



SOLIDSTART®
ENGINEERED WOOD PRODUCTS



**LP SOLIDSTART LSL
BEAM & HEADER TECHNICAL GUIDE
1730F_b-1.35E, 2360F_b-1.55E AND 2500F_b-1.75E**

REVISED 3/12

Designed to Outperform Dimensional Lumber

LP® SolidStart® Laminated Strand Lumber (LSL) has many advantages over competing products like dimensional lumber, LVL, PSL, and Glulams including connections, consistency, straightness, predictability, and increased design flexibility.

WHAT IS LSL?

LP SolidStart LSL is a strand-based product similar to oriented strand board technology, that uses a single-opening, static, steam-injection press that transfers the necessary heat for the curing of the resin most efficiently, thus enabling very short cure times. The end product is a long length laminated strand board with properties that make it an ideal product for load-carrying beam and header applications. And compared to dimensional lumber, LP SolidStart LSL can reduce build cycle time because one piece is needed instead of multiple pieces.

1730F_b-1.35E, 2360F_b-1.55E AND 2500F_b-1.75E

LP SolidStart LSL beam and header is available in lengths up to 64'; thicknesses up to 3-1/2"; and standard depths of 4-3/8", 5-1/2", 7-1/4", 9-1/4", 9-1/2", 11-1/4", 11-7/8", 14", 16" and 18". Please verify availability with the LP SolidStart Engineered Wood Products distributor in your area before specifying these products.

FRIEND TO THE ENVIRONMENT

LP SolidStart LSL is made from a mixture of underutilized northern hardwoods – primarily aspen and maple. Over 80% of the log is used in the final product; 100% of the log is used in the manufacture, including the energy generated. All LP wood-based products use SFI-certified wood. LP uses forest management and timber procurement systems that are SFI certified, which helps to ensure its wood comes from well-managed forests.

LIFETIME LIMITED WARRANTY

LP SolidStart is backed by a lifetime limited, fully transferable warranty that protects the builder and homeowner against manufacturing defects.



IMPORTANT NOTES

1. LP SolidStart LSL shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
2. This guide is valid only for LP SolidStart LSL members supporting loads applied parallel to the face of the strands ("edge" orientation).
3. Ensure that the design loads, duration of load increases and deflection limits that you use to select products from this guide are appropriate for your application and comply with local code requirements. If you do not know the correct design criteria and all the loads imposed on the component from all parts of the structure, seek qualified help from the architect, engineer or designer of the structure. Additional reference data on wood construction is available in the form of building codes, code evaluation reports and other design references.
4. The Quick Reference and Allowable Load tables in this guide are only for uniform loads on simple (single) or equal, continuous (multiple) span members as noted in each table. For other conditions such as concentrated loads, unequal spans, etc., contact your LP SolidStart Engineered Wood Products distributor.
5. Spans are typically measured from center-to-center of supports except for door and window headers. Header spans are measured from the inside face of the supports – the rough opening (RO). A structurally adequate bearing surface under the full width (thickness) of the beam must be provided at each support.
6. Minimum bearing length is 1-1/2" (at least one jack stud or cripple is required) unless otherwise noted for a specific table. Refer to the Reaction Capacity charts and the notes for each table. Verify local code requirements for minimum bearing.
7. Total load deflections are based on instantaneous loading. Long term deflection (creep) under sustained load has not been considered.
8. LP SolidStart LSL is not cambered.
9. Higher grades of LP SolidStart LSL can be substituted for the indicated grade.
10. LP SolidStart LSL sized with the tables and design values in this guide requires continuous lateral restraint of the compression edge. Continuous restraint is defined as a maximum unbraced length of 24". This restraint is normally provided by sheathing and/or other framing members, which shall be adequately anchored to the LSL and the supporting structure. Framing conditions that do not provide continuous lateral restraint require special design. Contact your LP SolidStart Engineered Wood Products distributor. Caution: Failure to provide adequate lateral restraint could result in an unstable member and reduce its load capacity.
11. Lateral restraint shall also be provided at all supports to prevent rotation or twisting.
12. Refer to the Connection Details page for information on designing nailed and bolted connections, minimum nail spacing and end distances, and for properly connecting multiple plies of LSL to form a built-up member.

LSL 1730F_b - 1.35E

| | |
|---|-----|
| Product Specifications & Design Values | 4 |
| Floor Header Quick Reference Tables | 5 |
| Combined Header Quick Reference Tables | 6-7 |
| Roof Header Quick Reference Tables. | 8-9 |
| Uniform Floor Load (PLF) Tables: 3-1/2" | 10 |
| Uniform Roof Load (PLF) Tables: 3-1/2" | 11 |

LSL 2360F_b - 1.55E

| | |
|--|-------|
| Product Specifications & Design Values | 12 |
| Floor Beam Quick Reference Tables | 13 |
| Combined Beam Quick Reference Tables | 14-15 |
| Roof Beam Quick Reference Tables | 16-17 |
| Uniform Floor Load (PLF) Tables: 1-1/2" & 1-3/4" | 18-19 |
| Uniform Roof Load (PLF) Tables: 1-1/2" & 1-3/4" | 20-21 |

LSL 2500F_b - 1.75E

| | |
|--|-------|
| Product Specifications & Design Values | 22 |
| Floor Beam Quick Reference Tables | 23 |
| Combined Beam Quick Reference Tables | 24-25 |
| Roof Beam Quick Reference Tables | 26-27 |
| Uniform Floor Load (PLF) Tables: 1-1/2" & 1-3/4" | 28-29 |
| Uniform Roof Load (PLF) Tables: 1-1/2" & 1-3/4" | 30-31 |

GENERAL INFORMATION

| | |
|---|-------|
| Temporary Bracing & Warnings | 32 |
| Installation Details | 33 |
| Connection Details | 34-35 |
| Handling & Storage Guidelines | 36 |

LSL 1.35E Product Specifications & Design Values

ALLOWABLE STRESS DESIGN VALUES (PSI)

| Grade | Bending Stress F _b | Modulus of Elasticity E (x 10 ⁶ psi) | Shear Stress F _v | Compression Stress | |
|---------------------------|----------------------------------|---|--------------------------------|---------------------------------------|---|
| | | | | F _c (Parallel To Grain) | F _{c⊥} (Perpendicular To Grain) |
| 1730F _b -1.35E | 1730 | 1.35 | 410 | 1650 | 750 |

NOTES:

1. LP® SolidStart® LSL shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
2. The allowable strengths and stiffness are for standard load duration. Bending, Shear and Compression parallel-to-grain shall be adjusted according to code. Modulus of Elasticity and Compression perpendicular-to-grain shall not be adjusted.
3. The allowable Bending Stress is tabulated for 12" depth. For depths other than 12", multiply F_b by $(12/\text{depth})^{1/7}$. For depths less than 3-1/2", multiply F_b by 1.19.
4. Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{270wL^4}{Ebd^3} + \frac{28.8wL^2}{Ebd}$ Where: Δ = deflection (in) E = modulus of elasticity (from table)
 w = uniform load (plf) b = width (in)
 L = design span (ft) d = depth (in)

Equations for other conditions can be found in engineering references.

SECTION PROPERTIES AND ALLOWABLE CAPACITIES

| Depth | Weight (lb/ft) | | | | Allowable Moment (lb-ft) | | | | Allowable Shear (lb) | | | | Moment of Inertia (in ⁴) | | | |
|---------|-------------------|--------|--------|--------|-----------------------------|--------|--------|--------|-------------------------|--------|--------|--------|---|--------|--------|--------|
| | 1-3/4" | 3-1/2" | 5-1/4" | 5-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 5-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 5-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 5-1/2" |
| 4-3/8" | 2.4 | 4.9 | 7.3 | 7.7 | 930 | 1859 | 2789 | 2922 | 2093 | 4185 | 6278 | 6577 | 12 | 24 | 37 | 38 |
| 5-1/2" | 3.1 | 6.1 | 9.2 | 9.7 | 1422 | 2844 | 4266 | 4469 | 2631 | 5262 | 7893 | 8268 | 24 | 49 | 73 | 76 |
| 7-1/4" | 4.1 | 8.1 | 12.2 | 12.7 | 2375 | 4750 | 7125 | 7465 | 3468 | 6936 | 10404 | 10899 | 56 | 111 | 167 | 175 |
| 9-1/4" | 5.2 | 10.3 | 15.5 | 16.3 | 3734 | 7468 | 11202 | 11736 | 4425 | 8849 | 13274 | 13906 | 115 | 231 | 346 | 363 |
| 9-1/2" | 5.3 | 10.6 | 15.9 | 16.7 | 3924 | 7847 | 11771 | 12332 | 4544 | 9088 | 13633 | 14282 | 125 | 250 | 375 | 393 |
| 11-1/4" | 6.3 | 12.6 | 18.9 | 19.8 | 5371 | 10742 | 16113 | 16881 | 5381 | 10763 | 16144 | 16913 | 208 | 415 | 623 | 653 |
| 11-7/8" | 6.6 | 13.3 | 19.9 | 20.9 | 5938 | 11877 | 17815 | 18664 | 5680 | 11360 | 17041 | 17852 | 244 | 488 | 733 | 768 |

NOTES:

1. The Allowable Moment and Shear capacities are for standard load duration and shall be adjusted according to code.
2. 3-1/2" wide members are either a single piece of 3-1/2" LSL or two plies of 1-3/4" LSL. 5-1/4" wide members are either the combination of a single piece of 3-1/2" LSL with a single piece of 1-3/4" LSL or three plies of 1-3/4" LSL. 5-1/2" wide members are a combination of a single piece of 3-1/2" LSL with a single piece of 2" LSL.
3. The tabulated weight is an estimate and shall only be used for design purposes. Contact LP for actual shipping weights.

FASTENERS:

Refer to pages 34-35 for information on connecting multiple plies and for the equivalent specific gravity for design of nailed and bolted connections.

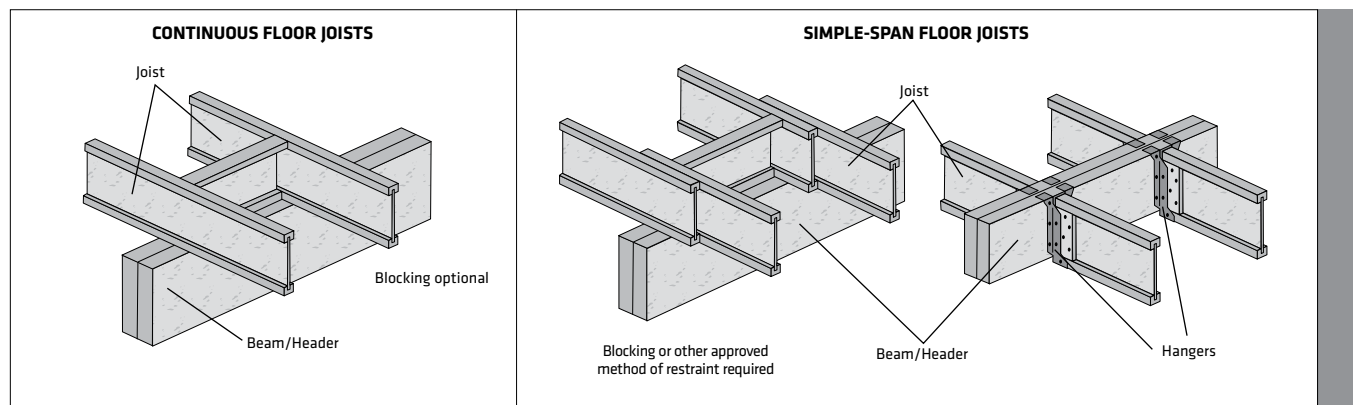
REACTION CAPACITY (LBS)

| | | Bearing Length | | | | | | | | | | | | | | | | | | | | |
|--------|--------|----------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|---------|-------|---------|-------|
| Width | 1-1/2" | 2" | 2-1/2" | 3" | 3-1/2" | 4" | 4-1/2" | 5" | 5-1/2" | 6" | 6-1/2" | 7" | 7-1/2" | 8" | 8-1/2" | 9" | 9-1/2" | 10" | 10-1/2" | 11" | 11-1/2" | 12" |
| 1-3/4" | 1969 | 2625 | 3281 | 3938 | 4594 | 5250 | 5906 | 6563 | 7219 | 7875 | 8531 | 9188 | 9844 | 10500 | 11156 | 11813 | 12469 | 13125 | 13781 | 14438 | 15094 | 15750 |
| 3-1/2" | 3937 | 5250 | 6562 | 7875 | 9187 | 10500 | 11812 | 13125 | 14437 | 15750 | 17062 | 18375 | 19687 | 21000 | 22312 | 23625 | 24937 | 26250 | 27562 | 28875 | 30187 | 31500 |
| 5-1/4" | 5906 | 7875 | 9843 | 11813 | 13781 | 15750 | 17718 | 19688 | 21656 | 23625 | 25593 | 27563 | 29531 | 31500 | 33468 | 35438 | 37406 | 39375 | 41343 | 43313 | 45281 | 47250 |
| 5-1/2" | 6187 | 8250 | 10312 | 12375 | 14437 | 16500 | 18562 | 20625 | 22687 | 24750 | 26812 | 28875 | 30937 | 33000 | 35062 | 37125 | 39187 | 41250 | 43312 | 45375 | 47437 | 49500 |

