6 | 26 - 0* | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* | 10 - 7 | 16 - 8 | 21 - 9 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 3 | 20 - 8 | 25 - 3 | 26 - 0* | 9 - 8 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 9 - 10 | 15 - 4 | 19 - 5 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Norway Spruce - Sweden | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* | 10 - 10 | 17 - 0 | 21 - 9 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 1 | 20 - 5 | 24 - 11 | 26 - 0* | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 2 | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | | No. 3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 11 - 1 | 17 - 4 | 22 - 11 | 26 - 0* | 26 - 0* | 11 - 1 | 17 - 4 | 22 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 10 | 16 - 10 | 21 - 4 | 26 - 0* | 26 - 0* | 9 - 11 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 2 | 10 - 4 | 15 - 7 | 19 - 9 | 24 - 2 | 26 - 0* | 9 - 3 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 3 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* | 10 - 7 | 16 - 5 | 20 - 10 | 25 - 6 | 26 - 0* |
| | | No. 1 | 10 - 4 | 15 - 10 | 20 - 1 | 24 - 6 | 26 - 0* | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 2 | 9 - 10 | 15 - 4 | 19 - 5 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Scots Pine - Finland | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 16 - 3 | 21 - 5 | 26 - 0* | 26 - 0* | 10 - 3 | 15 - 0 | 18 - 11 | 23 - 2 | 26 - 0* |
| | | No. 2 | 10 - 1 | 15 - 11 | 20 - 11 | 26 - 0* | 26 - 0* | 10 - 1 | 14 - 9 | 18 - 8 | 22 - 10 | 26 - 0* |
| | | No. 3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | Scots Pine - Germany | SS | 10 - 10 | 17 - 0 | 22 - 5 | 26 - 0* | 26 - 0* | 10 - 10 | 16 - 10 | 21 - 4 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 4 | 15 - 10 | 20 - 1 | 24 - 6 | 26 - 0* | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 2 | 9 - 7 | 14 - 10 | 18 - 9 | 22 - 11 | 26 - 0* | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | | No. 3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Scots Pine - Sweden | SS | 11 - 1 | 17 - 4 | 22 - 11 | 26 - 0* | 26 - 0* | 11 - 1 | 17 - 4 | 22 - 7 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 7 | 16 - 1 | 20 - 5 | 24 - 11 | 26 - 0* | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 2 | 9 - 2 | 13 - 5 | 17 - 0 | 20 - 9 | 24 - 1 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 3 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 1 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 10 - 7 | 16 - 8 | 21 - 11 | 26 - 0* | 26 - 0* | 10 - 3 | 15 - 0 | 18 - 11 | 23 - 2 | 26 - 0* |
| | | No. 1 | 10 - 4 | 15 - 1 | 19 - 1 | 23 - 4 | 26 - 0* | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 |
| | | No. 2 | 10 - 1 | 15 - 1 | 19 - 1 | 23 - 4 | 26 - 0* | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 9 | 20 - 7 | 25 - 2 | 26 - 0* |
| | | No. 1 | 9 - 10 | 15 - 4 | 19 - 5 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 2 | 9 - 8 | 14 - 9 | 18 - 8 | 22 - 10 | 26 - 0* | 8 - 9 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 11 |
| | | No. 3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Douglas Fir - France & Germany | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0* | 26 - 0* | 10 - 5 | 16 - 3 | 20 - 7 | 25 - 2 | 26 - 0* |
| | | No. 1 | 10 - 0 | 15 - 2 | 19 - 2 | 23 - 5 | 26 - 0* | 9 - 0 | 13 - 1 | 16 - 7 | 20 - 4 | 23 - 7 |
| | | No. 2 | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 3 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | | No. 2 | 9 - 2 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 3 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 0 |
| | Norway Spruce - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 7 | 23 - 11 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | | No. 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 3 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 7 | 14 - 7 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 1 | 9 - 5 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 2 | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Norway Spruce - Norway | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0* | 26 - 0* | 10 - 3 | 16 - 1 | 20 - 11 | 25 - 7 | 26 - 0* |
| | | No. 1 | 9 - 8 | 15 - 2 | 19 - 5 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 2 | 9 - 2 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 3 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | Norway Spruce - Romania & Ukraine | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 14 - 10 | 18 - 10 | 23 - 0 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | | No. 2 | 8 - 11 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Norway Spruce - Sweden | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 14 - 10 | 18 - 10 | 23 - 0 | 26 - 0* |
| | | No. 1 | 9 - 5 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 2 | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | | No. 3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 2 | 19 - 2 | 23 - 5 | 26 - 0* |
| | | No. 1 | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | | No. 2 | 9 - 3 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 | 8 - 0 | 11 - 8 | 14 - 10 | 18 - 1 | 21 - 0 |
| | | No. 3 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 0 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 14 - 3 | 18 - 1 | 22 - 1 | 25 - 7 |
| | | No. 1 | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 2 | 8 - 11 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Scots Pine - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 2 | 23 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 18 - 11 | 23 - 2 | 26 - 0* | 8 - 10 | 12 - 11 | 16 - 5 | 20 - 0 | 23 - 3 |
| | | No. 2 | 9 - 2 | 14 - 5 | 18 - 8 | 22 - 10 | 26 - 0* | 8 - 9 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 11 |
| | | No. 3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Scots Pine - Germany | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 1 | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 2 | 8 - 8 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | | No. 3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Scots Pine - Sweden | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 5 | 19 - 7 | 23 - 11 | 26 - 0* |
| | | No. 1 | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 2 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 | 6 - 11 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 |
| | | No. 3 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 9 - 8 | 15 - 0 | 18 - 11 | 23 - 2 | 26 - 0* | 8 - 10 | 12 - 11 | 16 - 5 | 20 - 0 | 23 - 3 |
| | | No. 1 | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 2 | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 9 - 5 | 14 - 10 | 19 - 7 | 25 - 0 | 26 - 0* | 9 - 5 | 14 - 10 | 18 - 10 | 23 - 0 | 26 - 0* |
| | | No. 1 | 9 - 3 | 14 - 0 | 17 - 9 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 9 - 1 | 13 - 6 | 17 - 1 | 20 - 10 | 24 - 2 | 8 - 0 | 11 - 8 | 14 - 9 | 18 - 1 | 20 - 11 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Douglas Fir - France & Germany | SS | 9 - 10 | 15 - 5 | 20 - 4 | 25 - 11 | 26 - 0* | 9 - 10 | 14 - 10 | 18 - 10 | 23 - 0 | 26 - 0* |
| | | No. 1 | 9 - 5 | 13 - 10 | 17 - 6 | 21 - 5 | 24 - 10 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 6 |
| | | No. 2 | 8 - 8 | 12 - 9 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 3 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 9 - 3 | 14 - 7 | 19 - 2 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 10 | 12 - 11 | 16 - 4 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 3 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 7 | 14 - 7 |
| | Norway Spruce - Finland | SS | 9 - 1 | 14 - 3 | 18 - 9 | 23 - 11 | 26 - 0* | 9 - 1 | 14 - 1 | 17 - 10 | 21 - 10 | 25 - 3 |
| | | No. 1 | 8 - 10 | 12 - 11 | 16 - 4 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 2 | 19 - 10 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 2 |
| | | No. 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 9 - 3 | 14 - 7 | 19 - 2 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 8 | 12 - 9 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 2 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 5 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | Norway Spruce - Norway | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 1 | 19 - 2 | 23 - 4 | 26 - 0* |
| | | No. 1 | 9 - 1 | 14 - 0 | 17 - 9 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 3 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 9 - 1 | 14 - 3 | 18 - 9 | 23 - 11 | 26 - 0* | 9 - 1 | 13 - 7 | 17 - 2 | 21 - 0 | 24 - 4 |
| | | No. 1 | 8 - 10 | 12 - 11 | 16 - 4 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | Norway Spruce - Sweden | SS | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 3 | 26 - 0* | 9 - 3 | 13 - 7 | 17 - 2 | 21 - 0 | 24 - 4 |
| | | No. 1 | 8 - 8 | 12 - 9 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 2 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 | 6 - 10 | 10 - 0 | 12 - 7 | 15 - 5 | 17 - 11 |
| | | No. 3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 9 - 5 | 14 - 10 | 19 - 7 | 24 - 9 | 26 - 0* | 9 - 5 | 13 - 10 | 17 - 6 | 21 - 5 | 24 - 10 |
| | | No. 1 | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | | No. 2 | 8 - 5 | 12 - 4 | 15 - 7 | 19 - 1 | 22 - 2 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | | No. 3 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 7 | 14 - 7 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 9 - 1 | 14 - 3 | 18 - 9 | 23 - 3 | 26 - 0* | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 2 | 23 - 4 |
| | | No. 1 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | Scots Pine - Finland | SS | 9 - 1 | 14 - 3 | 18 - 9 | 23 - 11 | 26 - 0* | 9 - 1 | 13 - 10 | 17 - 6 | 21 - 5 | 24 - 10 |
| | | No. 1 | 8 - 10 | 13 - 8 | 17 - 4 | 21 - 2 | 24 - 6 | 8 - 1 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 |
| | | No. 2 | 8 - 8 | 13 - 6 | 17 - 1 | 20 - 10 | 24 - 2 | 8 - 0 | 11 - 8 | 14 - 9 | 18 - 1 | 20 - 11 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Scots Pine - Germany | SS | 9 - 3 | 14 - 7 | 19 - 2 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 8 - 0 | 11 - 9 | 14 - 10 | 18 - 2 | 21 - 0 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | | No. 3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Scots Pine - Sweden | SS | 9 - 5 | 14 - 10 | 19 - 7 | 25 - 0 | 26 - 0* | 9 - 5 | 14 - 1 | 17 - 10 | 21 - 10 | 25 - 3 |
| | | No. 1 | 8 - 8 | 12 - 9 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 2 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 5 | 19 - 1 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 5 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 9 - 1 | 13 - 8 | 17 - 4 | 21 - 2 | 24 - 6 | 8 - 1 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 |
| | | No. 1 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 5 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 5 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* | 8 - 9 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 7 | 7 - 2 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 |
| | | No. 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Douglas Fir - France & Germany | SS | 9 - 1 | 14 - 4 | 18 - 10 | 23 - 9 | 26 - 0* | 9 - 1 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 5 | 12 - 4 | 15 - 8 | 19 - 2 | 22 - 2 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 |
| | | No. 2 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 3 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 7 | 13 - 6 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | | No. 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 |
| | Norway Spruce - Finland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | | No. 2 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 3 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 7 | 13 - 6 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 1 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 2 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |
| | Norway Spruce - Norway | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 1 | 8 - 5 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | Norway Spruce - Romania & Ukraine | SS | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | | No. 2 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |
| | Norway Spruce - Sweden | SS | 8 - 7 | 13 - 6 | 17 - 9 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 1 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 2 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 0 |
| | | No. 3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 9 | 13 - 9 | 18 - 1 | 22 - 1 | 25 - 8 | 8 - 5 | 12 - 4 | 15 - 8 | 19 - 2 | 22 - 2 |
| | | No. 1 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | | No. 2 | 7 - 6 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 9 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 2 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 8 - 5 | 13 - 3 | 17 - 0 | 20 - 9 | 24 - 1 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 1 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |
| | Scots Pine - Finland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 1 | 25 - 8 | 8 - 5 | 12 - 4 | 15 - 8 | 19 - 2 | 22 - 2 |
| | | No. 1 | 8 - 3 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | | No. 2 | 8 - 0 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 7 | 7 - 2 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 |
| | | No. 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Scots Pine - Germany | SS | 8 - 7 | 13 - 6 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 1 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 3 | 18 - 10 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | | No. 3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Scots Pine - Sweden | SS | 8 - 9 | 13 - 9 | 18 - 2 | 22 - 6 | 26 - 0* | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | | No. 1 | 7 - 9 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 2 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | | No. 1 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 |
| | | No. 2 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 15 - 4 | 19 - 5 | 23 - 9 | 26 - 0* |
| | | No. 2 | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 14 - 9 | 18 - 8 | 22 - 10 | 26 - 0* |
| | | No. 3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | Douglas Fir - France & Germany | SS | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0* | 26 - 0* | 10 - 5 | 16 - 4 | 21 - 7 | 26 - 0* | 26 - 0* |
| | | No. 1 | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 2 | 19 - 2 | 23 - 5 | 26 - 0* |