NOTES:

1. The maximum Reactions are based on the compression strength, perpendicular-to-grain, of the LSL. This is suitable for beams bearing on steel or the end-grain of studs.
2. Verify that the support for the beam is structurally adequate to carry the reaction. The compressive strength parallel-to-grain, of studs may require more studs than the bearing length above indicates.
3. For beams bearing on wood plates, the required bearing length will increase based on the bearing strength (compression perpendicular-to-grain) of the species and grade used for the plate material.
4. Verify local code requirements concerning minimum bearing.

1.35E FLOOR BEAM/HEADER QUICK REFERENCE DETAILS (see page 5 for tables)



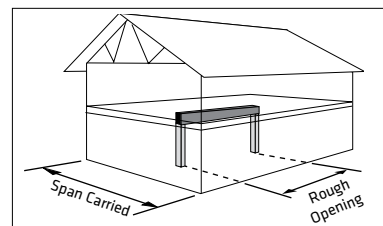
LSL 1.35E Floor Header Quick Reference Tables

TO USE:

1. Select the correct table for the supported floor joist condition (simple or continuous).
2. Choose the required rough opening for the header.
3. Select the span carried by the header across the top of the table.
4. Read the header size or choice of header sizes from the table.

EXAMPLE: A header with a 7'-2" rough opening carries 15'-0" simple span joists on each side.

SOLUTION: Using the Simple-Span Floor Joists table with 30'-0" span carried, select either **3-1/2" x 9-1/4"** or **5-1/2" x 7-1/4"**.



LSL 1730F_p-1.35E

CONTINUOUS FLOOR JOISTS (DESIGN FLOOR LOADS: 40 PSF LIVE, 15 PSF DEAD)

| Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|---------------|--------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-2" | 3-1/2" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 4'-8" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-2" | 3-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" |
| 5'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" |
| 7'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | - | - |
| | 5-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" |
| 8'-8" | 3-1/2" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | - | - | - | - |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| 9'-2" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | - | - | - | - | - | - |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |

SIMPLE-SPAN FLOOR JOISTS (DESIGN FLOOR LOADS: 40 PSF LIVE, 15 PSF DEAD)

| Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|---------------|--------------|------------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-8" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-2" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-8" | 3-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 7'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| 7'-8" | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | - |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" |

NOTES:

1. Use the Continuous Floor Joists table where the floor joists are continuous (multiple span) over the header.
Use the Simple-Span Floor Joists table where the floor joists frame into the side of or end on top of the header.
2. Rough Opening is the clear span of the header, equal to the door or window rough opening, and is valid for simple and equal, continuous header spans.
3. End supports require 1-1/2" bearing, except 3" is required where highlighted in **bold white**. Interior supports require 3" bearing, except 5" is required where **bold** (white or black).
The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 4 for additional information.
4. Deflections are limited to L/360 live load and L/240 total load.
5. Header width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners.
Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

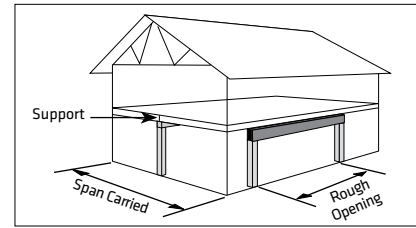
LSL 1.35E Combined Header Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required rough opening for the header.
3. Select the span carried by the header across the top of the table.
4. Read the header size or choice of header sizes from the table.

EXAMPLE: A header with a 5'-8" rough opening supports a 32'-0" span carried for a 20 psf Roof live load.

SOLUTION: Using the correct table for the roof load with 32'-0" span carried, select either **3-1/2" x 7-1/4"** or **5-1/2" x 7-1/4"**.



| DESIGN LOADS ROOF: 20 PSF SNOW OR LIVE (115% or 125%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|--|---------------|--------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-2" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 4'-8" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-2" | 3-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" |
| 5'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| 7'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-8" | 3-1/2" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | - |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" |
| 9'-2" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | - | - | - | - |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |

| DESIGN LOADS ROOF: 25 PSF SNOW (115%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|--|---------------|--------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-2" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 4'-8" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 5'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-8" | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" |
| 8'-8" | 3-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | - | - | - | - |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 9'-2" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | - | - | - | - | - |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |

NOTES:

1. Rough Opening is the clear span of the header, equal to the door or window rough opening, and is valid for simple header spans only.
2. End supports require 1-1/2" bearing, except 3" is required where **bold**. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 4 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Header width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.35E Combined Header Quick Reference Tables

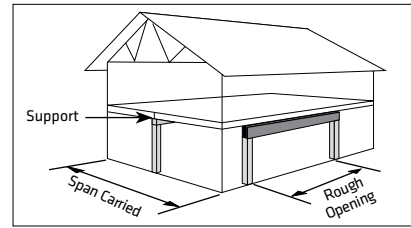
TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required rough opening for the header.
3. Select the span carried by the header across the top of the table.
4. Read the header size or choice of header sizes from the table.

EXAMPLE: A header with a 5'-8" rough opening supports a 32'-0" span carried for a 40 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 32'-0" span carried, select either **3-1/2" x 9-1/4"** or **5-1/2" x 7-1/4"**.

NOTE: The 3-1/2" x 9-1/4" requires an additional trimmer on each end.



| DESIGN LOADS ROOF: 30 PSF SNOW (115%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|--|---------------|--------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-2" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 4'-8" | 3-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 5'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-8" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-2" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |

| DESIGN LOADS ROOF: 40 PSF SNOW (115%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|--|---------------|--------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | 3-1/2" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" |
| 4'-2" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 4'-8" | 3-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 5'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-2" | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 6'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 7'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-2" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-8" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-2" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |

NOTES:

1. Rough Opening is the clear span of the header, equal to the door or window rough opening, and is valid for simple header spans only.
2. End supports require 1-1/2" bearing, except 3" is required where **bold**. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 4 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Header width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

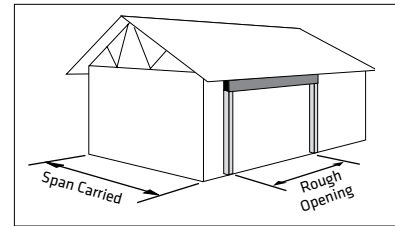
LSL 1.35E Roof Header Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required rough opening for the header.
3. Select the span carried by the header across the top of the table.
4. Read the header size or choice of header sizes from the table.

EXAMPLE: A header with a 8'-8" rough opening supports a 38'-0" span carried for a 20 psf Roof live load.

SOLUTION: Using the correct table for the roof load with 38'-0" span carried, select either **3-1/2" x 9-1/4"** or **5-1/2" x 9-1/4"**



| DESIGN LOADS ROOF: 20 PSF SNOW OR LIVE (115% or 125%), 15 PSF DEAD | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|---|---------------|--------------|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-2" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-8" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 5'-2" | | 3-1/2" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-8" | | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 6'-2" | | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 6'-8" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 7'-2" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 7'-8" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-2" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-8" | | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-2" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |

| DESIGN LOADS ROOF: 25 PSF SNOW (115%), 15 PSF DEAD | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|---|---------------|--------------|------------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 3'-2" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 3'-8" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-2" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 4'-8" | | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| 5'-2" | | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 5'-8" | | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 6'-2" | | 3-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" |
| 6'-8" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 7'-2" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 7'-8" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-2" | | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 8'-8" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-2" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |

NOTES:

1. Rough Opening is the clear span of the header, equal to the door or window rough opening, and is valid for simple header spans only.
2. End supports require 1-1/2" bearing, except 3" is required where **bold**. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 4 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Header width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.35E Roof Header Quick Reference Tables

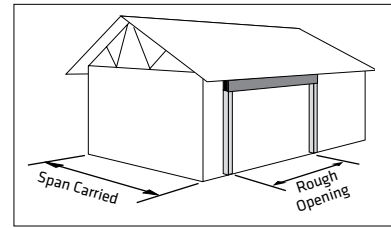
TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required rough opening for the header.
3. Select the span carried by the header across the top of the table.
4. Read the header size or choice of header sizes from the table.

EXAMPLE: A header with a 8'-8" rough opening supports a 38'-0" span carried for a 30 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 38'-0" span carried, select either **3-1/2" x 11-1/4"** or **5-1/2" x 9-1/4"**.

NOTE: The 3-1/2" x 11-1/4" requires an additional trimmer on each end.



| | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|---|---------------|--------------|------------------------|--------|--------|--------|--------|--------|---------|----------------|----------------|----------------|----------------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| DESIGN LOADS ROOF: 30 PSF SNOW (115%), 15 PSF DEAD | 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | 3'-8" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | 4'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 4'-8" | 3-1/2" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5'-2" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5'-8" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 6'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 6'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 7'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 7'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" |
| | 8'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 8'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 9'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |

| | Rough Opening | Header Width | Span Carried By Header | | | | | | | | | | |
|---|---------------|--------------|------------------------|--------|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| DESIGN LOADS ROOF: 40 PSF SNOW (115%), 15 PSF DEAD | 3'-2" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | 3'-8" | 3-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" |
| | 4'-2" | 3-1/2" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" |
| | 4'-8" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 4-3/8" | 4-3/8" | 4-3/8" | 4-3/8" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 5'-2" | 3-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" |
| | 5'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 6'-2" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 6'-8" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 7'-2" | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 7'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 8'-2" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/2" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 8'-8" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 9'-2" | 3-1/2" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | | 5-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" |

NOTES:

1. Rough Opening is the clear span of the header, equal to the door or window rough opening, and is valid for simple header spans only.
2. End supports require 1-1/2" bearing, except 3" is required where **bold**. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 4 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Header width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.35E Uniform Floor Load (PLF) Tables: 3-1/2"

TO USE:

1. Select the span required.
2. Compare the design total load to the Total Load column.
3. Compare the design live load to the appropriate Live Load column.
4. Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 10' beam span, select a 3-1/2" beam that satisfies an L/360 Live Load deflection limit for the following design loads:

Live Load = 480 plf; Total Load = 660 plf

SOLUTION:

Use a **3-1/2" x 11-1/4"**

(Total Load = 846 plf, Live Load = 731 plf)

| Span | 3-1/2" x 4-3/8" | | | 3-1/2" x 5-1/2" | | | 3-1/2" x 7-1/4" | | | 3-1/2" x 9-1/4" | | | Span |
|------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 3' | 1106 | 1474 | 1647 | 1984 | | 2521 | | | 3691 | | | 4709 | 3' |
| 4' | 507 | 676 | 924 | 946 | 1261 | 1415 | 1929 | | 2367 | 3445 | | 3529 | 4' |
| 5' | 270 | 361 | 537 | 515 | 687 | 903 | 1089 | 1452 | 1511 | 2029 | | 2379 | 5' |
| 6' | 160 | 214 | 316 | 309 | 412 | 612 | 667 | 890 | 1047 | 1278 | | 1649 | 6' |
| 7' | 102 | 136 | 200 | 199 | 265 | 392 | 436 | 581 | 767 | 851 | 1134 | 1208 | 7' |
| 8' | 69 | 92 | 133 | 135 | 180 | 264 | 299 | 399 | 585 | 591 | 789 | 923 | 8' |
| 9' | 49 | 65 | 93 | 96 | 128 | 185 | 213 | 285 | 419 | 426 | 569 | 727 | 9' |
| 10' | 35 | 47 | 66 | 70 | 94 | 134 | 157 | 210 | 307 | 317 | 423 | 587 | 10' |
| 11' | - | - | - | 53 | 71 | 100 | 119 | 159 | 231 | 241 | 322 | 473 | 11' |
| 12' | - | - | - | 41 | 54 | 76 | 92 | 123 | 177 | 188 | 251 | 366 | 12' |
| 13' | - | - | - | 32 | 43 | 58 | 73 | 97 | 138 | 149 | 199 | 288 | 13' |
| 14' | - | - | - | - | - | - | 59 | 78 | 110 | 120 | 160 | 230 | 14' |
| 15' | - | - | - | - | - | - | 48 | 64 | 88 | 98 | 131 | 186 | 15' |
| 16' | - | - | - | - | - | - | 39 | 53 | 71 | 81 | 108 | 152 | 16' |
| 17' | - | - | - | - | - | - | 33 | 44 | 58 | 68 | 91 | 126 | 17' |
| 18' | - | - | - | - | - | - | - | - | - | 57 | 76 | 105 | 18' |

| Span | 3-1/2" x 9-1/2" | | | 3-1/2" x 11-1/4" | | | 3-1/2" x 11-7/8" | | | Span |
|------|-----------------|-------|------------|------------------|-------|------------|------------------|-------|------------|------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 3' | | | 4836 | | | 5727 | | | 6045 | 3' |
| 4' | | | 3624 | | | 4292 | | | 4530 | 4' |
| 5' | 2166 | | 2500 | 3235 | | 3424 | | | 3622 | 5' |
| 6' | 1370 | | 1733 | 2097 | | 2374 | 2392 | | 2626 | 6' |
| 7' | 914 | 1218 | 1270 | 1423 | | 1741 | 1634 | | 1925 | 7' |
| 8' | 636 | 849 | 970 | 1004 | | 1330 | 1158 | | 1471 | 8' |
| 9' | 459 | 613 | 764 | 732 | 976 | 1048 | 847 | 1130 | 1159 | 9' |
| 10' | 342 | 456 | 617 | 548 | 731 | 846 | 636 | 849 | 936 | 10' |
| 11' | 261 | 348 | 508 | 421 | 561 | 697 | 489 | 652 | 771 | 11' |
| 12' | 203 | 271 | 396 | 329 | 439 | 584 | 383 | 511 | 646 | 12' |
| 13' | 161 | 215 | 312 | 262 | 350 | 495 | 306 | 408 | 548 | 13' |
| 14' | 130 | 173 | 249 | 212 | 283 | 412 | 247 | 330 | 471 | 14' |
| 15' | 106 | 142 | 202 | 174 | 232 | 335 | 203 | 271 | 393 | 15' |
| 16' | 88 | 117 | 165 | 144 | 192 | 276 | 168 | 225 | 324 | 16' |
| 17' | 73 | 98 | 137 | 121 | 161 | 229 | 141 | 188 | 270 | 17' |
| 18' | 62 | 83 | 114 | 102 | 136 | 192 | 120 | 160 | 226 | 18' |

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Total Load is for normal (100%) duration and has been adjusted to account for the self-weight of the member.
4. Live Load deflection has been limited to L/360 or L/480 as noted in the table.
5. Total deflection has been limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 4.

ADDITIONAL NOTES:

1. The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check both the Total Load and the appropriate Live Load column.
3. Where the Live Load is blank, the Total Load governs the design.
4. The member width shall be a single ply of 3-1/2" LSL.
5. Do not use a product where designated "-" without further analysis by a design professional.

| ACTUAL DEFLECTION BASED ON SPAN AND LIMIT | | | |
|--|--------|--------|---------|
| Span (ft) | L/480 | L/360 | L/240 |
| 10' | 1/4" | 5/16" | 1/2" |
| 12' | 5/16" | 3/8" | 5/8" |
| 14' | 3/8" | 7/16" | 11/16" |
| 16' | 3/8" | 9/16" | 13/16" |
| 18' | 7/16" | 5/8" | 7/8" |
| 20' | 1/2" | 11/16" | 1" |
| 22' | 9/16" | 3/4" | 1-1/8" |
| 24' | 5/8" | 13/16" | 1-3/16" |
| 26' | 5/8" | 7/8" | 1-5/16" |
| 28' | 11/16" | 15/16" | 1-3/8" |
| 30' | 3/4" | 1" | 1-1/2" |

* Deflections rounded to the nearest 1/16"

LSL 1.35E Uniform Roof Load (PLF) Tables: 3-1/2"

TO USE:

1. Select the span required. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof slope adjustment factor from the table at the bottom of this page.
2. Compare the design total load to the appropriate Total Load column for Snow (115%) or Non-Snow (125%).
3. Compare the design snow/live load to the appropriate Snow/Live Load column for L/360 or L/240. For a snow/live load deflection limit of L/480, compare the design snow/live load to the L/480 Live Load column from the Uniform Floor Load Tables.
4. Select a product that exceeds both the design total and live loads.

EXAMPLE:

For an 8' horizontal beam span with a pitch of 4:12, select a 3-1/2" beam that satisfies an L/240 Snow Load deflection limit for the following design loads: Snow Load = 720 plf; Total Load = 1120 plf

CALCULATE BEAM SPAN: 8' x 1.054 = 8.43' → Use Span = 9'

SOLUTION:

Use a **3-1/2" x 11-1/4"**

(Total Load = 1207 plf, Snow Load L/240 deflection does not control)

| Span | 3-1/2" x 4-3/8" | | | | 3-1/2" x 5-1/2" | | | | 3-1/2" x 7-1/4" | | | | 3-1/2" x 9-1/4" | | | | Span |
|------|-----------------|-------|------------|----------|-----------------|-------|------------|----------|-----------------|-------|------------|----------|-----------------|-------|------------|----------|------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | | | Snow | Non-Snow | | | Snow | Non-Snow | | | Snow | Non-Snow | | | Snow | Non-Snow | |
| | L/360 | L/240 | 115% | 125% | L/360 | L/240 | 115% | 125% | L/360 | L/240 | 115% | 125% | L/360 | L/240 | 115% | 125% | |
| 3' | 1474 | | 1895 | 2060 | 2645 | | 2900 | 3153 | | | 4245 | 4615 | | | 5417 | 5889 | 3' |
| 4' | 676 | 1015 | 1064 | 1157 | 1261 | | 1629 | 1771 | 2572 | | 2723 | 2960 | | | 4060 | 4414 | 4' |
| 5' | 361 | 541 | 679 | 717 | 687 | 1031 | 1040 | 1131 | 1452 | | 1740 | 1892 | 2705 | | 2737 | 2976 | 5' |
| 6' | 214 | 321 | 423 | 423 | 412 | 618 | 720 | 783 | 890 | | 1205 | 1311 | 1705 | | 1898 | 2064 | 6' |
| 7' | 136 | 205 | 268 | 268 | 265 | 398 | 524 | 524 | 581 | 872 | 883 | 961 | 1134 | | 1391 | 1513 | 7' |
| 8' | 92 | 138 | 180 | 180 | 180 | 270 | 354 | 354 | 399 | 598 | 674 | 734 | 789 | | 1063 | 1156 | 8' |
| 9' | 65 | 98 | 125 | 125 | 128 | 192 | 249 | 249 | 285 | 427 | 531 | 562 | 569 | 853 | 837 | 911 | 9' |
| 10' | 47 | 71 | 90 | 90 | 94 | 141 | 181 | 181 | 210 | 315 | 412 | 412 | 423 | 634 | 676 | 736 | 10' |
| 11' | 36 | 54 | 67 | 67 | 71 | 106 | 135 | 135 | 159 | 239 | 311 | 311 | 322 | 483 | 557 | 606 | 11' |
| 12' | - | - | - | - | 54 | 82 | 103 | 103 | 123 | 185 | 239 | 239 | 251 | 376 | 466 | 492 | 12' |
| 13' | - | - | - | - | 43 | 65 | 80 | 80 | 97 | 146 | 187 | 187 | 199 | 299 | 388 | 388 | 13' |
| 14' | - | - | - | - | 34 | 52 | 63 | 63 | 78 | 118 | 149 | 149 | 160 | 241 | 311 | 311 | 14' |
| 15' | - | - | - | - | - | - | - | - | 64 | 96 | 120 | 120 | 131 | 197 | 252 | 252 | 15' |
| 16' | - | - | - | - | - | - | - | - | 53 | 79 | 98 | 98 | 108 | 163 | 207 | 207 | 16' |
| 17' | - | - | - | - | - | - | - | - | 44 | 66 | 80 | 80 | 91 | 136 | 171 | 171 | 17' |
| 18' | - | - | - | - | - | - | - | - | 37 | 56 | 66 | 66 | 76 | 115 | 143 | 143 | 18' |

| Span | 3-1/2" x 9-1/2" | | | | 3-1/2" x 11-1/4" | | | | 3-1/2" x 11-7/8" | | | | Span |
|------|-----------------|-------|------------|----------|------------------|-------|------------|----------|------------------|-------|------------|----------|------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | | | Snow | Non-Snow | | | Snow | Non-Snow | | | Snow | Non-Snow | |
| | L/360 | L/240 | 115% | 125% | L/360 | L/240 | 115% | 125% | L/360 | L/240 | 115% | 125% | |
| 3' | | | 5563 | 6048 | | | 6588 | 7162 | | | 6954 | 7560 | 3' |
| 4' | | | 4170 | 4533 | | | 4938 | 5368 | | | 5212 | 5666 | 4' |
| 5' | 2888 | | 2877 | 3128 | | | 3940 | 4284 | | | 4167 | 4530 | 5' |
| 6' | 1826 | | 1994 | 2169 | 2796 | | 2732 | 2971 | 3189 | | 3021 | 3285 | 6' |
| 7' | 1218 | | 1462 | 1590 | 1898 | | 2004 | 2179 | 2178 | | 2216 | 2410 | 7' |
| 8' | 849 | | 1117 | 1215 | 1339 | | 1531 | 1665 | 1544 | | 1694 | 1842 | 8' |
| 9' | 613 | 919 | 880 | 958 | 976 | | 1207 | 1313 | 1130 | | 1335 | 1452 | 9' |
| 10' | 456 | 684 | 711 | 774 | 731 | | 975 | 1061 | 849 | | 1079 | 1174 | 10' |
| 11' | 348 | 522 | 586 | 637 | 561 | 842 | 804 | 875 | 652 | | 889 | 968 | 11' |
| 12' | 271 | 406 | 490 | 531 | 439 | 659 | 673 | 733 | 511 | 767 | 745 | 811 | 12' |
| 13' | 215 | 323 | 416 | 420 | 350 | 525 | 572 | 623 | 408 | 612 | 633 | 689 | 13' |
| 14' | 173 | 260 | 336 | 336 | 283 | 424 | 491 | 535 | 330 | 495 | 544 | 592 | 14' |
| 15' | 142 | 213 | 273 | 273 | 232 | 348 | 426 | 451 | 271 | 406 | 472 | 514 | 15' |
| 16' | 117 | 176 | 224 | 224 | 192 | 288 | 372 | 372 | 225 | 337 | 413 | 437 | 16' |
| 17' | 98 | 147 | 186 | 186 | 161 | 242 | 310 | 310 | 188 | 283 | 364 | 364 | 17' |
| 18' | 83 | 124 | 155 | 155 | 136 | 205 | 260 | 260 | 160 | 240 | 306 | 306 | 18' |

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Total Load is for Snow (115%) or Non-Snow (125%) duration, as noted in the table, and has been adjusted to account for the self-weight of the member.
4. Snow/Live Load deflection has been limited to L/360 or L/240 as noted in the table.
5. Total deflection has been limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 4.