| | | No. 2 | 9 - 8 | 15 - 2 | 19 - 11 | 24 - 11 | 26 - 0* | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 3 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26 - 0* | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 9 - 2 | 14 - 5 | 19 - 0 | 24 - 3 | 26 - 0* | 9 - 2 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | Norway Spruce - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26 - 0* | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 8 - 11 | 14 - 0 | 17 - 9 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 3 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26 - 0* | 9 - 5 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 2 | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 4 | 26 - 0* | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Norway Spruce - Norway | SS | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0* | 26 - 0* | 10 - 3 | 16 - 1 | 21 - 2 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 5 | 23 - 9 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 5 | 19 - 0 | 24 - 3 | 26 - 0* | 9 - 2 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 3 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26 - 0* | 9 - 5 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 |
| | | No. 2 | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Norway Spruce - Sweden | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26 - 0* | 9 - 5 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 2 | 8 - 11 | 14 - 1 | 18 - 5 | 22 - 6 | 26 - 0* | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | | No. 3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 14 - 7 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 2 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 2 | 26 - 0* | 9 - 3 | 13 - 6 | 17 - 1 | 20 - 11 | 24 - 3 |
| | | No. 3 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 6 | 26 - 0* | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 2 | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | Scots Pine - Finland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 10 | 26 - 0* | 9 - 5 | 14 - 9 | 18 - 11 | 23 - 2 | 26 - 0* |
| | | No. 2 | 9 - 2 | 14 - 5 | 19 - 0 | 24 - 3 | 26 - 0* | 9 - 2 | 14 - 5 | 18 - 8 | 22 - 10 | 26 - 0* |
| | | No. 3 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | Scots Pine - Germany | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 6 | 24 - 6 | 26 - 0* | 9 - 5 | 13 - 9 | 17 - 5 | 21 - 3 | 24 - 8 |
| | | No. 2 | 8 - 8 | 13 - 8 | 18 - 0 | 22 - 11 | 26 - 0* | 8 - 8 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | | No. 3 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | Scots Pine - Sweden | SS | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 9 | 20 - 10 | 26 - 0* | 26 - 0* |
| | | No. 1 | 9 - 8 | 15 - 2 | 19 - 11 | 24 - 11 | 26 - 0* | 9 - 6 | 13 - 11 | 17 - 8 | 21 - 7 | 25 - 0 |
| | | No. 2 | 8 - 11 | 13 - 5 | 17 - 0 | 20 - 9 | 24 - 1 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 3 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 1 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 9 - 8 | 15 - 2 | 19 - 11 | 25 - 5 | 26 - 0* | 9 - 8 | 15 - 0 | 18 - 11 | 23 - 2 | 26 - 0* |
| | | No. 1 | 9 - 5 | 14 - 9 | 19 - 1 | 23 - 4 | 26 - 0* | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 |
| | | No. 2 | 9 - 2 | 14 - 5 | 19 - 0 | 23 - 4 | 26 - 0* | 8 - 11 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 |
| | | No. 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 9 - 1 | 14 - 4 | 18 - 11 | 24 - 1 | 26 - 0* | 9 - 1 | 14 - 4 | 18 - 11 | 24 - 1 | 26 - 0* |
| | | No. 1 | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 2 | 8 - 9 | 13 - 9 | 18 - 1 | 22 - 10 | 26 - 0* | 8 - 9 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 11 |
| | | No. 3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Douglas Fir - France & Germany | SS | 9 - 6 | 14 - 11 | 19 - 7 | 25 - 0 | 26 - 0* | 9 - 6 | 14 - 11 | 19 - 7 | 25 - 0 | 26 - 0* |
| | | No. 1 | 9 - 1 | 14 - 4 | 18 - 11 | 23 - 5 | 26 - 0* | 9 - 0 | 13 - 1 | 16 - 7 | 20 - 4 | 23 - 7 |
| | | No. 2 | 8 - 9 | 13 - 9 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 3 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 14 - 1 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 9 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | | No. 2 | 8 - 4 | 13 - 1 | 17 - 3 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 3 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 0 |
| | Norway Spruce - Finland | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 9 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | | No. 2 | 8 - 1 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 3 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 7 | 14 - 7 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 14 - 1 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 2 | 8 - 1 | 12 - 9 | 16 - 7 | 20 - 3 | 23 - 5 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Norway Spruce - Norway | SS | 9 - 4 | 14 - 7 | 19 - 3 | 24 - 7 | 26 - 0* | 9 - 4 | 14 - 7 | 19 - 3 | 24 - 7 | 26 - 0* |
| | | No. 1 | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* | 8 - 9 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 2 | 8 - 4 | 13 - 1 | 17 - 3 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 3 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | Norway Spruce - Romania & Ukraine | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 0 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 9 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 3 | 15 - 6 | 18 - 11 | 22 - 0 |
| | | No. 2 | 8 - 1 | 12 - 9 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Norway Spruce - Sweden | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 0 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 2 | 8 - 1 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 |
| | | No. 3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 9 - 1 | 14 - 4 | 18 - 11 | 24 - 1 | 26 - 0* | 9 - 1 | 14 - 4 | 18 - 11 | 23 - 5 | 26 - 0* |
| | | No. 1 | 8 - 11 | 14 - 1 | 18 - 5 | 22 - 6 | 26 - 0* | 8 - 7 | 12 - 7 | 16 - 0 | 19 - 6 | 22 - 7 |
| | | No. 2 | 8 - 7 | 13 - 5 | 17 - 1 | 20 - 11 | 24 - 3 | 8 - 0 | 11 - 8 | 14 - 10 | 18 - 1 | 21 - 0 |
| | | No. 3 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 0 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 1 | 22 - 1 | 25 - 7 |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 2 | 8 - 1 | 12 - 9 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | Scots Pine - Finland | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 9 | 22 - 7 | 26 - 0* | 8 - 7 | 12 - 11 | 16 - 5 | 20 - 0 | 23 - 3 |
| | | No. 2 | 8 - 4 | 13 - 1 | 17 - 3 | 22 - 1 | 26 - 0* | 8 - 4 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 11 |
| | | No. 3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | Scots Pine - Germany | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 14 - 1 | 18 - 5 | 22 - 6 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 5 | 17 - 5 | 21 - 3 | 24 - 8 | 8 - 2 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 2 | 7 - 11 | 12 - 5 | 16 - 3 | 19 - 10 | 23 - 0 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | | No. 3 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | Scots Pine - Sweden | SS | 9 - 1 | 14 - 4 | 18 - 11 | 24 - 1 | 26 - 0* | 9 - 1 | 14 - 4 | 18 - 11 | 23 - 11 | 26 - 0* |
| | | No. 1 | 8 - 9 | 13 - 9 | 17 - 8 | 21 - 7 | 25 - 0 | 8 - 3 | 12 - 1 | 15 - 3 | 18 - 8 | 21 - 8 |
| | | No. 2 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 | 6 - 11 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 |
| | | No. 3 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* | 8 - 9 | 12 - 11 | 16 - 5 | 20 - 0 | 23 - 3 |
| | | No. 1 | 8 - 7 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 2 | 8 - 4 | 13 - 1 | 16 - 7 | 20 - 3 | 23 - 5 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 6 | 20 - 4 |
| | | No. 3 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 8 | 26 - 0* | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 8 | 26 - 0* |
| | | No. 1 | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 8 | 25 - 2 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 8 - 3 | 12 - 11 | 17 - 1 | 20 - 10 | 24 - 2 | 8 - 0 | 11 - 8 | 14 - 9 | 18 - 1 | 20 - 11 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Douglas Fir - France & Germany | SS | 8 - 11 | 14 - 0 | 18 - 5 | 23 - 7 | 26 - 0* | 8 - 11 | 14 - 0 | 18 - 5 | 23 - 0 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 6 | 17 - 6 | 21 - 5 | 24 - 10 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 6 |
| | | No. 2 | 8 - 3 | 12 - 9 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 3 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 1 | 12 - 8 | 16 - 4 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 7 - 10 | 12 - 4 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 3 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 7 | 14 - 7 |
| | Norway Spruce - Finland | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 26 - 0* | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 25 - 3 |
| | | No. 1 | 8 - 1 | 12 - 8 | 16 - 4 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 2 | 19 - 10 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 2 |
| | | No. 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 1 | 12 - 8 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 2 | 7 - 8 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 5 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | Norway Spruce - Norway | SS | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 1 | 23 - 1 | 26 - 0* |
| | | No. 1 | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 8 | 25 - 2 | 8 - 3 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 7 - 10 | 12 - 4 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 3 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | Norway Spruce - Romania & Ukraine | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 26 - 0* | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 0 | 24 - 4 |
| | | No. 1 | 8 - 1 | 12 - 8 | 16 - 4 | 20 - 0 | 23 - 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 7 - 8 | 12 - 0 | 15 - 4 | 18 - 9 | 21 - 9 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | Norway Spruce - Sweden | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 17 - 2 | 21 - 0 | 24 - 4 |
| | | No. 1 | 8 - 1 | 12 - 8 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 2 | 7 - 8 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 | 6 - 10 | 10 - 0 | 12 - 7 | 15 - 5 | 17 - 11 |
| | | No. 3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 8 | 26 - 0* | 8 - 7 | 13 - 6 | 17 - 6 | 21 - 5 | 24 - 10 |
| | | No. 1 | 8 - 5 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 10 | 20 - 8 |
| | | No. 2 | 8 - 1 | 12 - 4 | 15 - 7 | 19 - 1 | 22 - 2 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 |
| | | No. 3 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 7 | 14 - 7 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 26 - 0* | 8 - 3 | 12 - 11 | 16 - 6 | 20 - 2 | 23 - 4 |
| | | No. 1 | 8 - 1 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 7 - 8 | 12 - 0 | 15 - 4 | 18 - 9 | 21 - 9 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | Scots Pine - Finland | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 9 | 26 - 0* | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 5 | 24 - 10 |
| | | No. 1 | 8 - 1 | 12 - 8 | 16 - 8 | 21 - 2 | 24 - 6 | 8 - 1 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 |
| | | No. 2 | 7 - 10 | 12 - 4 | 16 - 3 | 20 - 9 | 24 - 2 | 7 - 10 | 11 - 8 | 14 - 9 | 18 - 1 | 20 - 11 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 |
| | Scots Pine - Germany | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 1 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 7 - 5 | 11 - 8 | 14 - 10 | 18 - 2 | 21 - 0 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 3 |
| | | No. 3 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 8 | 15 - 11 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Scots Pine - Sweden | SS | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 8 | 26 - 0* | 8 - 7 | 13 - 6 | 17 - 9 | 21 - 10 | 25 - 3 |
| | | No. 1 | 8 - 3 | 12 - 9 | 16 - 1 | 19 - 8 | 22 - 10 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 2 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 5 | 19 - 1 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 5 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 8 - 3 | 12 - 11 | 17 - 1 | 21 - 2 | 24 - 6 | 8 - 1 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 |
| | | No. 1 | 8 - 1 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 5 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 2 | 7 - 10 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 5 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 3 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |

| Rafter Spacing (inches) | Species and Grade | | Roof live load = 20 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 7 | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 7 | 23 - 10 |
| | | No. 1 | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 7 - 8 | 12 - 0 | 15 - 3 | 18 - 8 | 21 - 7 | 7 - 2 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 |
| | | No. 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Douglas Fir - France & Germany | SS | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 10 | 26 - 0* | 8 - 3 | 13 - 0 | 16 - 10 | 20 - 7 | 23 - 10 |
| | | No. 1 | 8 - 0 | 12 - 4 | 15 - 8 | 19 - 2 | 22 - 2 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 |
| | | No. 2 | 7 - 8 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 3 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 24 - 8 | 7 - 10 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 1 | 7 - 6 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | | No. 2 | 7 - 3 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 |
| | Norway Spruce - Finland | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 6 | 22 - 7 |
| | | No. 1 | 7 - 6 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | | No. 2 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 3 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 24 - 8 | 7 - 10 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 1 | 7 - 6 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 2 | 7 - 1 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |
| | Norway Spruce - Norway | SS | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 | 26 - 0* | 8 - 1 | 12 - 9 | 16 - 10 | 20 - 11 | 24 - 3 |
| | | No. 1 | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 |
| | | No. 2 | 7 - 3 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 1 | 7 - 6 | 11 - 7 | 14 - 8 | 17 - 10 | 20 - 9 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 17 - 11 |
| | | No. 2 | 7 - 1 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |
| | Norway Spruce - Sweden | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 1 | 7 - 6 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 2 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 0 |
| | | No. 3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 7 | 8 - 0 | 12 - 4 | 15 - 8 | 19 - 2 | 22 - 2 |
| | | No. 1 | 7 - 10 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 | 7 - 0 | 10 - 4 | 13 - 0 | 15 - 11 | 18 - 6 |
| | | No. 2 | 7 - 6 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 9 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 9 | 17 - 2 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 0 | 7 - 3 | 9 - 3 | 11 - 3 | 13 - 1 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 1 | 7 - 8 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 1 | 7 - 6 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 7 - 1 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 6 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |
| | Scots Pine - Finland | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 8 | 19 - 2 | 22 - 2 |
| | | No. 1 | 7 - 6 | 11 - 9 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | | No. 2 | 7 - 3 | 11 - 5 | 15 - 1 | 18 - 8 | 21 - 7 | 7 - 2 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 |
| | | No. 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 | 5 - 4 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | Scots Pine - Germany | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 24 - 8 | 7 - 10 | 11 - 11 | 15 - 1 | 18 - 5 | 21 - 4 |
| | | No. 1 | 7 - 6 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 8 | 9 - 8 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 6 - 11 | 10 - 6 | 13 - 3 | 16 - 3 | 18 - 10 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 1 | 16 - 3 |
| | | No. 3 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | Scots Pine - Sweden | SS | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 7 | 8 - 0 | 12 - 6 | 16 - 0 | 19 - 6 | 22 - 7 |
| | | No. 1 | 7 - 8 | 11 - 5 | 14 - 5 | 17 - 7 | 20 - 5 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 8 |
| | | No. 2 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 8 | 12 - 0 | 15 - 6 | 18 - 11 | 21 - 11 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | | No. 1 | 7 - 4 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 |
| | | No. 2 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 4 | 16 - 7 |
| | | No. 3 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 9 - 8 | 15 - 2 | 20 - 0 | 25 - 6 | 26 - 0* | 9 - 8 | 15 - 2 | 20 - 0 | 24 - 11 | 26 - 0* |
| | | No. 1 | 9 - 6 | 14 - 9 | 18 - 8 | 22 - 9 | 26 - 0* | 9 - 0 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 |
| | | No. 2 | 9 - 3 | 14 - 2 | 17 - 11 | 21 - 11 | 25 - 5 | 8 - 8 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 9 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Douglas Fir - France & Germany | SS | 10 - 0 | 15 - 9 | 20 - 9 | 26 - 0* | 26 - 0* | 10 - 0 | 15 - 9 | 20 - 5 | 24 - 11 | 26 - 0* |
| | | No. 1 | 9 - 8 | 14 - 6 | 18 - 5 | 22 - 6 | 26 - 0* | 8 - 11 | 13 - 0 | 16 - 6 | 20 - 1 | 23 - 4 |
| | | No. 2 | 9 - 2 | 13 - 4 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 9 - 6 | 14 - 10 | 19 - 7 | 24 - 11 | 26 - 0* | 9 - 6 | 14 - 5 | 18 - 3 | 22 - 4 | 25 - 11 |
| | | No. 1 | 9 - 1 | 13 - 7 | 17 - 2 | 21 - 0 | 24 - 4 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 8 - 10 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 | 8 - 1 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 3 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | Norway Spruce - Finland | SS | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 6 | 26 - 0* | 9 - 3 | 14 - 7 | 19 - 2 | 23 - 8 | 26 - 0* |
| | | No. 1 | 9 - 1 | 13 - 7 | 17 - 2 | 21 - 0 | 24 - 4 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 9 - 6 | 14 - 10 | 19 - 7 | 24 - 11 | 26 - 0* | 9 - 6 | 14 - 5 | 18 - 3 | 22 - 4 | 25 - 11 |
| | | No. 1 | 9 - 1 | 13 - 4 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 2 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 8 | 11 - 3 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Norway Spruce - Norway | SS | 9 - 10 | 15 - 6 | 20 - 5 | 26 - 0* | 26 - 0* | 9 - 10 | 15 - 6 | 20 - 5 | 25 - 4 | 26 - 0* |
| | | No. 1 | 9 - 3 | 14 - 7 | 18 - 8 | 22 - 9 | 26 - 0* | 9 - 0 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 |
| | | No. 2 | 8 - 10 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 | 8 - 1 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | Norway Spruce - Romania & Ukraine | SS | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 6 | 26 - 0* | 9 - 3 | 14 - 7 | 18 - 8 | 22 - 9 | 26 - 0* |
| | | No. 1 | 9 - 1 | 13 - 7 | 17 - 2 | 21 - 0 | 24 - 4 | 8 - 4 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 8 - 7 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Norway Spruce - Sweden | SS | 9 - 6 | 14 - 10 | 19 - 7 | 25 - 0 | 26 - 0* | 9 - 6 | 14 - 9 | 18 - 8 | 22 - 9 | 26 - 0* |
| | | No. 1 | 9 - 1 | 13 - 4 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 2 | 8 - 3 | 12 - 1 | 15 - 4 | 18 - 9 | 21 - 8 | 7 - 5 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 3 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 9 - 8 | 15 - 2 | 20 - 0 | 25 - 6 | 26 - 0* | 9 - 8 | 15 - 0 | 19 - 0 | 23 - 3 | 26 - 0* |
| | | No. 1 | 9 - 6 | 14 - 0 | 17 - 8 | 21 - 7 | 25 - 1 | 8 - 6 | 12 - 6 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 2 | 8 - 10 | 13 - 0 | 16 - 5 | 20 - 1 | 23 - 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 10 |
| | | No. 3 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 5 | 26 - 0* | 9 - 3 | 14 - 1 | 17 - 11 | 21 - 10 | 25 - 4 |
| | | No. 1 | 9 - 0 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 | 8 - 1 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 2 | 8 - 7 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Scots Pine - Finland | SS | 9 - 3 | 14 - 7 | 19 - 2 | 24 - 6 | 26 - 0* | 9 - 3 | 14 - 7 | 19 - 0 | 23 - 3 | 26 - 0* |
| | | No. 1 | 9 - 1 | 14 - 3 | 18 - 2 | 22 - 2 | 25 - 9 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | | No. 2 | 8 - 10 | 13 - 10 | 17 - 11 | 21 - 11 | 25 - 5 | 8 - 8 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 9 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Scots Pine - Germany | SS | 9 - 6 | 14 - 10 | 19 - 7 | 24 - 11 | 26 - 0* | 9 - 6 | 14 - 5 | 18 - 3 | 22 - 4 | 25 - 11 |
| | | No. 1 | 9 - 0 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 | 8 - 1 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 2 | 8 - 4 | 12 - 4 | 15 - 7 | 19 - 1 | 22 - 1 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 3 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | Scots Pine - Sweden | SS | 9 - 8 | 15 - 2 | 20 - 0 | 25 - 6 | 26 - 0* | 9 - 8 | 15 - 2 | 19 - 4 | 23 - 8 | 26 - 0* |
| | | No. 1 | 9 - 2 | 13 - 4 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 3 | 20 - 0 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 5 | 17 - 11 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 6 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 9 - 3 | 14 - 4 | 18 - 2 | 22 - 2 | 25 - 9 | 8 - 9 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | | No. 1 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 8 | 11 - 3 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 8 - 7 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 8 | 11 - 3 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* | 8 - 9 | 13 - 9 | 17 - 8 | 21 - 7 | 25 - 1 |
| | | No. 1 | 8 - 7 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 2 | 8 - 5 | 12 - 3 | 15 - 6 | 19 - 0 | 22 - 0 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | Douglas Fir - France & Germany | SS | 9 - 1 | 14 - 4 | 18 - 10 | 24 - 1 | 26 - 0* | 9 - 1 | 14 - 0 | 17 - 8 | 21 - 7 | 25 - 1 |
| | | No. 1 | 8 - 7 | 12 - 7 | 15 - 11 | 19 - 6 | 22 - 7 | 7 - 8 | 11 - 3 | 14 - 3 | 17 - 5 | 20 - 2 |
| | | No. 2 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 2 | 14 - 1 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 7 | 13 - 6 | 17 - 8 | 21 - 7 | 25 - 1 | 8 - 6 | 12 - 6 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 1 | 8 - 0 | 11 - 9 | 14 - 11 | 18 - 2 | 21 - 1 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 2 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | Norway Spruce - Finland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 16 - 9 | 20 - 6 | 23 - 9 |
| | | No. 1 | 8 - 0 | 11 - 9 | 14 - 11 | 18 - 2 | 21 - 1 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 2 | 6 - 11 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 7 | 13 - 6 | 17 - 8 | 21 - 7 | 25 - 1 | 8 - 6 | 12 - 6 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 2 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Norway Spruce - Norway | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 14 - 1 | 18 - 0 | 22 - 0 | 25 - 6 |
| | | No. 1 | 8 - 5 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 2 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 2 | 14 - 1 |
| | Norway Spruce - Romania & Ukraine | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 1 | 25 - 7 | 8 - 5 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 |
| | | No. 1 | 8 - 0 | 11 - 9 | 14 - 11 | 18 - 2 | 21 - 1 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 2 | 7 - 7 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Norway Spruce - Sweden | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 1 | 25 - 7 | 8 - 7 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 2 | 7 - 2 | 10 - 6 | 13 - 3 | 16 - 2 | 18 - 9 | 6 - 5 | 9 - 4 | 11 - 10 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 12 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 9 | 13 - 9 | 18 - 2 | 22 - 6 | 26 - 0* | 8 - 9 | 13 - 0 | 16 - 6 | 20 - 1 | 23 - 4 |
| | | No. 1 | 8 - 3 | 12 - 1 | 15 - 4 | 18 - 9 | 21 - 8 | 7 - 5 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 2 | 7 - 8 | 11 - 3 | 14 - 3 | 17 - 4 | 20 - 2 | 6 - 10 | 10 - 0 | 12 - 9 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 8 - 5 | 13 - 3 | 17 - 4 | 21 - 2 | 24 - 6 | 8 - 4 | 12 - 3 | 15 - 6 | 18 - 11 | 21 - 11 |
| | | No. 1 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 2 | 7 - 7 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Scots Pine - Finland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 0 | 16 - 6 | 20 - 1 | 23 - 4 |
| | | No. 1 | 8 - 3 | 12 - 5 | 15 - 9 | 19 - 3 | 22 - 3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | | No. 2 | 8 - 0 | 12 - 3 | 15 - 6 | 19 - 0 | 22 - 0 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | Scots Pine - Germany | SS | 8 - 7 | 13 - 6 | 17 - 8 | 21 - 7 | 25 - 1 | 8 - 6 | 12 - 6 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 1 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 2 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 12 - 11 |
| | Scots Pine - Sweden | SS | 8 - 9 | 13 - 9 | 18 - 2 | 22 - 11 | 26 - 0* | 8 - 9 | 13 - 3 | 16 - 9 | 20 - 6 | 23 - 9 |
| | | No. 1 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 2 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 5 | 15 - 6 |
| | | No. 3 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 8 - 5 | 12 - 5 | 15 - 9 | 19 - 3 | 22 - 3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | | No. 1 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 3 | 13 - 0 | 17 - 1 | 21 - 10 | 25 - 7 | 8 - 3 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 |
| | | No. 1 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | Douglas Fir - France & Germany | SS | 8 - 7 | 13 - 6 | 17 - 9 | 22 - 1 | 25 - 7 | 8 - 7 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 |
| | | No. 1 | 7 - 10 | 11 - 6 | 14 - 7 | 17 - 9 | 20 - 7 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 |
| | | No. 2 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 1 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | | No. 2 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Norway Spruce - Finland | SS | 7 - 11 | 12 - 5 | 16 - 5 | 20 - 11 | 24 - 3 | 7 - 11 | 12 - 1 | 15 - 4 | 18 - 9 | 21 - 8 |
| | | No. 1 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | | No. 3 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 1 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Norway | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0 | 8 - 5 | 13 - 0 | 16 - 5 | 20 - 1 | 23 - 3 |
| | | No. 1 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 2 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 11 | 12 - 5 | 16 - 5 | 20 - 2 | 23 - 4 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 1 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | | No. 2 | 6 - 11 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Sweden | SS | 8 - 1 | 12 - 9 | 16 - 6 | 20 - 2 | 23 - 4 | 7 - 11 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 1 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 10 | 17 - 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 3 | 13 - 0 | 16 - 10 | 20 - 6 | 23 - 10 | 8 - 1 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 |
| | | No. 1 | 7 - 7 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 2 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 11 | 12 - 5 | 15 - 10 | 19 - 4 | 22 - 5 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 3 | 20 - 0 |
| | | No. 1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 11 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Scots Pine - Finland | SS | 7 - 11 | 12 - 5 | 16 - 5 | 20 - 6 | 23 - 10 | 7 - 11 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 |
| | | No. 1 | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 7 | 20 - 4 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 7 - 7 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | Scots Pine - Germany | SS | 8 - 1 | 12 - 9 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Scots Pine - Sweden | SS | 8 - 3 | 13 - 0 | 17 - 1 | 20 - 11 | 24 - 3 | 8 - 3 | 12 - 1 | 15 - 4 | 18 - 9 | 21 - 8 |
| | | No. 1 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 3 | 4 - 6 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 9 | 11 - 4 | 14 - 4 | 17 - 7 | 20 - 4 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 1 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 9 | 22 - 10 | 7 - 8 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | Douglas Fir - France & Germany | SS | 7 - 11 | 12 - 6 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 2 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 5 | 6 - 5 | 8 - 2 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 6 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 2 |
| | Norway Spruce - Finland | SS | 7 - 4 | 11 - 7 | 15 - 3 | 18 - 9 | 21 - 8 | 7 - 4 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 6 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Norway | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 1 | 23 - 3 | 7 - 10 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 10 |
| | | No. 1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 5 | 6 - 5 | 8 - 2 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 4 | 11 - 7 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Sweden | SS | 7 - 6 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 8 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 8 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 2 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 4 | 11 - 2 | 14 - 2 | 17 - 3 | 20 - 0 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 5 | 17 - 11 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Scots Pine - Finland | SS | 7 - 4 | 11 - 7 | 15 - 0 | 18 - 4 | 21 - 3 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | Scots Pine - Germany | SS | 7 - 6 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 2 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 1 | 14 - 0 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 |
| | Scots Pine - Sweden | SS | 7 - 8 | 12 - 0 | 15 - 4 | 18 - 9 | 21 - 8 | 7 - 5 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 6 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 1 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26 - 0* | 8 - 7 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 |