ADDITIONAL NOTES:

1. The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
2. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table at the bottom of this page.
3. The designer shall check both the appropriate Total Load and the appropriate Snow/Live Load column.
4. Where the Snow/Live Load is blank, the Total Load governs the design.
5. To design for a live load deflection limit of L/480, use the Uniform Floor Load tables.
6. The member width shall be a single ply of 3-1/2" LSL.
7. Do not use a product where designated "-" without further analysis by a design professional.

| SLOPE ADJUSTMENT | |
|------------------|--------|
| Slope | Factor |
| 2:12 | 1.014 |
| 3:12 | 1.031 |
| 4:12 | 1.054 |
| 5:12 | 1.083 |
| 6:12 | 1.118 |
| 7:12 | 1.158 |
| 8:12 | 1.202 |
| 9:12 | 1.250 |
| 10:12 | 1.302 |
| 11:12 | 1.357 |
| 12:12 | 1.414 |

LSL 1.55E Product Specifications & Design Values

| ALLOWABLE STRESS DESIGN VALUES (PSI) | | | | | |
|--------------------------------------|-------------------------|--|-----------------------|------------------------------|--|
| Grade | Bending Stress F_b | Modulus of Elasticity E ($\times 10^4$ psi) | Shear Stress F_v | Compression Stress | |
| | | | | F_c (Parallel To Grain) | $F_{c\perp}$ (Perpendicular To Grain) |
| 2360F _b -1.55E | 2360 | 1.55 | 410 | 2175 | 875 |

NOTES:

- LP® SolidStart® LSL shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
- The allowable strengths and stiffness are for standard load duration. Bending, Shear and Compression parallel-to-grain shall be adjusted according to code. Modulus of Elasticity and Compression perpendicular-to-grain shall not be adjusted.
- The allowable Bending Stress is tabulated for 12" depth. For depths other than 12", multiply F_b by $(12/\text{depth})^{1/2}$. For depths less than 3-1/2", multiply F_b by 1.19.
- Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{270wL^4}{Ebd^3} + \frac{28.8wL^2}{Ebd}$ Where: Δ = deflection (in) E = modulus of elasticity (from table)
 w = uniform load (plf) b = width (in)
 L = design span (ft) d = depth (in)

Equations for other conditions can be found in engineering references.

SECTION PROPERTIES AND ALLOWABLE CAPACITIES

| Depth | Weight (lb/ft) | | | | Allowable Moment (lb-ft) | | | | Allowable Shear (lb) | | | | Moment of Inertia (in ⁴) | | | |
|---------|-------------------|--------|--------|--------|-----------------------------|--------|--------|--------|-------------------------|--------|--------|--------|---|--------|--------|--------|
| | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" |
| 5-1/2" | 2.8 | 3.2 | 6.4 | 9.6 | 1663 | 1940 | 3879 | 5819 | 2255 | 2631 | 5262 | 7893 | 21 | 24 | 49 | 73 |
| 7-1/4" | 3.6 | 4.2 | 8.5 | 12.7 | 2777 | 3240 | 6480 | 9720 | 2973 | 3468 | 6936 | 10404 | 48 | 56 | 111 | 167 |
| 9-1/4" | 4.6 | 5.4 | 10.8 | 16.2 | 4366 | 5094 | 10188 | 15282 | 3793 | 4425 | 8849 | 13274 | 99 | 115 | 231 | 346 |
| 9-1/2" | 4.8 | 5.5 | 11.1 | 16.6 | 4588 | 5353 | 10705 | 16058 | 3895 | 4544 | 9088 | 13633 | 107 | 125 | 250 | 375 |
| 11-1/4" | 5.6 | 6.6 | 13.1 | 19.7 | 6280 | 7327 | 14654 | 21981 | 4613 | 5381 | 10763 | 16144 | 178 | 208 | 415 | 623 |
| 11-7/8" | 5.9 | 6.9 | 13.9 | 20.8 | 6944 | 8101 | 16202 | 24303 | 4869 | 5680 | 11360 | 17041 | 209 | 244 | 488 | 733 |
| 14" | 7.0 | 8.2 | 16.3 | 24.5 | 9427 | 10998 | 21996 | 32994 | 5740 | 6697 | 13393 | 20090 | 343 | 400 | 800 | 1201 |
| 16" | 8.0 | 9.3 | 18.7 | 28.0 | 12080 | 14093 | 28186 | 42280 | 6560 | 7653 | 15307 | 22960 | 512 | 597 | 1195 | 1792 |
| 18" | 9.0 | 10.5 | 21.0 | 31.5 | 15033 | 17539 | 35078 | 52617 | 7380 | 8610 | 17220 | 25830 | 729 | 851 | 1701 | 2552 |

NOTES:

- The Allowable Moment and Shear capacities are for standard load duration and shall be adjusted according to code.
- 3-1/2" wide members are either a single piece of 3-1/2" LSL or two plies of 1-3/4" LSL. 5-1/4" wide members are either the combination of a single piece of 3-1/2" LSL with a single piece of 1-3/4" LSL or three plies of 1-3/4" LSL.
- The tabulated weight is an estimate and shall only be used for design purposes. Contact LP for actual shipping weights.

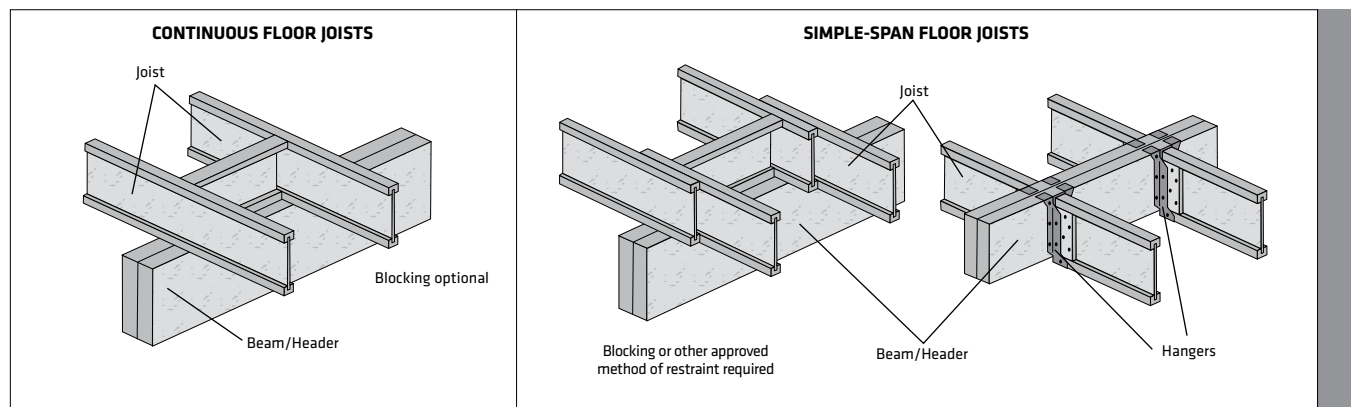
FASTENERS:

Refer to pages 34-35 for information on connecting multiple plies and for the equivalent specific gravity for design of nailed and bolted connections.

| REACTION CAPACITY (LBS) | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|----------------|------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|---------|-------|---------|
| Width | Bearing Length | | | | | | | | | | | | | | | | | | | | |
| | 1-1/2" | 2" | 2-1/2" | 3" | 3-1/2" | 4" | 4-1/2" | 5" | 5-1/2" | 6" | 6-1/2" | 7" | 7-1/2" | 8" | 8-1/2" | 9" | 9-1/2" | 10" | 10-1/2" | 11" | 11-1/2" |
| 1-1/2" | 1968 | 2625 | 3281 | 3937 | 4593 | 5250 | 5906 | 6562 | 7218 | 7875 | 8531 | 9187 | 9843 | 10500 | 11156 | 11812 | 12468 | 13125 | 13781 | 14437 | 15093 |
| 1-3/4" | 2296 | 3062 | 3828 | 4593 | 5359 | 6125 | 6890 | 7656 | 8421 | 9187 | 9953 | 10718 | 11484 | 12250 | 13015 | 13781 | 14546 | 15312 | 16078 | 16843 | 17609 |
| 3-1/2" | 4593 | 6125 | 7656 | 9187 | 10718 | 12250 | 13781 | 15312 | 16843 | 18375 | 19906 | 21437 | 22968 | 24500 | 26031 | 27562 | 29093 | 30625 | 32156 | 33687 | 35218 |
| 5-1/4" | 6888 | 9186 | 11484 | 13779 | 16077 | 18375 | 20672 | 22968 | 25263 | 27561 | 29859 | 32154 | 34452 | 36750 | 39045 | 41343 | 43638 | 45936 | 48234 | 50529 | 52827 |

NOTES:

- The maximum Reactions are based on the compression strength, perpendicular-to-grain, of the LSL. This is suitable for beams bearing on steel or the end-grain of studs.
- Verify that the support for the beam is structurally adequate to carry the reaction. The compressive strength parallel-to-grain, of studs may require more studs than the bearing length above indicates.
- For beams bearing on wood plates, the required bearing length will increase based on the bearing strength (compression perpendicular-to-grain) of the species and grade used for the plate material.
- Verify local code requirements concerning minimum bearing.



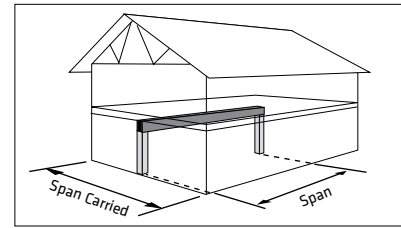
LSL 1.55E Floor Beam Quick Reference Tables

TO USE:

1. Select the correct table for the supported floor joist condition (simple or continuous).
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 10' span carries 15'-0" simple span joists on each side.

SOLUTION: Using the Simple-Span Floor Joists table with 30'-0" span carried, select either **3-1/2" x 11-1/4"** or **5-1/4" x 9-1/4"**.



CONTINUOUS FLOOR JOISTS (DESIGN FLOOR LOADS: 40 PSF LIVE, 15 PSF DEAD)

| Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | 3-1/2" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" |
| 14'-0" | 3-1/2" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| | 5-1/4" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" |
| 16'-0" | 3-1/2" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| | 5-1/4" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" |
| 18'-0" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | 18" |
| 20'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | - |
| 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | - | - | - | - | - | - | - | - | - | - |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 26'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 28'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 30'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

SIMPLE-SPAN FLOOR JOISTS (DESIGN FLOOR LOADS: 40 PSF LIVE, 15 PSF DEAD)

| Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | 3-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" |
| 12'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| | 5-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" |
| 14'-0" | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| | 5-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| 16'-0" | 3-1/2" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" |
| | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" |
| 18'-0" | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| | 5-1/4" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| 20'-0" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | 18" | - |
| 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | - | - | - | - | - | - | - | - | - | - |
| 26'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 28'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 30'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Use the Continuous Floor Joists table where the floor joists are continuous (multiple span) over the beam.
Use the Simple-Span Floor Joists table where the floor joists frame into the side of or end on top of the beam.
2. Span is center-to-center of supports and is valid for simple and equal, continuous beam spans.
3. End supports require 3" bearing. Interior supports require 6" bearing, except 7-1/2" is required where **bold**. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 12 for additional information.
4. Deflections are limited to L/360 live load and L/240 total load.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners.
Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

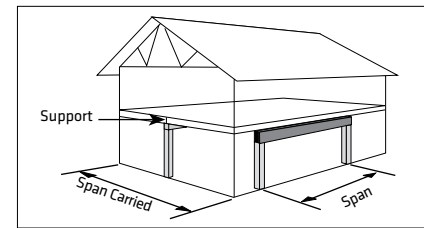
LSL 1.55E Combined Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 9'-6" span supports a 32'-0" span carried for a 20 psf Roof live load.

SOLUTION: Using the correct table for the roof load with 32'-0" span carried, select either **3-1/2" x 11-1/4"** or **5-1/4" x 9-1/2"**.



| DESIGN LOADS ROOF: 20 PSF SNOW OR LIVE (115% or 125%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-6" | | 3-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| 10'-0" | | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | | 3-1/2" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" |
| 14'-0" | | 3-1/2" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| 16'-0" | | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| | | 5-1/4" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| 16'-6" | | 3-1/2" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| 18'-0" | | 3-1/2" | 18" | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| 18'-6" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| 20'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| 22'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

| DESIGN LOADS ROOF: 25 PSF SNOW (115%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-6" | | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 10'-0" | | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| 14'-0" | | 3-1/2" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" |
| 16'-0" | | 3-1/2" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | - |
| | | 5-1/4" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| 16'-6" | | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| 18'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| 18'-6" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | - |
| 20'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| 22'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 12 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

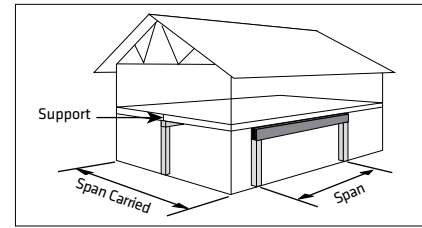
LSL 1.55E Combined Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 9'-6" span supports a 32'-0" span carried for a 40 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 32'-0" span carried, select either **3-1/2" x 14"** or **5-1/4" x 11-1/4"**



| DESIGN LOADS ROOF: 30 PSF SNOW (115%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| | 6'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 8'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 9'-6" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 10'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 12'-0" | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" |
| | 14'-0" | 3-1/2" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | 18" |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| | 16'-0" | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| | 16'-6" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - |
| | 18'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | - |
| | 18'-6" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | 20'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | - | - | - | - | - | - | - | - | - | - |
| | 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| | 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

| DESIGN LOADS ROOF: 40 PSF SNOW (115%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| | 6'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 8'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" |
| | 9'-6" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 10'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" |
| | 12'-0" | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| | 14'-0" | 3-1/2" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| | | 5-1/4" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" |
| | 16'-0" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - |
| | 16'-6" | 3-1/2" | 18" | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| | 18'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| | 18'-6" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | 20'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| | 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| | 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 12 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

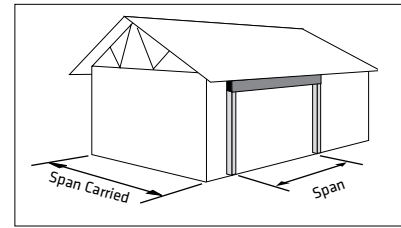
LSL 1.55E Roof Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 16'-6" span supports a 38'-0" span carried for a 25 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 38'-0" span carried, select either **3-1/2" x 18"** or **5-1/4" x 16"**.



| DESIGN LOADS ROOF: 20 PSF SNOW OR LIVE (115% or 125%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|---|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| | 6'-0" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 8'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 9'-6" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 10'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 12'-0" | 3-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 14'-0" | 3-1/2" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | 16'-0" | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| 5-1/4" | | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | |
| 16'-6" | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | |
| | 5-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | |
| 18'-0" | 3-1/2" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | |
| | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | |
| 18'-6" | 3-1/2" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | |
| | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | |
| 20'-0" | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | |
| | 5-1/4" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | |
| 22'-0" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - | |
| | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - | |
| | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - | |

| DESIGN LOADS ROOF: 25 PSF SNOW (15%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| | 6'-0" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 8'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 9'-6" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 10'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 12'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 14'-0" | 3-1/2" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" |
| | 16'-0" | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" |
| 5-1/4" | | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | |
| 16'-6" | 3-1/2" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | |
| | 5-1/4" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | |
| 18'-0" | 3-1/2" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | |
| | 5-1/4" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | |
| 18'-6" | 3-1/2" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - | |
| | 5-1/4" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | |
| 20'-0" | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - | |
| | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | |
| 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - | |
| | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - | |
| | 5-1/4" | 18" | 18" | - | - | - | - | - | - | - | - | - | |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 12 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads assume a 2' maximum overhang on the roof.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.55E Roof Beam Quick Reference Tables

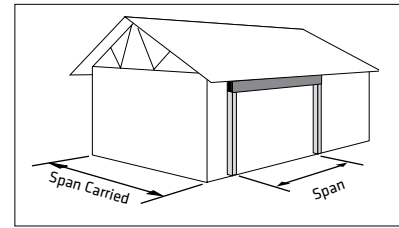
TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 16'-6" span supports a 38'-0" span carried for a 40 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 38'-0" span carried, select a **5-1/4" x 18"**.

NOTE: A 3-1/2" beam does not work at an 18" depth.



| DESIGN LOADS ROOF: 30 PSF SNOW (115%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|---|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| | 6'-0" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 8'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| | 9'-6" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 10'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 12'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 14'-0" | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| | 16'-0" | 3-1/2" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| | 16'-6" | 3-1/2" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" |
| | 18'-0" | 3-1/2" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| | | 5-1/4" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| | 18'-6" | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| | | 5-1/4" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| | 20'-0" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - |
| | 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | - | - | - | - | - | - | - | - | - | - |

| DESIGN LOADS ROOF: 40 PSF SNOW (115%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|---|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| | 6'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| | 8'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 9'-6" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" |
| | 10'-0" | 3-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 12'-0" | 3-1/2" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" |
| | 14'-0" | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" |
| | | 5-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" |
| | 16'-0" | 3-1/2" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| | | 5-1/4" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" |
| | 16'-6" | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| | | 5-1/4" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| | 18'-0" | 3-1/2" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - |
| | 18'-6" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| | 20'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | - | - | - | - | - | - | - | - | - | - |
| | 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 12 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads assume a 2' maximum overhang on the roof.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.55E Uniform Floor Load (PLF) Tables: 1-1/2"

TO USE:

1. Select the span required.
2. Compare the design total load to the Total Load column.
3. Compare the design live load to the appropriate Live Load column.
4. Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 16'-6" beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following design loads: Live Load = 480 plf; Total Load = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = $660/2 = 330$ plf
 Live Load per ply = $480/2 = 240$ plf
Use 2 plies 1-1/2" x 18"
 (Total Load = 432 plf, Live Load = 330 plf)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = $660/3 = 220$ plf
 Live Load per ply = $480/3 = 160$ plf
Use 3 plies 1-1/2" x 14"
 (Total Load = 237 plf, Live Load = 162 plf)

| Span | 1-1/2" x 5-1/2" | | | 1-1/2" x 7-1/4" | | | 1-1/2" x 9-1/4" | | | 1-1/2" x 9-1/2" | | | 1-1/2" x 11-1/4" | | | Span |
|--------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|------------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | 253 | 338 | 504 | 536 | 714 | 885 | 998 | | 1208 | 1066 | | 1241 | | | 1470 | 5' |
| 6' | 152 | 202 | 301 | 328 | 438 | 613 | 629 | 839 | 965 | 674 | 898 | 1014 | 1032 | | 1224 | 6' |
| 7' | 97 | 130 | 193 | 214 | 286 | 425 | 418 | 558 | 708 | 449 | 599 | 744 | 700 | 934 | 1019 | 7' |
| 8' | 66 | 88 | 130 | 147 | 196 | 291 | 291 | 388 | 541 | 313 | 417 | 568 | 494 | 659 | 779 | 8' |
| 9' | 47 | 62 | 91 | 105 | 140 | 206 | 210 | 280 | 415 | 226 | 301 | 447 | 360 | 480 | 614 | 9' |
| 9'-6" | 40 | 53 | 77 | 90 | 120 | 176 | 180 | 240 | 356 | 194 | 259 | 384 | 310 | 414 | 551 | 9'-6" |
| 10' | 34 | 46 | 66 | 77 | 103 | 151 | 156 | 208 | 307 | 168 | 224 | 331 | 270 | 360 | 496 | 10' |
| 11' | - | - | - | 58 | 78 | 114 | 119 | 158 | 233 | 128 | 171 | 252 | 207 | 276 | 408 | 11' |
| 12' | - | - | - | 45 | 60 | 87 | 92 | 123 | 180 | 100 | 133 | 195 | 162 | 216 | 318 | 12' |
| 13' | - | - | - | 36 | 48 | 68 | 73 | 98 | 142 | 79 | 105 | 154 | 129 | 172 | 252 | 13' |
| 14' | - | - | - | - | - | - | 59 | 79 | 114 | 64 | 85 | 123 | 104 | 139 | 203 | 14' |
| 15' | - | - | - | - | - | - | 48 | 64 | 92 | 52 | 69 | 100 | 85 | 114 | 165 | 15' |
| 16' | - | - | - | - | - | - | 40 | 53 | 75 | 43 | 57 | 82 | 71 | 94 | 136 | 16' |
| 16'-6" | - | - | - | - | - | - | 36 | 48 | 68 | 39 | 52 | 74 | 65 | 86 | 124 | 16'-6" |
| 17' | - | - | - | - | - | - | 33 | 44 | 62 | 36 | 48 | 67 | 59 | 79 | 113 | 17' |
| 18' | - | - | - | - | - | - | - | - | - | 30 | 40 | 56 | 50 | 67 | 95 | 18' |
| 18'-6" | - | - | - | - | - | - | - | - | - | - | - | - | 46 | 62 | 87 | 18'-6" |
| 19' | - | - | - | - | - | - | - | - | - | - | - | - | 43 | 57 | 80 | 19' |
| 20' | - | - | - | - | - | - | - | - | - | - | - | - | 37 | 49 | 68 | 20' |