| | | No. 2 | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 11 | 25 - 5 | 8 - 5 | 12 - 8 | 16 - 0 | 19 - 7 | 22 - 9 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Douglas Fir - France & Germany | SS | 9 - 1 | 14 - 4 | 18 - 10 | 24 - 1 | 26 - 0* | 9 - 1 | 14 - 4 | 18 - 10 | 24 - 1 | 26 - 0* |
| | | No. 1 | 8 - 9 | 13 - 9 | 18 - 2 | 22 - 6 | 26 - 0* | 8 - 9 | 13 - 0 | 16 - 6 | 20 - 1 | 23 - 4 |
| | | No. 2 | 8 - 5 | 13 - 3 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26 - 0* | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 4 | 25 - 11 |
| | | No. 1 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 0 | 24 - 4 | 8 - 3 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 8 - 0 | 12 - 7 | 16 - 7 | 20 - 4 | 23 - 7 | 8 - 0 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 3 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | Norway Spruce - Finland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* |
| | | No. 1 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 0 | 24 - 4 | 8 - 3 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 7 - 10 | 11 - 8 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 3 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26 - 0* | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 4 | 25 - 11 |
| | | No. 1 | 8 - 3 | 12 - 11 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 2 | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 8 | 11 - 3 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Norway Spruce - Norway | SS | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* | 8 - 11 | 14 - 1 | 18 - 6 | 23 - 8 | 26 - 0* |
| | | No. 1 | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 2 | 16 - 8 | 20 - 4 | 23 - 7 |
| | | No. 2 | 8 - 0 | 12 - 7 | 16 - 7 | 20 - 4 | 23 - 7 | 8 - 0 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 3 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | Norway Spruce - Romania & Ukraine | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* |
| | | No. 1 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 0 | 24 - 4 | 8 - 3 | 12 - 2 | 15 - 4 | 18 - 9 | 21 - 9 |
| | | No. 2 | 7 - 10 | 12 - 3 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Norway Spruce - Sweden | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26 - 0* | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26 - 0* |
| | | No. 1 | 8 - 3 | 12 - 11 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 2 | 7 - 10 | 12 - 1 | 15 - 4 | 18 - 9 | 21 - 8 | 7 - 5 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 3 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* |
| | | No. 1 | 8 - 7 | 13 - 6 | 17 - 8 | 21 - 7 | 25 - 1 | 8 - 6 | 12 - 6 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 2 | 8 - 3 | 12 - 11 | 16 - 5 | 20 - 1 | 23 - 3 | 7 - 11 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 10 |
| | | No. 3 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 17 - 5 | 21 - 10 | 25 - 4 |
| | | No. 1 | 8 - 3 | 12 - 11 | 16 - 8 | 20 - 4 | 23 - 7 | 8 - 1 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 2 | 7 - 10 | 12 - 3 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | Scots Pine - Finland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 3 | 26 - 0* |
| | | No. 1 | 8 - 3 | 12 - 11 | 17 - 0 | 21 - 9 | 25 - 9 | 8 - 3 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | | No. 2 | 8 - 0 | 12 - 7 | 16 - 7 | 21 - 2 | 25 - 5 | 8 - 0 | 12 - 7 | 16 - 0 | 19 - 7 | 22 - 9 |
| | | No. 3 | 7 - 3 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | Scots Pine - Germany | SS | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 9 | 26 - 0* | 8 - 7 | 13 - 6 | 17 - 10 | 22 - 4 | 25 - 11 |
| | | No. 1 | 8 - 3 | 12 - 11 | 16 - 8 | 20 - 4 | 23 - 7 | 8 - 1 | 11 - 9 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 2 | 7 - 7 | 11 - 11 | 15 - 7 | 19 - 1 | 22 - 1 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 1 | 19 - 9 |
| | | No. 3 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | Scots Pine - Sweden | SS | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* | 8 - 9 | 13 - 9 | 18 - 2 | 23 - 2 | 26 - 0* |
| | | No. 1 | 8 - 5 | 13 - 3 | 16 - 11 | 20 - 8 | 24 - 0 | 8 - 2 | 12 - 0 | 15 - 2 | 18 - 6 | 21 - 5 |
| | | No. 2 | 7 - 8 | 11 - 2 | 14 - 2 | 17 - 3 | 20 - 0 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 5 | 17 - 11 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 6 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 8 - 5 | 13 - 3 | 17 - 5 | 22 - 2 | 25 - 9 | 8 - 5 | 12 - 10 | 16 - 3 | 19 - 10 | 23 - 0 |
| | | No. 1 | 8 - 3 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 8 | 11 - 3 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 2 | 8 - 0 | 12 - 6 | 15 - 10 | 19 - 5 | 22 - 6 | 7 - 8 | 11 - 3 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 7 | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 1 |
| | | No. 1 | 7 - 10 | 12 - 3 | 16 - 2 | 19 - 9 | 22 - 10 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 2 | 7 - 8 | 12 - 0 | 15 - 6 | 19 - 0 | 22 - 0 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | Douglas Fir - France & Germany | SS | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 10 | 26 - 0* | 8 - 3 | 13 - 0 | 17 - 2 | 21 - 7 | 25 - 1 |
| | | No. 1 | 8 - 0 | 12 - 6 | 15 - 11 | 19 - 6 | 22 - 7 | 7 - 8 | 11 - 3 | 14 - 3 | 17 - 5 | 20 - 2 |
| | | No. 2 | 7 - 8 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 2 | 14 - 1 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 1 | 7 - 6 | 11 - 9 | 14 - 11 | 18 - 2 | 21 - 1 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 2 | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | Norway Spruce - Finland | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 23 - 9 |
| | | No. 1 | 7 - 6 | 11 - 9 | 14 - 11 | 18 - 2 | 21 - 1 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 2 | 6 - 11 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 1 | 7 - 6 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 2 | 7 - 1 | 10 - 10 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Norway Spruce - Norway | SS | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 | 26 - 0* | 8 - 1 | 12 - 9 | 16 - 10 | 21 - 6 | 25 - 6 |
| | | No. 1 | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 9 | 22 - 10 | 7 - 8 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 2 | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 3 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 2 | 14 - 1 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 19 - 9 | 22 - 10 |
| | | No. 1 | 7 - 6 | 11 - 9 | 14 - 11 | 18 - 2 | 21 - 1 | 7 - 2 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 10 |
| | | No. 2 | 7 - 1 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Norway Spruce - Sweden | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 16 - 2 | 19 - 9 | 22 - 10 |
| | | No. 1 | 7 - 6 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 2 | 7 - 1 | 10 - 6 | 13 - 3 | 16 - 2 | 18 - 9 | 6 - 5 | 9 - 4 | 11 - 10 | 14 - 6 | 16 - 10 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 12 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 7 | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 1 | 23 - 4 |
| | | No. 1 | 7 - 10 | 12 - 1 | 15 - 4 | 18 - 9 | 21 - 8 | 7 - 5 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 2 | 7 - 6 | 11 - 3 | 14 - 3 | 17 - 4 | 20 - 2 | 6 - 10 | 10 - 0 | 12 - 9 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 6 | 7 - 8 | 12 - 0 | 15 - 6 | 18 - 11 | 21 - 11 |
| | | No. 1 | 7 - 6 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 2 | 7 - 1 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | Scots Pine - Finland | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 1 | 23 - 4 |
| | | No. 1 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 3 | 22 - 3 | 7 - 6 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | | No. 2 | 7 - 3 | 11 - 5 | 15 - 1 | 19 - 0 | 22 - 0 | 7 - 3 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 3 | 6 - 4 | 9 - 3 | 11 - 8 | 14 - 3 | 16 - 7 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 9 | 14 - 10 |
| | Scots Pine - Germany | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 15 - 10 | 19 - 4 | 22 - 5 |
| | | No. 1 | 7 - 6 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 0 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 2 | 6 - 11 | 10 - 8 | 13 - 6 | 16 - 6 | 19 - 2 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 12 - 11 |
| | Scots Pine - Sweden | SS | 8 - 0 | 12 - 6 | 16 - 6 | 21 - 1 | 25 - 7 | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 6 | 23 - 9 |
| | | No. 1 | 7 - 8 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 7 |
| | | No. 2 | 6 - 7 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 5 | 15 - 6 |
| | | No. 3 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 8 | 12 - 0 | 15 - 9 | 19 - 3 | 22 - 3 | 7 - 7 | 11 - 1 | 14 - 1 | 17 - 2 | 19 - 11 |
| | | No. 1 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 2 | 7 - 3 | 10 - 10 | 13 - 9 | 16 - 10 | 19 - 6 | 6 - 8 | 9 - 9 | 12 - 4 | 15 - 0 | 17 - 5 |
| | | No. 3 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 10 | 24 - 1 | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 9 | 22 - 10 |
| | | No. 1 | 7 - 4 | 11 - 7 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 2 | 7 - 2 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | Douglas Fir - France & Germany | SS | 7 - 9 | 12 - 3 | 16 - 1 | 20 - 7 | 25 - 0 | 7 - 9 | 12 - 3 | 16 - 1 | 19 - 9 | 22 - 10 |
| | | No. 1 | 7 - 6 | 11 - 6 | 14 - 7 | 17 - 9 | 20 - 7 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 |
| | | No. 2 | 7 - 2 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 22 - 10 | 7 - 4 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 0 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | | No. 2 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Norway Spruce - Finland | SS | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 23 - 1 | 7 - 2 | 11 - 4 | 14 - 11 | 18 - 9 | 21 - 8 |
| | | No. 1 | 7 - 0 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 |
| | | No. 3 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 22 - 10 | 7 - 4 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 0 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 8 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Norway | SS | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 2 | 24 - 7 | 7 - 8 | 12 - 0 | 15 - 10 | 20 - 1 | 23 - 3 |
| | | No. 1 | 7 - 2 | 11 - 4 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 2 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 3 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 23 - 1 | 7 - 2 | 11 - 4 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 1 | 7 - 0 | 10 - 9 | 13 - 7 | 16 - 7 | 19 - 3 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 |
| | | No. 2 | 6 - 8 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Sweden | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 23 - 4 | 7 - 4 | 11 - 7 | 14 - 9 | 18 - 0 | 20 - 11 |
| | | No. 1 | 7 - 0 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 10 | 17 - 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 10 | 23 - 10 | 7 - 6 | 11 - 9 | 15 - 0 | 18 - 4 | 21 - 3 |
| | | No. 1 | 7 - 4 | 11 - 0 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 2 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 22 - 5 | 7 - 2 | 11 - 2 | 14 - 2 | 17 - 3 | 20 - 0 |
| | | No. 1 | 7 - 0 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 8 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Scots Pine - Finland | SS | 7 - 2 | 11 - 4 | 14 - 11 | 19 - 0 | 23 - 1 | 7 - 2 | 11 - 4 | 14 - 11 | 18 - 4 | 21 - 3 |
| | | No. 1 | 7 - 0 | 11 - 1 | 14 - 4 | 17 - 7 | 20 - 4 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 4 | 20 - 1 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 3 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 |
| | Scots Pine - Germany | SS | 7 - 4 | 11 - 7 | 15 - 3 | 19 - 5 | 22 - 10 | 7 - 4 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 0 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 6 | 9 - 9 | 12 - 4 | 15 - 1 | 17 - 6 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Scots Pine - Sweden | SS | 7 - 6 | 11 - 9 | 15 - 6 | 19 - 10 | 24 - 1 | 7 - 6 | 11 - 9 | 15 - 4 | 18 - 9 | 21 - 8 |
| | | No. 1 | 7 - 2 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 3 | 4 - 6 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 2 | 11 - 4 | 14 - 4 | 17 - 7 | 20 - 4 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 1 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 4 | 17 - 9 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 30 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 10 - 11 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 8 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | Douglas Fir - France & Germany | SS | 7 - 3 | 11 - 4 | 15 - 0 | 19 - 1 | 22 - 10 | 7 - 3 | 11 - 4 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 3 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 |
| | | No. 2 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 5 | 6 - 5 | 8 - 2 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 8 | 20 - 5 | 6 - 10 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 1 | 6 - 6 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 2 |
| | Norway Spruce - Finland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 6 | 6 - 8 | 10 - 6 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 1 | 6 - 6 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 8 | 20 - 5 | 6 - 10 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Norway | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 17 - 11 | 20 - 10 |
| | | No. 1 | 6 - 8 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 5 | 6 - 5 | 8 - 2 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 20 - 11 | 6 - 8 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 6 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Sweden | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 0 | 20 - 11 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 4 | 21 - 3 | 7 - 0 | 10 - 7 | 13 - 5 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 8 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 2 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 3 | 20 - 0 | 6 - 8 | 10 - 0 | 12 - 8 | 15 - 5 | 17 - 11 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Scots Pine - Finland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 8 | 21 - 3 | 6 - 8 | 10 - 6 | 13 - 5 | 16 - 5 | 19 - 1 |
| | | No. 1 | 6 - 6 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 6 - 4 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 1 | 8 - 11 | 11 - 4 | 13 - 10 | 16 - 1 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 5 | 12 - 1 |
| | Scots Pine - Germany | SS | 6 - 10 | 10 - 9 | 14 - 2 | 17 - 8 | 20 - 5 | 6 - 10 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 4 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 14 - 11 |
| | | No. 2 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 1 | 14 - 0 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 |
| | Scots Pine - Sweden | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 5 | 21 - 8 | 7 - 0 | 10 - 10 | 13 - 8 | 16 - 9 | 19 - 5 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 5 - 9 | 8 - 5 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 6 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 8 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 1 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 8 - 2 | 12 - 10 | 16 - 10 | 21 - 6 | 26 - 0* | 8 - 2 | 12 - 10 | 16 - 10 | 21 - 1 | 24 - 5 |