| Span | 1-1/2" x 11-7/8" | | | 1-1/2" x 14" | | | 1-1/2" x 16" | | | 1-1/2" x 18" | | | Span |
|--------|------------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | | | 1552 | | | 1829 | | | 2091 | | | 2352 | 5' |
| 6' | 1177 | | 1292 | | | 1523 | | | 1741 | | | 1959 | 6' |
| 7' | 804 | 1072 | 1106 | 1207 | | 1305 | | | 1491 | | | 1677 | 7' |
| 8' | 570 | 760 | 862 | 869 | | 1141 | 1207 | | 1304 | | | 1467 | 8' |
| 9' | 417 | 556 | 679 | 644 | 858 | 924 | 904 | | 1158 | 1207 | | 1303 | 9' |
| 9'-6" | 360 | 480 | 609 | 559 | 745 | 828 | 789 | 1052 | 1062 | 1058 | | 1233 | 9'-6" |
| 10' | 313 | 417 | 549 | 488 | 651 | 747 | 692 | 923 | 958 | 933 | | 1171 | 10' |
| 11' | 240 | 321 | 453 | 378 | 504 | 616 | 540 | 720 | 790 | 733 | 978 | 984 | 11' |
| 12' | 188 | 251 | 371 | 298 | 398 | 516 | 428 | 571 | 663 | 585 | 781 | 826 | 12' |
| 13' | 150 | 200 | 295 | 239 | 319 | 439 | 345 | 460 | 563 | 474 | 632 | 702 | 13' |
| 14' | 122 | 162 | 238 | 194 | 259 | 377 | 282 | 376 | 485 | 388 | 518 | 604 | 14' |
| 15' | 100 | 133 | 194 | 160 | 213 | 313 | 232 | 310 | 421 | 322 | 429 | 525 | 15' |
| 16' | 83 | 110 | 160 | 133 | 177 | 259 | 194 | 259 | 369 | 270 | 360 | 460 | 16' |
| 16'-6" | 76 | 101 | 146 | 122 | 162 | 237 | 178 | 237 | 346 | 248 | 330 | 432 | 16'-6" |
| 17' | 69 | 92 | 133 | 112 | 149 | 217 | 163 | 218 | 319 | 228 | 304 | 407 | 17' |
| 18' | 59 | 78 | 112 | 95 | 126 | 183 | 139 | 185 | 270 | 194 | 259 | 362 | 18' |
| 18'-6" | 54 | 72 | 103 | 87 | 117 | 168 | 128 | 171 | 249 | 180 | 240 | 342 | 18'-6" |
| 19' | 50 | 67 | 94 | 81 | 108 | 155 | 119 | 159 | 231 | 167 | 222 | 324 | 19' |
| 20' | 43 | 57 | 80 | 70 | 93 | 133 | 103 | 137 | 198 | 144 | 192 | 279 | 20' |

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Total Load is for normal (100%) duration and has been adjusted to account for the self-weight of the member.
4. Live Load deflection has been limited to L/360 or L/480 as noted in the table.
5. Total deflection has been limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

ADDITIONAL NOTES:

1. The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check both the Total Load and the appropriate Live Load column.
3. Where the Live Load is blank, the Total Load governs the design.
4. Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
5. The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

| ACTUAL DEFLECTION BASED ON SPAN AND LIMIT | | | |
|--|--------|--------|---------|
| Span (ft) | L/480 | L/360 | L/240 |
| 10' | 1/4" | 5/16" | 1/2" |
| 12' | 5/16" | 3/8" | 5/8" |
| 14' | 3/8" | 7/16" | 11/16" |
| 16' | 3/8" | 9/16" | 13/16" |
| 18' | 7/16" | 5/8" | 7/8" |
| 20' | 1/2" | 11/16" | 1" |
| 22' | 9/16" | 3/4" | 1-1/8" |
| 24' | 5/8" | 13/16" | 1-3/16" |
| 26' | 5/8" | 7/8" | 1-5/16" |
| 28' | 11/16" | 15/16" | 1-3/8" |
| 30' | 3/4" | 1" | 1-1/2" |

* Deflections rounded to the nearest 1/16"

LSL 1.55E Uniform Floor Load (PLF) Tables: 1-3/4"

TO USE:

1. Select the span required.
2. Compare the design total load to the Total Load column.
3. Compare the design live load to the appropriate Live Load column.
4. Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 16'-6" beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following design loads: Live Load = 480 plf; Total Load = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = $660/2 = 330$ plf
Live Load per ply = $480/2 = 240$ plf
Use 2 plies 1-3/4" x 16"
(Total Load = 404 plf, Live Load = 277 plf)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = $660/3 = 220$ plf
Live Load per ply = $480/3 = 160$ plf
Use 3 plies 1-3/4" x 14"
(Total Load = 276 plf, Live Load = 189 plf)

| Span | 1-3/4" x 5-1/2" | | | 1-3/4" x 7-1/4" | | | 1-3/4" x 9-1/4" | | | 1-3/4" x 9-1/2" | | | 1-3/4" x 11-1/4" | | | Span |
|--------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|------------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | 296 | 394 | 588 | 625 | 833 | 1032 | 1164 | | 1410 | 1243 | | 1448 | | | 1715 | 5' |
| 6' | 177 | 236 | 351 | 383 | 511 | 715 | 734 | 978 | 1126 | 786 | 1048 | 1183 | 1204 | | 1428 | 6' |
| 7' | 114 | 152 | 225 | 250 | 333 | 496 | 488 | 651 | 826 | 524 | 699 | 868 | 817 | 1089 | 1189 | 7' |
| 8' | 77 | 103 | 152 | 171 | 229 | 339 | 339 | 453 | 631 | 365 | 487 | 663 | 576 | 769 | 909 | 8' |
| 9' | 55 | 73 | 107 | 122 | 163 | 241 | 245 | 326 | 484 | 264 | 352 | 522 | 420 | 560 | 717 | 9' |
| 9'-6" | 47 | 62 | 90 | 105 | 140 | 205 | 210 | 280 | 415 | 226 | 302 | 448 | 362 | 483 | 642 | 9'-6" |
| 10' | 40 | 53 | 77 | 90 | 120 | 177 | 182 | 242 | 358 | 196 | 261 | 387 | 315 | 420 | 579 | 10' |
| 11' | 30 | 40 | 57 | 68 | 91 | 133 | 138 | 185 | 272 | 149 | 199 | 294 | 241 | 322 | 476 | 11' |
| 12' | - | - | - | 53 | 71 | 102 | 108 | 144 | 210 | 116 | 155 | 228 | 189 | 252 | 371 | 12' |
| 13' | - | - | - | 42 | 56 | 80 | 85 | 114 | 166 | 92 | 123 | 179 | 150 | 200 | 294 | 13' |
| 14' | - | - | - | 33 | 45 | 63 | 69 | 92 | 133 | 74 | 99 | 144 | 121 | 162 | 237 | 14' |
| 15' | - | - | - | - | - | - | 56 | 75 | 107 | 61 | 81 | 116 | 99 | 133 | 193 | 15' |
| 16' | - | - | - | - | - | - | 46 | 62 | 88 | 50 | 67 | 95 | 82 | 110 | 159 | 16' |
| 16'-6" | - | - | - | - | - | - | 42 | 57 | 80 | 46 | 61 | 87 | 75 | 101 | 145 | 16'-6" |
| 17' | - | - | - | - | - | - | 39 | 52 | 73 | 42 | 56 | 79 | 69 | 92 | 132 | 17' |
| 18' | - | - | - | - | - | - | 33 | 44 | 60 | 35 | 47 | 66 | 58 | 78 | 111 | 18' |
| 18'-6" | - | - | - | - | - | - | 30 | 40 | 55 | 33 | 44 | 60 | 54 | 72 | 102 | 18'-6" |
| 19' | - | - | - | - | - | - | - | - | - | 30 | 40 | 55 | 50 | 67 | 93 | 19' |
| 20' | - | - | - | - | - | - | - | - | - | - | - | - | 43 | 57 | 79 | 20' |

| Span | 1-3/4" x 11-7/8" | | | 1-3/4" x 14" | | | 1-3/4" x 16" | | | 1-3/4" x 18" | | | Span |
|--------|------------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | | | 1810 | | | 2134 | | | 2439 | | | 2744 | 5' |
| 6' | 1373 | | 1507 | | | 1777 | | | 2031 | | | 2285 | 6' |
| 7' | 938 | 1250 | 1291 | 1408 | | 1522 | | | 1740 | | | 1957 | 7' |
| 8' | 665 | 886 | 1005 | 1014 | | 1331 | 1408 | | 1521 | | | 1711 | 8' |
| 9' | 486 | 648 | 793 | 751 | 1001 | 1078 | 1055 | | 1351 | 1408 | | 1520 | 9' |
| 9'-6" | 420 | 560 | 711 | 652 | 870 | 966 | 921 | 1228 | 1239 | 1235 | | 1439 | 9'-6" |
| 10' | 365 | 487 | 641 | 570 | 760 | 871 | 808 | 1077 | 1118 | 1088 | | 1367 | 10' |
| 11' | 281 | 374 | 528 | 441 | 588 | 718 | 630 | 840 | 922 | 855 | 1141 | 1149 | 11' |
| 12' | 220 | 293 | 433 | 348 | 464 | 602 | 500 | 667 | 773 | 683 | 911 | 963 | 12' |
| 13' | 175 | 234 | 344 | 279 | 372 | 512 | 403 | 537 | 657 | 553 | 738 | 819 | 13' |
| 14' | 142 | 189 | 277 | 226 | 302 | 440 | 329 | 438 | 565 | 453 | 605 | 705 | 14' |
| 15' | 116 | 155 | 226 | 186 | 249 | 365 | 271 | 362 | 491 | 376 | 501 | 613 | 15' |
| 16' | 96 | 129 | 187 | 155 | 207 | 302 | 226 | 302 | 431 | 315 | 420 | 537 | 16' |
| 16'-6" | 88 | 118 | 170 | 142 | 189 | 276 | 208 | 277 | 404 | 289 | 385 | 504 | 16'-6" |
| 17' | 81 | 108 | 155 | 130 | 174 | 253 | 191 | 255 | 373 | 266 | 355 | 475 | 17' |
| 18' | 68 | 91 | 130 | 111 | 148 | 213 | 162 | 216 | 316 | 226 | 302 | 422 | 18' |
| 18'-6" | 63 | 84 | 120 | 102 | 136 | 196 | 150 | 200 | 291 | 210 | 280 | 399 | 18'-6" |
| 19' | 58 | 78 | 110 | 94 | 126 | 181 | 139 | 185 | 269 | 194 | 259 | 378 | 19' |
| 20' | 50 | 67 | 94 | 81 | 109 | 155 | 120 | 160 | 231 | 168 | 224 | 326 | 20' |

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Total Load is for normal (100%) duration and has been adjusted to account for the self-weight of the member.
4. Live Load deflection has been limited to L/360 or L/480 as noted in the table.
5. Total deflection has been limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

| ACTUAL DEFLECTION BASED ON SPAN AND LIMIT | | | |
|--|--------|--------|---------|
| Span (ft) | L/480 | L/360 | L/240 |
| 10' | 1/4" | 5/16" | 1/2" |
| 12' | 5/16" | 3/8" | 5/8" |
| 14' | 3/8" | 7/16" | 11/16" |
| 16' | 3/8" | 9/16" | 13/16" |
| 18' | 7/16" | 5/8" | 7/8" |
| 20' | 1/2" | 11/16" | 1" |
| 22' | 9/16" | 3/4" | 1-1/8" |
| 24' | 5/8" | 13/16" | 1-3/16" |
| 26' | 5/8" | 7/8" | 1-5/16" |
| 28' | 11/16" | 15/16" | 1-3/8" |
| 30' | 3/4" | 1" | 1-1/2" |

* Deflections rounded to the nearest 1/16".