| | | No. 1 | 8 - 0 | 12 - 0 | 15 - 3 | 18 - 7 | 21 - 7 | 7 - 7 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 2 | 7 - 10 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 4 | 10 - 8 | 13 - 7 | 16 - 7 | 19 - 2 |
| | | No. 3 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Douglas Fir - France & Germany | SS | 8 - 5 | 13 - 3 | 17 - 6 | 22 - 4 | 26 - 0* | 8 - 5 | 13 - 3 | 17 - 3 | 21 - 1 | 24 - 5 |
| | | No. 1 | 8 - 1 | 11 - 10 | 15 - 0 | 18 - 4 | 21 - 3 | 7 - 6 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 9 |
| | | No. 2 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 3 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 4 | 23 - 7 | 8 - 0 | 12 - 2 | 15 - 5 | 18 - 10 | 21 - 10 |
| | | No. 1 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 2 | 19 - 11 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | | No. 2 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | Norway Spruce - Finland | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 25 - 1 | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 0 | 23 - 2 |
| | | No. 1 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 2 | 19 - 11 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | | No. 2 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 4 | 23 - 7 | 8 - 0 | 12 - 2 | 15 - 5 | 18 - 10 | 21 - 10 |
| | | No. 1 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 4 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Norway Spruce - Norway | SS | 8 - 4 | 13 - 1 | 17 - 2 | 21 - 11 | 26 - 0* | 8 - 4 | 13 - 1 | 17 - 2 | 21 - 5 | 24 - 10 |
| | | No. 1 | 7 - 10 | 12 - 0 | 15 - 3 | 18 - 7 | 21 - 7 | 7 - 7 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 2 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 3 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 24 - 1 | 7 - 10 | 12 - 3 | 15 - 9 | 19 - 3 | 22 - 4 |
| | | No. 1 | 7 - 7 | 11 - 1 | 14 - 0 | 17 - 2 | 19 - 11 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | | No. 2 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Norway Spruce - Sweden | SS | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 9 | 24 - 1 | 8 - 0 | 12 - 5 | 15 - 9 | 19 - 3 | 22 - 4 |
| | | No. 1 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 8 - 2 | 12 - 10 | 16 - 10 | 21 - 2 | 24 - 7 | 8 - 2 | 12 - 8 | 16 - 1 | 19 - 8 | 22 - 9 |
| | | No. 1 | 7 - 10 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 3 | 10 - 7 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 2 | 7 - 3 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 8 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 10 | 12 - 3 | 16 - 2 | 19 - 11 | 23 - 1 | 7 - 10 | 11 - 11 | 15 - 1 | 18 - 6 | 21 - 5 |
| | | No. 1 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 2 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Scots Pine - Finland | SS | 7 - 10 | 12 - 3 | 16 - 2 | 20 - 8 | 24 - 7 | 7 - 10 | 12 - 3 | 16 - 1 | 19 - 8 | 22 - 9 |
| | | No. 1 | 7 - 8 | 11 - 9 | 14 - 10 | 18 - 1 | 21 - 0 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 5 |
| | | No. 2 | 7 - 5 | 11 - 7 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 4 | 10 - 8 | 13 - 7 | 16 - 7 | 19 - 2 |
| | | No. 3 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Scots Pine - Germany | SS | 8 - 0 | 12 - 6 | 16 - 6 | 20 - 4 | 23 - 7 | 8 - 0 | 12 - 2 | 15 - 5 | 18 - 10 | 21 - 10 |
| | | No. 1 | 7 - 4 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 2 | 6 - 10 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 0 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | Scots Pine - Sweden | SS | 8 - 2 | 12 - 10 | 16 - 10 | 21 - 6 | 25 - 1 | 8 - 2 | 12 - 10 | 16 - 4 | 20 - 0 | 23 - 2 |
| | | No. 1 | 7 - 6 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 6 - 3 | 9 - 1 | 11 - 7 | 14 - 1 | 16 - 4 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 10 | 11 - 5 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 10 | 11 - 9 | 14 - 10 | 18 - 1 | 21 - 0 | 7 - 5 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 5 |
| | | No. 1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 4 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 4 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 22 - 10 | 7 - 5 | 11 - 8 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 2 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 4 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 8 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Douglas Fir - France & Germany | SS | 7 - 8 | 12 - 1 | 15 - 11 | 19 - 9 | 22 - 10 | 7 - 8 | 11 - 10 | 14 - 11 | 18 - 3 | 21 - 2 |
| | | No. 1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 2 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 6 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 3 | 10 - 7 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 |
| | Norway Spruce - Finland | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 21 - 8 | 7 - 1 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 3 | 10 - 7 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |
| | Norway Spruce - Norway | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 11 | 23 - 3 | 7 - 6 | 11 - 10 | 15 - 2 | 18 - 7 | 21 - 6 |
| | | No. 1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 6 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 0 | 20 - 11 | 7 - 1 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |
| | Norway Spruce - Sweden | SS | 7 - 3 | 11 - 5 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 3 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 10 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 5 | 11 - 8 | 15 - 0 | 18 - 4 | 21 - 3 | 7 - 5 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 9 |
| | | No. 1 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 3 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 1 | 11 - 2 | 14 - 2 | 17 - 3 | 20 - 0 | 7 - 1 | 10 - 4 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |
| | Scots Pine - Finland | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 4 | 21 - 3 | 7 - 1 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 9 |
| | | No. 1 | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 2 | 6 - 9 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 4 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 8 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Scots Pine - Germany | SS | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 3 | 10 - 7 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 2 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 10 - 11 |
| | Scots Pine - Sweden | SS | 7 - 5 | 11 - 8 | 15 - 4 | 18 - 9 | 21 - 8 | 7 - 5 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 1 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 0 | 10 - 11 | 14 - 5 | 18 - 0 | 20 - 11 | 7 - 0 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Douglas Fir - France & Germany | SS | 7 - 3 | 11 - 4 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 3 | 10 - 9 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 9 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | Norway Spruce - Finland | SS | 6 - 8 | 10 - 6 | 13 - 10 | 17 - 1 | 19 - 10 | 6 - 8 | 10 - 3 | 12 - 11 | 15 - 10 | 18 - 4 |
| | | No. 1 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 2 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 6 | 4 - 9 | 6 - 11 | 8 - 10 | 10 - 9 | 12 - 6 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Norway | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 4 | 21 - 3 | 7 - 1 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 8 |
| | | No. 1 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 9 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 8 | 10 - 6 | 13 - 5 | 16 - 5 | 19 - 1 | 6 - 8 | 9 - 10 | 12 - 5 | 15 - 3 | 17 - 8 |
| | | No. 1 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Sweden | SS | 6 - 10 | 10 - 7 | 13 - 5 | 16 - 5 | 19 - 1 | 6 - 9 | 9 - 10 | 12 - 5 | 15 - 3 | 17 - 8 |
| | | No. 1 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 0 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 5 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 2 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 8 | 10 - 2 | 12 - 11 | 15 - 9 | 18 - 3 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 7 | 16 - 11 |
| | | No. 1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Scots Pine - Finland | SS | 6 - 8 | 10 - 6 | 13 - 9 | 16 - 9 | 19 - 5 | 6 - 8 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 1 | 6 - 4 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 7 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Scots Pine - Germany | SS | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |
| | Scots Pine - Sweden | SS | 7 - 0 | 10 - 11 | 14 - 0 | 17 - 1 | 19 - 10 | 7 - 0 | 10 - 3 | 12 - 11 | 15 - 10 | 18 - 4 |
| | | No. 1 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 2 | 4 - 11 | 7 - 2 | 9 - 2 | 11 - 2 | 12 - 11 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 5 | 9 - 9 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 4 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 7 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 6 | 10 - 2 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 6 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Douglas Fir - France & Germany | SS | 6 - 8 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 5 | 9 - 9 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | | No. 2 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 7 | 5 - 3 | 6 - 8 | 8 - 2 | 9 - 6 |
| | Norway Spruce - Finland | SS | 6 - 2 | 9 - 9 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 2 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | | No. 2 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| | | No. 3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |
| | Norway Spruce - Norway | SS | 6 - 7 | 10 - 4 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 7 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 5 | 9 - 9 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 2 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 5 - 9 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |
| | Norway Spruce - Sweden | SS | 6 - 4 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 1 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 |
| | | No. 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 8 | 8 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 6 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 | 6 - 2 | 9 - 0 | 11 - 4 | 13 - 11 | 16 - 1 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | | No. 2 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 7 | 5 - 3 | 6 - 8 | 8 - 2 | 9 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 2 | 9 - 1 | 11 - 7 | 14 - 1 | 16 - 4 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |
| | Scots Pine - Finland | SS | 6 - 2 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 | 6 - 2 | 9 - 0 | 11 - 4 | 13 - 11 | 16 - 1 |
| | | No. 1 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 2 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Scots Pine - Germany | SS | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | | No. 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 8 | 8 - 11 |
| | Scots Pine - Sweden | SS | 6 - 6 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 1 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 5 | 6 - 5 | 8 - 2 | 10 - 0 | 11 - 7 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 |
| | | No. 3 | 3 - 4 | 4 - 10 | 6 - 2 | 7 - 6 | 8 - 8 | 3 - 1 | 4 - 6 | 5 - 8 | 6 - 11 | 8 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 1 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | | No. 2 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 23 - 9 | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 23 - 9 |
| | | No. 1 | 7 - 3 | 11 - 5 | 15 - 0 | 18 - 7 | 21 - 7 | 7 - 3 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 2 | 7 - 1 | 11 - 2 | 14 - 8 | 17 - 11 | 20 - 9 | 7 - 1 | 10 - 8 | 13 - 7 | 16 - 7 | 19 - 2 |
| | | No. 3 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Douglas Fir - France & Germany | SS | 7 - 8 | 12 - 1 | 15 - 11 | 20 - 3 | 24 - 8 | 7 - 8 | 12 - 1 | 15 - 11 | 20 - 3 | 24 - 5 |
| | | No. 1 | 7 - 5 | 11 - 8 | 15 - 0 | 18 - 4 | 21 - 3 | 7 - 5 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 9 |
| | | No. 2 | 7 - 1 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 3 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 2 | 23 - 4 | 7 - 3 | 11 - 5 | 15 - 0 | 18 - 10 | 21 - 10 |
| | | No. 1 | 6 - 11 | 10 - 11 | 14 - 0 | 17 - 2 | 19 - 11 | 6 - 11 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | | No. 2 | 6 - 9 | 10 - 8 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | Norway Spruce - Finland | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 |
| | | No. 1 | 6 - 11 | 10 - 11 | 14 - 0 | 17 - 2 | 19 - 11 | 6 - 11 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | | No. 2 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 2 | 23 - 4 | 7 - 3 | 11 - 5 | 15 - 0 | 18 - 10 | 21 - 10 |
| | | No. 1 | 6 - 11 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 6 - 7 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 4 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Norway Spruce - Norway | SS | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 11 | 24 - 3 | 7 - 6 | 11 - 10 | 15 - 7 | 19 - 11 | 24 - 3 |
| | | No. 1 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 7 | 21 - 7 | 7 - 1 | 11 - 2 | 14 - 1 | 17 - 3 | 20 - 0 |
| | | No. 2 | 6 - 9 | 10 - 8 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 9 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 3 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 4 |
| | | No. 1 | 6 - 11 | 10 - 11 | 14 - 0 | 17 - 2 | 19 - 11 | 6 - 11 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 5 |
| | | No. 2 | 6 - 7 | 10 - 4 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Norway Spruce - Sweden | SS | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 2 | 23 - 4 | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 2 | 22 - 4 |
| | | No. 1 | 6 - 11 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 6 - 7 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 23 - 9 | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 22 - 9 |
| | | No. 1 | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 3 | 10 - 7 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 2 | 6 - 11 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 | 6 - 8 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 3 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 6 | 21 - 5 |
| | | No. 1 | 6 - 11 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 2 | 6 - 7 | 10 - 4 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | Scots Pine - Finland | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 10 | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 9 | 22 - 9 |
| | | No. 1 | 6 - 11 | 10 - 11 | 14 - 4 | 18 - 1 | 21 - 0 | 6 - 11 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 5 |
| | | No. 2 | 6 - 9 | 10 - 8 | 14 - 0 | 17 - 11 | 20 - 9 | 6 - 9 | 10 - 8 | 13 - 7 | 16 - 7 | 19 - 2 |
| | | No. 3 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | Scots Pine - Germany | SS | 7 - 3 | 11 - 5 | 15 - 0 | 19 - 2 | 23 - 4 | 7 - 3 | 11 - 5 | 15 - 0 | 18 - 10 | 21 - 10 |
| | | No. 1 | 6 - 11 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 | 6 - 10 | 9 - 11 | 12 - 7 | 15 - 5 | 17 - 10 |
| | | No. 2 | 6 - 5 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 0 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | Scots Pine - Sweden | SS | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 23 - 9 | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 23 - 2 |
| | | No. 1 | 7 - 1 | 10 - 11 | 13 - 10 | 16 - 11 | 19 - 7 | 6 - 11 | 10 - 1 | 12 - 10 | 15 - 8 | 18 - 2 |
| | | No. 2 | 6 - 3 | 9 - 1 | 11 - 7 | 14 - 1 | 16 - 4 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 10 | 11 - 5 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 7 - 1 | 11 - 2 | 14 - 8 | 18 - 1 | 21 - 0 | 7 - 1 | 10 - 10 | 13 - 9 | 16 - 9 | 19 - 5 |
| | | No. 1 | 6 - 11 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 4 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 2 | 6 - 9 | 10 - 3 | 13 - 0 | 15 - 10 | 18 - 4 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 0 |
| | | No. 3 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 9 | 10 - 7 | 13 - 11 | 17 - 9 | 21 - 7 | 6 - 9 | 10 - 7 | 13 - 11 | 17 - 9 | 21 - 2 |
| | | No. 1 | 6 - 7 | 10 - 4 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 7 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 2 | 6 - 5 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 4 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 8 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Douglas Fir - France & Germany | SS | 7 - 0 | 11 - 0 | 14 - 5 | 18 - 5 | 22 - 5 | 7 - 0 | 11 - 0 | 14 - 5 | 18 - 3 | 21 - 2 |
| | | No. 1 | 6 - 9 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 6 | 9 - 6 | 12 - 1 | 14 - 9 | 17 - 1 |
| | | No. 2 | 6 - 5 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 6 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20 - 5 | 6 - 7 | 10 - 4 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 1 | 6 - 4 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 6 - 2 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 |
| | Norway Spruce - Finland | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 1 |
| | | No. 1 | 6 - 4 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20 - 5 | 6 - 7 | 10 - 4 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 1 | 6 - 4 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 2 | 6 - 0 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |
| | Norway Spruce - Norway | SS | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 1 | 22 - 0 | 6 - 10 | 10 - 9 | 14 - 2 | 18 - 1 | 21 - 6 |
| | | No. 1 | 6 - 5 | 10 - 2 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 5 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 2 | 6 - 2 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 6 | 6 - 8 | 8 - 5 | 10 - 3 | 11 - 11 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 | 6 - 5 | 10 - 2 | 13 - 4 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 4 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 15 - 11 |
| | | No. 2 | 6 - 0 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |
| | Norway Spruce - Sweden | SS | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20 - 11 | 6 - 7 | 10 - 4 | 13 - 8 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 4 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 10 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 9 | 10 - 7 | 13 - 11 | 17 - 9 | 21 - 3 | 6 - 9 | 10 - 7 | 13 - 11 | 17 - 0 | 19 - 9 |
| | | No. 1 | 6 - 7 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 3 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 0 | 6 - 5 | 10 - 2 | 13 - 1 | 16 - 0 | 18 - 6 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 2 | 6 - 0 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |
| | Scots Pine - Finland | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 19 - 9 |
| | | No. 1 | 6 - 4 | 9 - 11 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 4 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 2 | 6 - 2 | 9 - 8 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 2 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 8 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | Scots Pine - Germany | SS | 6 - 7 | 10 - 4 | 13 - 8 | 17 - 5 | 20 - 5 | 6 - 7 | 10 - 4 | 13 - 4 | 16 - 4 | 18 - 11 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 11 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 2 | 5 - 10 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 10 - 11 |
| | Scots Pine - Sweden | SS | 6 - 9 | 10 - 7 | 13 - 11 | 17 - 9 | 21 - 7 | 6 - 9 | 10 - 7 | 13 - 11 | 17 - 4 | 20 - 1 |
| | | No. 1 | 6 - 5 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 6 | 15 - 8 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 0 | 7 - 4 | 9 - 3 | 11 - 4 | 13 - 1 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 5 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 |
| | | No. 1 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 7 | 8 - 2 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 3 | 7 - 11 | 9 - 9 | 11 - 3 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 20 - 4 | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 2 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 2 | 6 - 1 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Douglas Fir - France & Germany | SS | 6 - 7 | 10 - 4 | 13 - 7 | 17 - 4 | 20 - 11 | 6 - 7 | 10 - 4 | 13 - 7 | 16 - 8 | 19 - 4 |
| | | No. 1 | 6 - 4 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 2 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 9 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 1 | 18 - 8 | 6 - 2 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 11 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 2 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | Norway Spruce - Finland | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 6 | 6 - 1 | 9 - 6 | 12 - 7 | 15 - 10 | 18 - 4 |
| | | No. 1 | 5 - 11 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 2 | 5 - 2 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 6 | 4 - 9 | 6 - 11 | 8 - 10 | 10 - 9 | 12 - 6 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 1 | 18 - 8 | 6 - 2 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Norway | SS | 6 - 5 | 10 - 2 | 13 - 4 | 17 - 0 | 20 - 9 | 6 - 5 | 10 - 2 | 13 - 4 | 16 - 11 | 19 - 8 |
| | | No. 1 | 6 - 1 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 2 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 9 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 5 | 10 - 11 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 1 | 6 - 1 | 9 - 6 | 12 - 5 | 15 - 3 | 17 - 8 |
| | | No. 1 | 5 - 11 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 | 5 - 7 | 8 - 1 | 10 - 3 | 12 - 7 | 14 - 7 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Sweden | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 5 | 19 - 1 | 6 - 2 | 9 - 9 | 12 - 5 | 15 - 3 | 17 - 8 |
| | | No. 1 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 19 - 5 | 6 - 4 | 9 - 11 | 12 - 8 | 15 - 6 | 18 - 0 |
| | | No. 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 8 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 2 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 1 | 9 - 6 | 12 - 7 | 15 - 9 | 18 - 3 | 6 - 1 | 9 - 5 | 11 - 11 | 14 - 7 | 16 - 11 |
| | | No. 1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Scots Pine - Finland | SS | 6 - 1 | 9 - 6 | 12 - 7 | 16 - 0 | 19 - 5 | 6 - 1 | 9 - 6 | 12 - 7 | 15 - 6 | 18 - 0 |
| | | No. 1 | 5 - 11 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 7 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 2 | 5 - 9 | 9 - 1 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 1 | 15 - 2 |
| | | No. 3 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | Scots Pine - Germany | SS | 6 - 2 | 9 - 9 | 12 - 10 | 16 - 1 | 18 - 8 | 6 - 2 | 9 - 8 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 4 | 14 - 3 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 7 | 10 - 0 |
| | Scots Pine - Sweden | SS | 6 - 4 | 9 - 11 | 13 - 1 | 16 - 9 | 19 - 10 | 6 - 4 | 9 - 11 | 12 - 11 | 15 - 10 | 18 - 4 |
| | | No. 1 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 | 5 - 6 | 8 - 0 | 10 - 1 | 12 - 4 | 14 - 4 |
| | | No. 2 | 4 - 11 | 7 - 2 | 9 - 2 | 11 - 2 | 12 - 11 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 5 | 9 - 9 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 1 | 9 - 3 | 11 - 9 | 14 - 4 | 16 - 7 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 5 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 1 | 3 - 11 | 5 - 9 | 7 - 3 | 8 - 10 | 10 - 3 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 50 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 5 - 10 | 9 - 3 | 12 - 2 | 15 - 6 | 18 - 8 | 5 - 10 | 9 - 3 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Douglas Fir - France & Germany | SS | 6 - 1 | 9 - 7 | 12 - 7 | 16 - 1 | 18 - 8 | 6 - 1 | 9 - 7 | 12 - 2 | 14 - 11 | 17 - 3 |
| | | No. 1 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 5 | 9 - 9 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 5 - 9 | 9 - 1 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 9 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | | No. 2 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 7 | 5 - 3 | 6 - 8 | 8 - 2 | 9 - 6 |
| | Norway Spruce - Finland | SS | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 17 - 9 | 5 - 8 | 8 - 10 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | | No. 2 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 7 | 11 - 2 |
| | | No. 3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 8 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 5 - 9 | 9 - 1 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 9 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |
| | Norway Spruce - Norway | SS | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 10 | 19 - 0 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 1 | 5 - 8 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 | 5 - 5 | 7 - 10 | 10 - 0 | 12 - 2 | 14 - 1 |
| | | No. 2 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 5 | 9 - 9 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 8 | 17 - 1 | 5 - 8 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |
| | Norway Spruce - Sweden | SS | 5 - 9 | 9 - 1 | 11 - 11 | 14 - 8 | 17 - 1 | 5 - 9 | 8 - 10 | 11 - 2 | 13 - 7 | 15 - 9 |
| | | No. 1 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 |
| | | No. 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 8 | 8 - 11 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 5 - 10 | 9 - 3 | 12 - 2 | 15 - 0 | 17 - 5 | 5 - 10 | 9 - 0 | 11 - 4 | 13 - 11 | 16 - 1 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | | No. 2 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 7 | 5 - 3 | 6 - 8 | 8 - 2 | 9 - 6 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 8 | 8 - 10 | 11 - 7 | 14 - 1 | 16 - 4 | 5 - 8 | 8 - 5 | 10 - 8 | 13 - 1 | 15 - 2 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |
| | Scots Pine - Finland | SS | 5 - 8 | 8 - 10 | 11 - 8 | 14 - 11 | 17 - 5 | 5 - 8 | 8 - 10 | 11 - 4 | 13 - 11 | 16 - 1 |
| | | No. 1 | 5 - 6 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 2 | 5 - 4 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 3 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Scots Pine - Germany | SS | 5 - 9 | 9 - 1 | 11 - 9 | 14 - 5 | 16 - 8 | 5 - 9 | 8 - 7 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 | 4 - 10 | 7 - 0 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | | No. 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 8 | 8 - 11 |
| | Scots Pine - Sweden | SS | 5 - 10 | 9 - 3 | 12 - 2 | 15 - 3 | 17 - 9 | 5 - 10 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 |
| | | No. 1 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 5 | 6 - 5 | 8 - 2 | 10 - 0 | 11 - 7 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 |
| | | No. 3 | 3 - 4 | 4 - 10 | 6 - 2 | 7 - 6 | 8 - 8 | 3 - 1 | 4 - 6 | 5 - 8 | 6 - 11 | 8 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 |
| | | No. 1 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | | No. 2 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 2 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 7 - 3 | 11 - 5 | 15 - 1 | 19 - 3 | 22 - 10 | 7 - 3 | 11 - 5 | 15 - 1 | 18 - 7 | 21 - 7 |
| | | No. 1 | 7 - 1 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 8 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 2 | 6 - 10 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 7 | 16 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Douglas Fir - France & Germany | SS | 7 - 7 | 11 - 10 | 15 - 8 | 19 - 9 | 22 - 10 | 7 - 7 | 11 - 10 | 15 - 3 | 18 - 7 | 21 - 7 |
| | | No. 1 | 7 - 0 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 7 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 |
| | | No. 2 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 7 - 2 | 11 - 3 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 2 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Norway Spruce - Finland | SS | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 5 | 21 - 8 | 7 - 0 | 11 - 0 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 7 - 2 | 11 - 3 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 2 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Norway | SS | 7 - 5 | 11 - 8 | 15 - 4 | 19 - 7 | 23 - 3 | 7 - 5 | 11 - 8 | 15 - 4 | 18 - 11 | 21 - 11 |
| | | No. 1 | 7 - 0 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 8 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 2 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Romania & Ukraine | SS | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 0 | 20 - 11 | 7 - 0 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 1 | 6 - 7 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Sweden | SS | 7 - 2 | 11 - 3 | 14 - 9 | 18 - 0 | 20 - 11 | 7 - 2 | 11 - 0 | 13 - 11 | 17 - 0 | 19 - 8 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 7 - 3 | 11 - 5 | 15 - 0 | 18 - 4 | 21 - 3 | 7 - 3 | 11 - 2 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 1 | 6 - 9 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 3 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 7 - 0 | 11 - 0 | 14 - 2 | 17 - 3 | 20 - 0 | 7 - 0 | 10 - 6 | 13 - 4 | 16 - 3 | 18 - 11 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Scots Pine - Finland | SS | 7 - 0 | 11 - 0 | 14 - 6 | 18 - 4 | 21 - 3 | 7 - 0 | 11 - 0 | 14 - 2 | 17 - 4 | 20 - 1 |
| | | No. 1 | 6 - 10 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 10 | 17 - 2 |
| | | No. 2 | 6 - 8 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 5 | 9 - 5 | 11 - 11 | 14 - 7 | 16 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Scots Pine - Germany | SS | 7 - 2 | 11 - 3 | 14 - 5 | 17 - 8 | 20 - 5 | 7 - 2 | 10 - 9 | 13 - 7 | 16 - 8 | 19 - 3 |
| | | No. 1 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 2 | 5 - 11 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 7 | 8 - 3 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | Scots Pine - Sweden | SS | 7 - 3 | 11 - 5 | 15 - 1 | 18 - 9 | 21 - 8 | 7 - 3 | 11 - 5 | 14 - 5 | 17 - 8 | 20 - 5 |