ADDITIONAL NOTES:

1. The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check both the Total Load and the appropriate Live Load column.
3. Where the Live Load is blank, the Total Load governs the design.
4. Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
5. The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

LSL 1.55E Uniform Roof Load (PLF) Tables: 1-1/2"

TO USE:

- Select the span required. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof slope adjustment factor from the table at the bottom of this page.
- Compare the design total load to the appropriate Total Load column for Snow (115%) or Non-Snow (125%).
- Compare the design snow/live load to the appropriate Snow/Live Load column for L/360 or L/240. For a snow/live load deflection limit of L/480, compare the design snow/live load to the L/480 Live Load column from the Uniform Floor Load Tables.
- Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 12' beam span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/240 Snow Load deflection limit for the following design loads:
Snow Load = 720 plf; Dead Load = 1120 plf

CALCULATE BEAM SPAN: 12' x 1.054 = 12.65' → **Use Span = 13'**

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = 1120/2 = 560 plf
Snow Load per ply = 720/2 = 360 plf

Use 2 plies 1-1/2" x 16"

(Total Load = 649 plf, Snow Load = 691 plf)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = 1120/3 = 374 plf
Snow Load per ply = 720/3 = 240 plf

Use 3 plies 1-1/2" x 14"

(Total Load = 506 plf, Snow Load = 478 plf)

| Span | 1-1/2" x 5-1/2" | | | | 1-1/2" x 7-1/4" | | | | 1-1/2" x 9-1/4" | | | | 1-1/2" x 9-1/2" | | | | 1-1/2" x 11-1/4" | | | | Span |
|--------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|------------------|-------|------------|---------------|--------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | |
| 5' | 338 | 507 | 609 | 662 | 714 | 1072 | 1018 | 1107 | 1331 | | 1391 | 1512 | 1421 | | 1428 | 1553 | | | 1691 | 1839 | 5' |
| 6' | 202 | 304 | 403 | 403 | 438 | 657 | 706 | 767 | 839 | | 1111 | 1208 | 898 | | 1167 | 1269 | 1376 | | 1408 | 1531 | 6' |
| 7' | 130 | 195 | 258 | 258 | 286 | 429 | 517 | 563 | 558 | 837 | 815 | 886 | 599 | 899 | 856 | 931 | 934 | | 1173 | 1276 | 7' |
| 8' | 88 | 133 | 174 | 174 | 196 | 294 | 389 | 389 | 388 | 582 | 623 | 677 | 417 | 626 | 654 | 712 | 659 | | 897 | 975 | 8' |
| 9' | 62 | 94 | 123 | 123 | 140 | 210 | 277 | 277 | 280 | 420 | 491 | 534 | 301 | 452 | 516 | 561 | 480 | 720 | 707 | 769 | 9' |
| 9'-6" | 53 | 80 | 104 | 104 | 120 | 180 | 236 | 236 | 240 | 360 | 440 | 476 | 259 | 389 | 462 | 503 | 414 | 621 | 634 | 690 | 9'-6" |
| 10' | 46 | 69 | 89 | 89 | 103 | 155 | 203 | 203 | 208 | 312 | 397 | 411 | 224 | 336 | 417 | 444 | 360 | 540 | 572 | 622 | 10' |
| 11' | 34 | 52 | 67 | 67 | 78 | 117 | 153 | 153 | 158 | 238 | 312 | 312 | 171 | 256 | 337 | 337 | 276 | 414 | 471 | 513 | 11' |
| 12' | - | - | - | - | 60 | 91 | 118 | 118 | 123 | 185 | 242 | 242 | 133 | 200 | 262 | 262 | 216 | 324 | 395 | 426 | 12' |
| 13' | - | - | - | - | 48 | 72 | 92 | 92 | 98 | 147 | 191 | 191 | 105 | 158 | 207 | 207 | 172 | 258 | 336 | 338 | 13' |
| 14' | - | - | - | - | 38 | 58 | 73 | 73 | 79 | 118 | 153 | 153 | 85 | 128 | 166 | 166 | 139 | 209 | 273 | 273 | 14' |
| 15' | - | - | - | - | 31 | 47 | 59 | 59 | 64 | 97 | 124 | 124 | 69 | 104 | 135 | 135 | 114 | 171 | 222 | 222 | 15' |
| 16' | - | - | - | - | - | - | - | - | 53 | 80 | 102 | 102 | 57 | 86 | 111 | 111 | 94 | 142 | 183 | 183 | 16' |
| 16'-6" | - | - | - | - | - | - | - | - | 48 | 73 | 93 | 93 | 52 | 79 | 101 | 101 | 86 | 130 | 167 | 167 | 16'-6" |
| 17' | - | - | - | - | - | - | - | - | 44 | 67 | 85 | 85 | 48 | 72 | 92 | 92 | 79 | 119 | 153 | 153 | 17' |
| 18' | - | - | - | - | - | - | - | - | 37 | 56 | 71 | 71 | 40 | 61 | 77 | 77 | 67 | 100 | 128 | 128 | 18' |
| 18'-6" | - | - | - | - | - | - | - | - | 34 | 52 | 65 | 65 | 37 | 56 | 70 | 70 | 62 | 93 | 118 | 118 | 18'-6" |
| 19' | - | - | - | - | - | - | - | - | 32 | 48 | 59 | 59 | 34 | 52 | 65 | 65 | 57 | 86 | 109 | 109 | 19' |
| 20' | - | - | - | - | - | - | - | - | - | - | - | - | 30 | 45 | 55 | 55 | 49 | 74 | 93 | 93 | 20' |

| Span | 1-1/2" x 11-7/8" | | | | 1-1/2" x 14" | | | | 1-1/2" x 16" | | | | 1-1/2" x 18" | | | | Span |
|--------|------------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|--------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | |
| 5' | | | 1785 | 1941 | | | 2105 | 2289 | | | 2406 | 2616 | | | 2706 | 2943 | 5' |
| 6' | 1569 | | 1487 | 1616 | | | 1753 | 1906 | | | 2003 | 2178 | | | 2254 | 2451 | 6' |
| 7' | 1072 | | 1273 | 1385 | 1609 | | 1501 | 1633 | | | 1716 | 1866 | | | 1930 | 2099 | 7' |
| 8' | 760 | | 992 | 1079 | 1159 | | 1313 | 1428 | 1609 | | 1500 | 1632 | | | 1688 | 1836 | 8' |
| 9' | 556 | 834 | 782 | 851 | 858 | | 1063 | 1156 | 1206 | | 1333 | 1449 | 1609 | | 1499 | 1631 | 9' |
| 9'-6" | 480 | 720 | 701 | 763 | 745 | | 953 | 1037 | 1052 | | 1223 | 1330 | 1411 | | 1420 | 1544 | 9'-6" |
| 10' | 417 | 626 | 632 | 688 | 651 | | 860 | 935 | 923 | | 1103 | 1199 | 1244 | | 1348 | 1467 | 10' |
| 11' | 321 | 481 | 522 | 567 | 504 | 756 | 709 | 772 | 720 | | 910 | 990 | 978 | | 1134 | 1233 | 11' |
| 12' | 251 | 377 | 437 | 476 | 398 | 597 | 595 | 647 | 571 | | 763 | 830 | 781 | | 951 | 1034 | 12' |
| 13' | 200 | 301 | 372 | 395 | 319 | 478 | 506 | 550 | 460 | 691 | 649 | 706 | 632 | | 809 | 880 | 13' |
| 14' | 162 | 244 | 319 | 319 | 259 | 389 | 435 | 473 | 376 | 564 | 559 | 608 | 518 | | 696 | 758 | 14' |
| 15' | 133 | 200 | 261 | 261 | 213 | 320 | 378 | 411 | 310 | 465 | 485 | 528 | 429 | 644 | 605 | 659 | 15' |
| 16' | 110 | 166 | 215 | 215 | 177 | 266 | 331 | 348 | 259 | 389 | 426 | 463 | 360 | 540 | 531 | 578 | 16' |
| 16'-6" | 101 | 152 | 196 | 196 | 162 | 244 | 311 | 318 | 237 | 356 | 400 | 435 | 330 | 496 | 499 | 543 | 16'-6" |
| 17' | 92 | 139 | 180 | 180 | 149 | 224 | 292 | 292 | 218 | 327 | 376 | 409 | 304 | 456 | 469 | 511 | 17' |
| 18' | 78 | 118 | 151 | 151 | 126 | 190 | 246 | 246 | 185 | 278 | 335 | 363 | 259 | 389 | 417 | 454 | 18' |
| 18'-6" | 72 | 109 | 139 | 139 | 117 | 175 | 227 | 227 | 171 | 257 | 316 | 335 | 240 | 360 | 395 | 430 | 18'-6" |
| 19' | 67 | 100 | 128 | 128 | 108 | 162 | 210 | 210 | 159 | 239 | 299 | 310 | 222 | 334 | 374 | 407 | 19' |
| 20' | 57 | 86 | 109 | 109 | 93 | 140 | 180 | 180 | 137 | 206 | 267 | 267 | 192 | 288 | 336 | 366 | 20' |

SLOPE ADJUSTMENT

| Slope | Factor |
|-------|--------|
| 2:12 | 1.014 |
| 3:12 | 1.031 |
| 4:12 | 1.054 |
| 5:12 | 1.083 |
| 6:12 | 1.118 |
| 7:12 | 1.158 |
| 8:12 | 1.202 |
| 9:12 | 1.250 |
| 10:12 | 1.302 |
| 11:12 | 1.357 |
| 12:12 | 1.414 |

DESIGN ASSUMPTIONS:

- Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
- The values in the tables are for uniform loads only.
- Total Load is for Snow (115%) or Non-Snow (125%) duration, as noted in the table, and has been adjusted to account for the self-weight of the member.
- Snow/Live Load deflection has been limited to L/360 or L/240 as noted in the table.
- Total deflection has been limited to L/180. Long term deflection (creep) has not been considered.
- These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
- Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

ADDITIONAL NOTES:

- The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
- For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table above.
- The designer shall check both the appropriate Total Load and the appropriate Snow/Live Load column.
- Where the Snow/Live Load is blank, the Total Load governs the design.
- Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
- The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
- The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
- Do not use a product where designated "-" without further analysis by a design professional.