| | | No. 1 | 6 - 6 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 0 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 11 | 10 - 2 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 6 | 9 - 7 | 12 - 1 | 14 - 10 | 17 - 2 |
| | | No. 1 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 7 | 10 - 5 | 13 - 8 | 17 - 1 | 19 - 10 | 6 - 7 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 2 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | | No. 3 | 4 - 6 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 9 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 |
| | Douglas Fir - France & Germany | SS | 6 - 10 | 10 - 9 | 14 - 0 | 17 - 1 | 19 - 10 | 6 - 10 | 10 - 5 | 13 - 2 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 2 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 3 | 4 - 3 | 6 - 3 | 7 - 10 | 9 - 7 | 11 - 2 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 6 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 1 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 4 | 10 - 10 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Finland | SS | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 2 | 18 - 9 | 6 - 4 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 1 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | | No. 2 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 6 | 9 - 11 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 6 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Norway Spruce - Norway | SS | 6 - 9 | 10 - 7 | 14 - 0 | 17 - 4 | 20 - 2 | 6 - 9 | 10 - 7 | 13 - 5 | 16 - 4 | 19 - 0 |
| | | No. 1 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 3 | 6 - 3 | 7 - 10 | 9 - 7 | 11 - 2 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 4 | 10 - 0 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 4 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | | No. 2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Norway Spruce - Sweden | SS | 6 - 6 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 2 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 5 | 13 - 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 7 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 7 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 3 | 14 - 3 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 4 | 10 - 10 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 4 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 | 6 - 3 | 9 - 1 | 11 - 7 | 14 - 1 | 16 - 4 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Scots Pine - Finland | SS | 6 - 4 | 10 - 0 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 4 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 |
| | | No. 1 | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 |
| | | No. 2 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | | No. 3 | 4 - 6 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 9 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 |
| | Scots Pine - Germany | SS | 6 - 6 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 |
| | Scots Pine - Sweden | SS | 6 - 7 | 10 - 5 | 13 - 3 | 16 - 2 | 18 - 9 | 6 - 7 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 | 4 - 5 | 6 - 5 | 8 - 2 | 10 - 0 | 11 - 7 |
| | | No. 3 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 3 | 3 - 4 | 4 - 10 | 6 - 2 | 7 - 6 | 8 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 0 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 |
| | | No. 1 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 3 | 9 - 9 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 3 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Douglas Fir - France & Germany | SS | 6 - 6 | 10 - 1 | 12 - 9 | 15 - 7 | 18 - 1 | 6 - 6 | 9 - 6 | 12 - 0 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 3 | 12 - 7 | 14 - 7 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | | No. 2 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 1 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 6 | 9 - 11 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 |
| | Norway Spruce - Finland | SS | 6 - 0 | 9 - 5 | 12 - 1 | 14 - 10 | 17 - 2 | 6 - 0 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |
| | | No. 3 | 3 - 5 | 5 - 0 | 6 - 5 | 7 - 10 | 9 - 0 | 3 - 3 | 4 - 9 | 6 - 0 | 7 - 4 | 8 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 1 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 3 | 11 - 10 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |
| | Norway Spruce - Norway | SS | 6 - 4 | 10 - 0 | 13 - 0 | 15 - 10 | 18 - 5 | 6 - 4 | 9 - 8 | 12 - 3 | 14 - 11 | 17 - 4 |
| | | No. 1 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 0 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 7 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |
| | Norway Spruce - Sweden | SS | 6 - 1 | 9 - 2 | 11 - 8 | 14 - 3 | 16 - 6 | 5 - 11 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 1 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | | No. 3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 3 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 6 - 1 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 2 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 6 | 9 - 11 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |
| | Scots Pine - Finland | SS | 6 - 0 | 9 - 5 | 11 - 11 | 14 - 6 | 16 - 10 | 6 - 0 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 1 | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Scots Pine - Germany | SS | 6 - 1 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | | No. 3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |
| | Scots Pine - Sweden | SS | 6 - 3 | 9 - 7 | 12 - 1 | 14 - 10 | 17 - 2 | 6 - 2 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 1 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 2 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 |
| | | No. 3 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 3 | 8 - 5 | 3 - 0 | 4 - 5 | 5 - 7 | 6 - 10 | 7 - 11 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 6 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 1 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 3 | 11 - 10 |
| | | No. 2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 3 | 11 - 10 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling not attached to rafters, L/Δ = 180 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 5 - 9 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Douglas Fir - France & Germany | SS | 6 - 0 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | | No. 2 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 3 | 3 - 6 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 | 3 - 3 | 4 - 9 | 6 - 1 | 7 - 5 | 8 - 7 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 1 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | | No. 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 3 | 3 - 5 | 4 - 11 | 6 - 3 | 7 - 8 | 8 - 10 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 |
| | Norway Spruce - Finland | SS | 5 - 6 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 1 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | | No. 2 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | | No. 3 | 3 - 1 | 4 - 6 | 5 - 8 | 7 - 0 | 8 - 1 | 2 - 11 | 4 - 3 | 5 - 5 | 6 - 7 | 7 - 7 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 1 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 2 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |
| | Norway Spruce - Norway | SS | 5 - 9 | 9 - 1 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 3 | 3 - 6 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 | 3 - 3 | 4 - 9 | 6 - 1 | 7 - 5 | 8 - 7 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 0 | 7 - 11 | 10 - 5 | 12 - 9 | 14 - 9 | 4 - 6 | 7 - 0 | 9 - 3 | 11 - 10 | 13 - 11 |
| | | No. 1 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | | No. 2 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |
| | Norway Spruce - Sweden | SS | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 1 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 4 | 10 - 10 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | | No. 3 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 | 3 - 0 | 4 - 5 | 5 - 7 | 6 - 9 | 7 - 10 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 1 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | | No. 2 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 11 - 0 |
| | | No. 3 | 3 - 5 | 4 - 11 | 6 - 3 | 7 - 8 | 8 - 10 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | | No. 1 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 2 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |
| | Scots Pine - Finland | SS | 5 - 6 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 1 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | | No. 2 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Scots Pine - Germany | SS | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 1 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 2 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 |
| | | No. 3 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 | 3 - 0 | 4 - 5 | 5 - 7 | 6 - 9 | 7 - 10 |
| | Scots Pine - Sweden | SS | 5 - 9 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 4 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 1 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 2 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 0 | 3 - 7 | 5 - 3 | 6 - 8 | 8 - 2 | 9 - 5 |
| | | No. 3 | 2 - 10 | 4 - 2 | 5 - 4 | 6 - 6 | 7 - 6 | 2 - 8 | 3 - 11 | 5 - 0 | 6 - 1 | 7 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | | No. 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | | No. 2 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 12 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 7 | 10 - 5 | 13 - 8 | 17 - 6 | 21 - 3 | 6 - 7 | 10 - 5 | 13 - 8 | 17 - 6 | 21 - 3 |
| | | No. 1 | 6 - 6 | 10 - 2 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 6 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 2 | 6 - 4 | 10 - 0 | 12 - 8 | 15 - 6 | 18 - 0 | 6 - 4 | 9 - 5 | 11 - 11 | 14 - 7 | 16 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Douglas Fir - France & Germany | SS | 6 - 10 | 10 - 9 | 14 - 3 | 18 - 2 | 22 - 1 | 6 - 10 | 10 - 9 | 14 - 3 | 18 - 2 | 21 - 7 |
| | | No. 1 | 6 - 7 | 10 - 3 | 13 - 0 | 15 - 11 | 18 - 5 | 6 - 7 | 9 - 8 | 12 - 3 | 15 - 0 | 17 - 5 |
| | | No. 2 | 6 - 4 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 2 | 20 - 5 | 6 - 6 | 10 - 2 | 13 - 5 | 16 - 8 | 19 - 3 |
| | | No. 1 | 6 - 2 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 6 - 1 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Norway Spruce - Finland | SS | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 20 - 5 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 20 - 5 |
| | | No. 1 | 6 - 2 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 5 - 8 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 3 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 2 | 20 - 5 | 6 - 6 | 10 - 2 | 13 - 5 | 16 - 8 | 19 - 3 |
| | | No. 1 | 6 - 2 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 2 | 5 - 11 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Norway | SS | 6 - 9 | 10 - 7 | 14 - 0 | 17 - 10 | 21 - 8 | 6 - 9 | 10 - 7 | 14 - 0 | 17 - 10 | 21 - 8 |
| | | No. 1 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 1 | 18 - 8 | 6 - 4 | 9 - 10 | 12 - 5 | 15 - 2 | 17 - 7 |
| | | No. 2 | 6 - 1 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 3 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | Norway Spruce - Romania & Ukraine | SS | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 20 - 5 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 19 - 8 |
| | | No. 1 | 6 - 2 | 9 - 7 | 12 - 2 | 14 - 10 | 17 - 3 | 6 - 2 | 9 - 1 | 11 - 6 | 14 - 0 | 16 - 3 |
| | | No. 2 | 5 - 11 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Norway Spruce - Sweden | SS | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 2 | 20 - 10 | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 0 | 19 - 8 |
| | | No. 1 | 6 - 2 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 2 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 7 | 10 - 5 | 13 - 8 | 17 - 6 | 21 - 3 | 6 - 7 | 10 - 5 | 13 - 8 | 17 - 4 | 20 - 1 |
| | | No. 1 | 6 - 6 | 9 - 10 | 12 - 6 | 15 - 3 | 17 - 9 | 6 - 4 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 2 | 6 - 2 | 9 - 2 | 11 - 7 | 14 - 2 | 16 - 5 | 5 - 11 | 8 - 8 | 10 - 11 | 13 - 4 | 15 - 6 |
| | | No. 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 20 - 0 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 3 | 18 - 11 |
| | | No. 1 | 6 - 2 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 2 | 5 - 11 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | Scots Pine - Finland | SS | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 20 - 5 | 6 - 4 | 10 - 0 | 13 - 2 | 16 - 9 | 20 - 1 |
| | | No. 1 | 6 - 2 | 9 - 9 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 2 | 9 - 7 | 12 - 1 | 14 - 10 | 17 - 2 |
| | | No. 2 | 6 - 1 | 9 - 6 | 12 - 6 | 15 - 6 | 18 - 0 | 6 - 1 | 9 - 5 | 11 - 11 | 14 - 7 | 16 - 11 |
| | | No. 3 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | Scots Pine - Germany | SS | 6 - 6 | 10 - 2 | 13 - 5 | 17 - 2 | 20 - 5 | 6 - 6 | 10 - 2 | 13 - 5 | 16 - 8 | 19 - 3 |
| | | No. 1 | 6 - 2 | 9 - 4 | 11 - 9 | 14 - 5 | 16 - 8 | 6 - 0 | 8 - 9 | 11 - 1 | 13 - 7 | 15 - 9 |
| | | No. 2 | 5 - 9 | 8 - 9 | 11 - 0 | 13 - 6 | 15 - 7 | 5 - 7 | 8 - 3 | 10 - 5 | 12 - 8 | 14 - 9 |
| | | No. 3 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | Scots Pine - Sweden | SS | 6 - 7 | 10 - 5 | 13 - 8 | 17 - 6 | 21 - 3 | 6 - 7 | 10 - 5 | 13 - 8 | 17 - 6 | 20 - 5 |
| | | No. 1 | 6 - 4 | 9 - 5 | 12 - 0 | 14 - 8 | 17 - 0 | 6 - 1 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | | No. 3 | 4 - 1 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 0 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 6 - 4 | 10 - 0 | 12 - 10 | 15 - 8 | 18 - 2 | 6 - 4 | 9 - 7 | 12 - 1 | 14 - 10 | 17 - 2 |
| | | No. 1 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 2 | 6 - 1 | 8 - 10 | 11 - 3 | 13 - 9 | 15 - 11 | 5 - 9 | 8 - 4 | 10 - 7 | 12 - 11 | 15 - 0 |
| | | No. 3 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 16 | Austrian Spruce - Austria & The Czech Republic | SS | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 11 | 19 - 4 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 11 | 18 - 8 |
| | | No. 1 | 5 - 11 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 10 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 2 | 5 - 9 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | | No. 3 | 4 - 6 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 9 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 |
| | Douglas Fir - France & Germany | SS | 6 - 3 | 9 - 10 | 12 - 11 | 16 - 6 | 19 - 10 | 6 - 3 | 9 - 10 | 12 - 11 | 16 - 1 | 18 - 8 |
| | | No. 1 | 6 - 0 | 8 - 11 | 11 - 3 | 13 - 9 | 16 - 0 | 5 - 9 | 8 - 5 | 10 - 8 | 13 - 0 | 15 - 1 |
| | | No. 2 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 3 | 4 - 3 | 6 - 3 | 7 - 10 | 9 - 7 | 11 - 2 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 3 | 17 - 9 | 5 - 11 | 9 - 3 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 1 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 4 | 10 - 10 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Norway Spruce - Finland | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 3 | 18 - 6 | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 3 | 17 - 9 |
| | | No. 1 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | | No. 2 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 6 | 9 - 11 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 3 | 17 - 9 | 5 - 11 | 9 - 3 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Norway Spruce - Norway | SS | 6 - 1 | 9 - 7 | 12 - 8 | 16 - 2 | 19 - 8 | 6 - 1 | 9 - 7 | 12 - 8 | 16 - 2 | 19 - 0 |
| | | No. 1 | 5 - 9 | 9 - 0 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 9 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 2 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 3 | 4 - 3 | 6 - 3 | 7 - 10 | 9 - 7 | 11 - 2 | 4 - 0 | 5 - 10 | 7 - 5 | 9 - 1 | 10 - 6 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 3 | 18 - 1 | 5 - 9 | 9 - 1 | 11 - 11 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 8 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 1 |
| | | No. 2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Norway Spruce - Sweden | SS | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 7 | 18 - 1 | 5 - 11 | 9 - 3 | 12 - 0 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 2 | 5 - 1 | 7 - 5 | 9 - 5 | 11 - 5 | 13 - 3 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 11 | 18 - 5 | 6 - 0 | 9 - 5 | 12 - 3 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 10 | 8 - 7 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 1 | 12 - 3 | 14 - 3 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 4 | 10 - 10 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 9 | 9 - 1 | 11 - 11 | 14 - 11 | 17 - 4 | 5 - 9 | 9 - 1 | 11 - 7 | 14 - 1 | 16 - 4 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 2 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |
| | Scots Pine - Finland | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 3 | 18 - 5 | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 0 | 17 - 5 |
| | | No. 1 | 5 - 8 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 |
| | | No. 2 | 5 - 6 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 | 5 - 6 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 |
| | | No. 3 | 4 - 6 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 9 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 |
| | Scots Pine - Germany | SS | 5 - 11 | 9 - 3 | 12 - 2 | 15 - 3 | 17 - 9 | 5 - 11 | 9 - 3 | 11 - 9 | 14 - 5 | 16 - 8 |
| | | No. 1 | 5 - 6 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 2 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 6 | 4 - 10 | 7 - 1 | 9 - 0 | 11 - 0 | 12 - 9 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 | 3 - 8 | 5 - 5 | 6 - 10 | 8 - 4 | 9 - 8 |
| | Scots Pine - Sweden | SS | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 11 | 18 - 9 | 6 - 0 | 9 - 5 | 12 - 5 | 15 - 3 | 17 - 9 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 4 | 12 - 8 | 14 - 8 | 5 - 3 | 7 - 9 | 9 - 9 | 11 - 11 | 13 - 10 |
| | | No. 2 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 | 4 - 5 | 6 - 5 | 8 - 2 | 10 - 0 | 11 - 7 |
| | | No. 3 | 3 - 6 | 5 - 2 | 6 - 6 | 7 - 11 | 9 - 3 | 3 - 4 | 4 - 10 | 6 - 2 | 7 - 6 | 8 - 8 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 9 | 8 - 9 | 11 - 2 | 13 - 7 | 15 - 9 | 5 - 8 | 8 - 3 | 10 - 6 | 12 - 10 | 14 - 10 |
| | | No. 1 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 2 | 5 - 3 | 7 - 8 | 9 - 9 | 11 - 10 | 13 - 9 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 |
| | | No. 3 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 7 | 9 - 11 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 19.2 | Austrian Spruce - Austria & The Czech Republic | SS | 5 - 8 | 8 - 11 | 11 - 9 | 14 - 11 | 18 - 1 | 5 - 8 | 8 - 11 | 11 - 9 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 6 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 5 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Douglas Fir - France & Germany | SS | 5 - 10 | 9 - 3 | 12 - 2 | 15 - 6 | 18 - 1 | 5 - 10 | 9 - 3 | 12 - 0 | 14 - 8 | 17 - 1 |
| | | No. 1 | 5 - 7 | 8 - 2 | 10 - 3 | 12 - 7 | 14 - 7 | 5 - 3 | 7 - 8 | 9 - 8 | 11 - 10 | 13 - 9 |
| | | No. 2 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 5 - 6 | 8 - 8 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 6 | 9 - 11 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 |
| | Norway Spruce - Finland | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 17 - 2 | 5 - 5 | 8 - 6 | 11 - 3 | 13 - 11 | 16 - 2 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 | 4 - 2 | 6 - 2 | 7 - 9 | 9 - 6 | 11 - 0 |
| | | No. 3 | 3 - 5 | 5 - 0 | 6 - 5 | 7 - 10 | 9 - 0 | 3 - 3 | 4 - 9 | 6 - 0 | 7 - 4 | 8 - 6 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 5 - 6 | 8 - 8 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 3 | 11 - 10 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |
| | Norway Spruce - Norway | SS | 5 - 9 | 9 - 1 | 11 - 11 | 15 - 3 | 18 - 5 | 5 - 9 | 9 - 1 | 11 - 11 | 14 - 11 | 17 - 4 |
| | | No. 1 | 5 - 5 | 8 - 3 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 4 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 2 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 3 | 3 - 11 | 5 - 8 | 7 - 2 | 8 - 9 | 10 - 2 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 3 | 16 - 6 | 5 - 5 | 8 - 6 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 1 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 9 | 13 - 7 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 |
| | | No. 2 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |
| | Norway Spruce - Sweden | SS | 5 - 6 | 8 - 8 | 11 - 6 | 14 - 3 | 16 - 6 | 5 - 6 | 8 - 8 | 11 - 0 | 13 - 5 | 15 - 7 |
| | | No. 1 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 |
| | | No. 3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 5 - 8 | 8 - 11 | 11 - 9 | 14 - 6 | 16 - 10 | 5 - 8 | 8 - 10 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 1 | 5 - 4 | 7 - 10 | 9 - 11 | 12 - 1 | 14 - 0 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 |
| | | No. 2 | 4 - 11 | 7 - 3 | 9 - 2 | 11 - 2 | 13 - 0 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 3 |
| | | No. 3 | 3 - 9 | 5 - 6 | 7 - 0 | 8 - 6 | 9 - 11 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 5 | 8 - 6 | 11 - 2 | 13 - 8 | 15 - 10 | 5 - 5 | 8 - 4 | 10 - 6 | 12 - 10 | 14 - 11 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 10 | 7 - 2 | 9 - 0 | 11 - 0 | 12 - 9 | 4 - 7 | 6 - 9 | 8 - 6 | 10 - 5 | 12 - 1 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |
| | Scots Pine - Finland | SS | 5 - 5 | 8 - 6 | 11 - 3 | 14 - 4 | 16 - 10 | 5 - 5 | 8 - 6 | 11 - 2 | 13 - 8 | 15 - 10 |
| | | No. 1 | 5 - 4 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 2 | 5 - 2 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 1 | 7 - 6 | 9 - 5 | 11 - 7 | 13 - 5 |
| | | No. 3 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 3 | 10 - 8 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 1 |
| | Scots Pine - Germany | SS | 5 - 6 | 8 - 8 | 11 - 5 | 13 - 11 | 16 - 2 | 5 - 6 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 8 | 6 - 11 | 8 - 9 | 10 - 8 | 12 - 4 | 4 - 5 | 6 - 6 | 8 - 3 | 10 - 1 | 11 - 8 |
| | | No. 3 | 3 - 7 | 5 - 2 | 6 - 7 | 8 - 1 | 9 - 4 | 3 - 4 | 4 - 11 | 6 - 3 | 7 - 7 | 8 - 10 |
| | Scots Pine - Sweden | SS | 5 - 8 | 8 - 11 | 11 - 9 | 14 - 10 | 17 - 2 | 5 - 8 | 8 - 11 | 11 - 5 | 13 - 11 | 16 - 2 |
| | | No. 1 | 5 - 1 | 7 - 6 | 9 - 6 | 11 - 7 | 13 - 5 | 4 - 10 | 7 - 1 | 8 - 11 | 10 - 11 | 12 - 8 |
| | | No. 2 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 2 | 4 - 0 | 5 - 11 | 7 - 5 | 9 - 1 | 10 - 7 |
| | | No. 3 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 3 | 8 - 5 | 3 - 0 | 4 - 5 | 5 - 7 | 6 - 10 | 7 - 11 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 5 - 5 | 8 - 0 | 10 - 2 | 12 - 5 | 14 - 5 | 5 - 2 | 7 - 7 | 9 - 7 | 11 - 8 | 13 - 7 |
| | | No. 1 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 3 | 11 - 10 |
| | | No. 2 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 7 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 3 | 11 - 10 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 10 | 8 - 4 | 9 - 7 | 3 - 5 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 |

| Rafter Spacing (inches) | Species and Grade | | Ground snow load = 70 psf, ceiling attached to rafters, L/Δ = 240 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dead Load = 10 psf | | | | | Dead Load = 20 psf | | | | |
| | | | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 | 2x4 | 2x6 | 2x8 | 2x10 | 2x12 |
| | | | Maximum Rafter Spans (ft - in) | | | | | | | | | |
| 24 | Austrian Spruce - Austria & The Czech Republic | SS | 5 - 3 | 8 - 3 | 10 - 10 | 13 - 10 | 16 - 2 | 5 - 3 | 8 - 3 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Douglas Fir - France & Germany | SS | 5 - 5 | 8 - 7 | 11 - 3 | 13 - 11 | 16 - 2 | 5 - 5 | 8 - 6 | 10 - 9 | 13 - 2 | 15 - 3 |
| | | No. 1 | 5 - 0 | 7 - 3 | 9 - 2 | 11 - 3 | 13 - 0 | 4 - 8 | 6 - 10 | 8 - 8 | 10 - 7 | 12 - 4 |
| | | No. 2 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 3 | 3 - 6 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 | 3 - 3 | 4 - 9 | 6 - 1 | 7 - 5 | 8 - 7 |
| | Norway Spruce - Estonia, Latvia, & Lithuania | SS | 5 - 2 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 1 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | | No. 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 3 | 3 - 5 | 4 - 11 | 6 - 3 | 7 - 8 | 8 - 10 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 |
| | Norway Spruce - Finland | SS | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 3 | 15 - 4 | 5 - 0 | 7 - 11 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 1 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | | No. 2 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 | 3 - 9 | 5 - 6 | 6 - 11 | 8 - 6 | 9 - 10 |
| | | No. 3 | 3 - 1 | 4 - 6 | 5 - 8 | 7 - 0 | 8 - 1 | 2 - 11 | 4 - 3 | 5 - 5 | 6 - 7 | 7 - 7 |
| | Norway Spruce - Germany, NE France, & Switzerland | SS | 5 - 2 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 1 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 2 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |
| | Norway Spruce - Norway | SS | 5 - 4 | 8 - 5 | 11 - 1 | 14 - 2 | 16 - 5 | 5 - 2 | 8 - 1 | 10 - 8 | 13 - 4 | 15 - 6 |
| | | No. 1 | 5 - 0 | 7 - 4 | 9 - 4 | 11 - 5 | 13 - 2 | 4 - 9 | 6 - 11 | 8 - 9 | 10 - 9 | 12 - 5 |
| | | No. 2 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 3 | 3 - 6 | 5 - 1 | 6 - 5 | 7 - 10 | 9 - 1 | 3 - 3 | 4 - 9 | 6 - 1 | 7 - 5 | 8 - 7 |
| | Norway Spruce - Romania & Ukraine | SS | 5 - 0 | 7 - 11 | 10 - 5 | 12 - 9 | 14 - 9 | 4 - 6 | 7 - 0 | 9 - 3 | 11 - 10 | 13 - 11 |
| | | No. 1 | 4 - 8 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 | 4 - 4 | 6 - 5 | 8 - 1 | 9 - 11 | 11 - 6 |
| | | No. 2 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |
| | Norway Spruce - Sweden | SS | 5 - 2 | 8 - 1 | 10 - 5 | 12 - 9 | 14 - 9 | 5 - 2 | 7 - 9 | 9 - 10 | 12 - 0 | 13 - 11 |
| | | No. 1 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 2 | 4 - 2 | 6 - 1 | 7 - 8 | 9 - 4 | 10 - 10 | 3 - 11 | 5 - 8 | 7 - 3 | 8 - 10 | 10 - 3 |
| | | No. 3 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 | 3 - 0 | 4 - 5 | 5 - 7 | 6 - 9 | 7 - 10 |
| | Scots Pine - Austria & The Czech Republic, Romania, & Ukraine | SS | 5 - 3 | 8 - 3 | 10 - 8 | 13 - 0 | 15 - 1 | 5 - 3 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 1 | 4 - 9 | 7 - 0 | 8 - 10 | 10 - 10 | 12 - 6 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 |
| | | No. 2 | 4 - 5 | 6 - 6 | 8 - 2 | 10 - 0 | 11 - 7 | 4 - 2 | 6 - 1 | 7 - 9 | 9 - 5 | 11 - 0 |
| | | No. 3 | 3 - 5 | 4 - 11 | 6 - 3 | 7 - 8 | 8 - 10 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 |
| | Scots Pine - Estonia, Latvia, & Lithuania | SS | 5 - 0 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 | 5 - 0 | 7 - 5 | 9 - 5 | 11 - 6 | 13 - 4 |
| | | No. 1 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 2 | 4 - 4 | 6 - 4 | 8 - 1 | 9 - 10 | 11 - 5 | 4 - 1 | 6 - 0 | 7 - 7 | 9 - 4 | 10 - 9 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |
| | Scots Pine - Finland | SS | 5 - 0 | 7 - 11 | 10 - 5 | 13 - 0 | 15 - 1 | 5 - 0 | 7 - 11 | 10 - 0 | 12 - 3 | 14 - 2 |
| | | No. 1 | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | | No. 2 | 4 - 10 | 7 - 1 | 9 - 0 | 10 - 11 | 12 - 8 | 4 - 7 | 6 - 8 | 8 - 5 | 10 - 4 | 12 - 0 |
| | | No. 3 | 3 - 8 | 5 - 4 | 6 - 9 | 8 - 3 | 9 - 7 | 3 - 5 | 5 - 0 | 6 - 4 | 7 - 9 | 9 - 0 |
| | Scots Pine - Germany | SS | 5 - 2 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 | 5 - 2 | 7 - 7 | 9 - 8 | 11 - 9 | 13 - 8 |
| | | No. 1 | 4 - 6 | 6 - 7 | 8 - 4 | 10 - 2 | 11 - 10 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 7 | 11 - 2 |
| | | No. 2 | 4 - 3 | 6 - 2 | 7 - 10 | 9 - 6 | 11 - 1 | 4 - 0 | 5 - 10 | 7 - 4 | 9 - 0 | 10 - 5 |
| | | No. 3 | 3 - 2 | 4 - 8 | 5 - 11 | 7 - 2 | 8 - 4 | 3 - 0 | 4 - 5 | 5 - 7 | 6 - 9 | 7 - 10 |
| | Scots Pine - Sweden | SS | 5 - 3 | 8 - 3 | 10 - 10 | 13 - 3 | 15 - 4 | 5 - 3 | 8 - 1 | 10 - 3 | 12 - 6 | 14 - 6 |
| | | No. 1 | 4 - 7 | 6 - 8 | 8 - 6 | 10 - 4 | 12 - 0 | 4 - 4 | 6 - 4 | 8 - 0 | 9 - 9 | 11 - 4 |
| | | No. 2 | 3 - 10 | 5 - 7 | 7 - 1 | 8 - 8 | 10 - 0 | 3 - 7 | 5 - 3 | 6 - 8 | 8 - 2 | 9 - 5 |
| | | No. 3 | 2 - 10 | 4 - 2 | 5 - 4 | 6 - 6 | 7 - 6 | 2 - 8 | 3 - 11 | 5 - 0 | 6 - 1 | 7 - 1 |
| | Silver Fir (Abies alba) - Germany, NE France, & Switzerland | SS | 4 - 11 | 7 - 2 | 9 - 1 | 11 - 1 | 12 - 10 | 4 - 7 | 6 - 9 | 8 - 7 | 10 - 6 | 12 - 2 |
| | | No. 1 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | | No. 2 | 4 - 3 | 6 - 3 | 7 - 11 | 9 - 8 | 11 - 3 | 4 - 0 | 5 - 11 | 7 - 6 | 9 - 2 | 10 - 7 |
| | | No. 3 | 3 - 3 | 4 - 10 | 6 - 1 | 7 - 5 | 8 - 7 | 3 - 1 | 4 - 6 | 5 - 9 | 7 - 0 | 8 - 1 |

## ABOUT PLIB

Founded in 1903, Pacific Lumber Inspection Bureau (PLIB) is a non-profit, accredited lumber and wood products inspection and certification agency. PLIB provides lumber-grading and grade-stamping services to the lumber industry along with a wide range of other inspection and certification services for related wood-products manufacturers including Heat Treatment, Wood Packaging, CE Marking, WUI, Glulam, Cross-Laminated Timber, and Wood Trusses.

In January 2019, PLIB merged operations with the West Coast Lumber Inspection Bureau (WCLIB) and with it, the American Institute of Timber Construction (AITC), retaining both the WCLIB and AITC trademarks. With the merger, PLIB added Glulam and Cross-Laminated Timber quality-control certification to its list of signature services and expanded coverage into the southern United States and Europe.

PLIB is accredited by the American Lumber Standards Committee (ALSC), the Canadian Lumber Standards Accreditation Board (CLSAB), North America's only lumber grading accreditation bodies, and by the International Accreditation Service (IAS), a nonprofit, public-benefit corporation, and a subsidiary of the International Code Council (ICC), the governing body that develops the International Building Code (IBC).

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