LSL 1.55E Uniform Roof Load (PLF) Tables: 1-3/4"

TO USE:

- Select the span required. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof slope adjustment factor from the table at the bottom of this page.
- Compare the design total load to the appropriate Total Load column for Snow (115%) or Non-Snow (125%).
- Compare the design snow/live load to the appropriate Snow/Live Load column for L/360 or L/240. For a snow/live load deflection limit of L/480, compare the design snow/live load to the L/480 Live Load column from the Uniform Floor Load Tables.
- Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 12' beam span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/240 Snow Load deflection limit for the following design loads:
Snow Load = 720 plf; Dead Load = 1120 plf

CALCULATE BEAM SPAN: 12' x 1.054 = 12.65' → **Use Span = 13'**

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = 1120/2 = 560 plf
Snow Load per ply = 720/2 = 360 plf
Use 2 plies 1-3/4" x 14"
(Total Load = 590 plf, Snow Load = 558 plf)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = 1120/3 = 374 plf
Snow Load per ply = 720/3 = 240 plf
Use 3 plies 1-3/4" x 11-1/4"
(Total Load = 392 plf, Snow Load = 301 plf)

| Span | 1-3/4" x 5-1/2" | | | | 1-3/4" x 7-1/4" | | | | 1-3/4" x 9-1/4" | | | | 1-3/4" x 9-1/2" | | | | 1-3/4" x 11-1/4" | | | | Span |
|--------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|------------------|-------|------------|---------------|--------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | |
| 5' | 394 | 592 | 710 | 772 | 833 | 1250 | 1188 | 1291 | 1553 | | 1622 | 1764 | 1658 | | 1666 | 1812 | | | 1973 | 2145 | 5' |
| 6' | 236 | 355 | 470 | 470 | 511 | 766 | 823 | 895 | 978 | | 1296 | 1409 | 1048 | | 1362 | 1481 | 1605 | | 1643 | 1787 | 6' |
| 7' | 152 | 228 | 301 | 301 | 333 | 500 | 604 | 657 | 651 | 977 | 951 | 1034 | 699 | 1049 | 999 | 1086 | 1089 | | 1369 | 1488 | 7' |
| 8' | 103 | 155 | 203 | 203 | 229 | 343 | 454 | 454 | 453 | 679 | 726 | 790 | 487 | 731 | 763 | 830 | 769 | | 1046 | 1138 | 8' |
| 9' | 73 | 110 | 143 | 143 | 163 | 245 | 323 | 323 | 326 | 490 | 573 | 623 | 352 | 528 | 602 | 655 | 560 | 840 | 825 | 898 | 9' |
| 9'-6" | 62 | 94 | 122 | 122 | 140 | 210 | 276 | 276 | 280 | 421 | 513 | 556 | 302 | 453 | 540 | 587 | 483 | 725 | 740 | 805 | 9'-6" |
| 10' | 53 | 80 | 104 | 104 | 120 | 181 | 237 | 237 | 242 | 364 | 463 | 480 | 261 | 392 | 486 | 518 | 420 | 630 | 667 | 726 | 10' |
| 11' | 40 | 61 | 78 | 78 | 91 | 137 | 179 | 179 | 185 | 277 | 364 | 364 | 199 | 299 | 394 | 394 | 322 | 483 | 550 | 598 | 11' |
| 12' | 31 | 47 | 59 | 59 | 71 | 106 | 137 | 137 | 144 | 216 | 283 | 283 | 155 | 233 | 305 | 305 | 252 | 378 | 461 | 497 | 12' |
| 13' | - | - | - | - | 56 | 84 | 108 | 108 | 114 | 171 | 223 | 223 | 123 | 185 | 241 | 241 | 200 | 301 | 392 | 395 | 13' |
| 14' | - | - | - | - | 45 | 67 | 86 | 86 | 92 | 138 | 179 | 179 | 99 | 149 | 193 | 193 | 162 | 243 | 318 | 318 | 14' |
| 15' | - | - | - | - | 36 | 55 | 69 | 69 | 75 | 113 | 145 | 145 | 81 | 122 | 157 | 157 | 133 | 199 | 259 | 259 | 15' |
| 16' | - | - | - | - | 30 | 45 | 56 | 56 | 62 | 93 | 119 | 119 | 67 | 101 | 129 | 129 | 110 | 165 | 214 | 214 | 16' |
| 16'-6" | - | - | - | - | - | - | - | - | 57 | 85 | 108 | 108 | 61 | 92 | 117 | 117 | 101 | 151 | 195 | 195 | 16'-6" |
| 17' | - | - | - | - | - | - | - | - | 52 | 78 | 99 | 99 | 56 | 84 | 107 | 107 | 92 | 139 | 178 | 178 | 17' |
| 18' | - | - | - | - | - | - | - | - | 44 | 66 | 83 | 83 | 47 | 71 | 90 | 90 | 78 | 117 | 150 | 150 | 18' |
| 18'-6" | - | - | - | - | - | - | - | - | 40 | 61 | 76 | 76 | 44 | 66 | 82 | 82 | 72 | 108 | 138 | 138 | 18'-6" |
| 19' | - | - | - | - | - | - | - | - | 37 | 56 | 69 | 69 | 40 | 61 | 76 | 76 | 67 | 100 | 127 | 127 | 19' |
| 20' | - | - | - | - | - | - | - | - | 32 | 48 | 59 | 59 | 35 | 52 | 64 | 64 | 57 | 86 | 108 | 108 | 20' |

| Span | 1-3/4" x 11-7/8" | | | | 1-3/4" x 14" | | | | 1-3/4" x 16" | | | | 1-3/4" x 18" | | | | Span |
|--------|------------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|--------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | |
| 5' | | | 2083 | 2265 | | | 2456 | 2670 | | | 2807 | 3052 | | | 3157 | 3433 | 5' |
| 6' | 1831 | | 1735 | 1886 | | | 2045 | 2224 | | | 2337 | 2541 | | | 2629 | 2859 | 6' |
| 7' | 1250 | | 1486 | 1615 | 1877 | | 1752 | 1905 | | | 2002 | 2177 | | | 2252 | 2449 | 7' |
| 8' | 886 | | 1157 | 1258 | 1352 | | 1532 | 1666 | 1877 | | 1750 | 1904 | | | 1969 | 2142 | 8' |
| 9' | 648 | 973 | 913 | 993 | 1001 | | 1240 | 1349 | 1407 | | 1555 | 1691 | 1877 | | 1749 | 1902 | 9' |
| 9'-6" | 560 | 840 | 818 | 890 | 870 | | 1112 | 1210 | 1228 | | 1427 | 1552 | 1647 | | 1657 | 1802 | 9'-6" |
| 10' | 487 | 731 | 738 | 803 | 760 | | 1003 | 1091 | 1077 | | 1287 | 1399 | 1451 | | 1573 | 1711 | 10' |
| 11' | 374 | 562 | 609 | 662 | 588 | 883 | 828 | 900 | 840 | | 1062 | 1155 | 1141 | | 1323 | 1439 | 11' |
| 12' | 293 | 440 | 510 | 555 | 464 | 696 | 694 | 755 | 667 | | 891 | 969 | 911 | | 1110 | 1207 | 12' |
| 13' | 234 | 351 | 434 | 461 | 372 | 558 | 590 | 642 | 537 | 806 | 757 | 824 | 738 | | 944 | 1027 | 13' |
| 14' | 189 | 284 | 372 | 372 | 302 | 453 | 508 | 552 | 438 | 658 | 652 | 709 | 605 | | 812 | 884 | 14' |
| 15' | 155 | 233 | 304 | 304 | 249 | 373 | 441 | 480 | 362 | 543 | 566 | 617 | 501 | 752 | 706 | 769 | 15' |
| 16' | 129 | 193 | 251 | 251 | 207 | 311 | 387 | 406 | 302 | 453 | 497 | 541 | 420 | 630 | 619 | 674 | 16' |
| 16'-6" | 118 | 177 | 229 | 229 | 189 | 284 | 363 | 371 | 277 | 416 | 466 | 508 | 385 | 578 | 582 | 633 | 16'-6" |
| 17' | 108 | 162 | 210 | 210 | 174 | 261 | 340 | 340 | 255 | 382 | 439 | 478 | 355 | 532 | 547 | 596 | 17' |
| 18' | 91 | 137 | 176 | 176 | 148 | 222 | 287 | 287 | 216 | 325 | 390 | 424 | 302 | 453 | 487 | 530 | 18' |
| 18'-6" | 84 | 127 | 162 | 162 | 136 | 205 | 265 | 265 | 200 | 300 | 369 | 391 | 280 | 420 | 460 | 501 | 18'-6" |
| 19' | 78 | 117 | 150 | 150 | 126 | 189 | 245 | 245 | 185 | 278 | 349 | 362 | 259 | 389 | 436 | 475 | 19' |
| 20' | 67 | 101 | 128 | 128 | 109 | 163 | 210 | 210 | 160 | 240 | 311 | 311 | 224 | 337 | 392 | 427 | 20' |

SLOPE ADJUSTMENT

| Slope | Factor |
|-------|--------|
| 2:12 | 1.014 |
| 3:12 | 1.031 |
| 4:12 | 1.054 |
| 5:12 | 1.083 |
| 6:12 | 1.118 |
| 7:12 | 1.158 |
| 8:12 | 1.202 |
| 9:12 | 1.250 |
| 10:12 | 1.302 |
| 11:12 | 1.357 |
| 12:12 | 1.414 |

DESIGN ASSUMPTIONS:

- Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
- The values in the tables are for uniform loads only.
- Total Load is for Snow (115%) or Non-Snow (125%) duration, as noted in the table, and has been adjusted to account for the self-weight of the member.
- Snow/Live Load deflection has been limited to L/360 or L/240 as noted in the table.
- Total deflection has been limited to L/180. Long term deflection (creep) has not been considered.
- These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
- Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

ADDITIONAL NOTES:

- The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
- For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table above.
- The designer shall check both the appropriate Total Load and the appropriate Snow/Live Load column.
- Where the Snow/Live Load is blank, the Total Load governs the design.
- Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
- The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
- The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
- Do not use a product where designated "-" without further analysis by a design professional.

LSL 2360F₆-1.55E

LSL 1.75E Product Specifications & Design Values

ALLOWABLE STRESS DESIGN VALUES (PSI)

| Grade | Bending Stress F_b | Modulus of Elasticity E (x 10 ⁶ psi) | Shear Stress F_v | Compression Stress | |
|---------------------------|-------------------------|---|-----------------------|------------------------------|--|
| | | | | F_c (Parallel To Grain) | $F_{c\perp}$ (Perpendicular To Grain) |
| 2500F ₀ -1.75E | 2500 | 1.75 | 410 | 2450 | 950 |

NOTES:

1. LP® SolidStart® LSL shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
2. The allowable strengths and stiffness are for standard load duration. Bending, Shear and Compression parallel-to-grain shall be adjusted according to code. Modulus of Elasticity and Compression perpendicular-to-grain shall not be adjusted.
3. The allowable Bending Stress is tabulated for 12" depth. For depths other than 12", multiply F_b by $(12/\text{depth})^{1/7}$. For depths less than 3-1/2", multiply F_b by 1.19.
4. Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{270wL^4}{Ebd^3} + \frac{28.8wL^2}{Ebd}$ Where: Δ = deflection (in) E = modulus of elasticity (from table)
 w = uniform load (plf) b = width (in)
 L = design span (ft) d = depth (in)

Equations for other conditions can be found in engineering references.

SECTION PROPERTIES AND ALLOWABLE CAPACITIES

| Depth | Weight (lb/ft) | | | | Allowable Moment (lb-ft) | | | | Allowable Shear (lb) | | | | Moment of Inertia (in ⁴) | | | |
|---------|-------------------|--------|--------|--------|-----------------------------|--------|--------|--------|-------------------------|--------|--------|--------|---|--------|--------|--------|
| | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" | 1-1/2" | 1-3/4" | 3-1/2" | 5-1/4" |
| 5-1/2" | 2.8 | 3.2 | 6.4 | 9.6 | 1761 | 2055 | 4110 | 6164 | 2255 | 2631 | 5262 | 7893 | 21 | 24 | 49 | 73 |
| 7-1/4" | 3.6 | 4.2 | 8.5 | 12.7 | 2942 | 3432 | 6865 | 10297 | 2973 | 3468 | 6936 | 10404 | 48 | 56 | 111 | 167 |
| 9-1/4" | 4.6 | 5.4 | 10.8 | 16.2 | 4625 | 5396 | 10792 | 16188 | 3793 | 4425 | 8849 | 13274 | 99 | 115 | 231 | 346 |
| 9-1/2" | 4.8 | 5.5 | 11.1 | 16.6 | 4860 | 5670 | 11340 | 17010 | 3895 | 4544 | 9088 | 13633 | 107 | 125 | 250 | 375 |
| 11-1/4" | 5.6 | 6.6 | 13.1 | 19.7 | 6653 | 7762 | 15523 | 23285 | 4613 | 5381 | 10763 | 16144 | 178 | 208 | 415 | 623 |
| 11-7/8" | 5.9 | 6.9 | 13.9 | 20.8 | 7356 | 8581 | 17163 | 25744 | 4869 | 5680 | 11360 | 17041 | 209 | 244 | 488 | 733 |
| 14" | 7.0 | 8.2 | 16.3 | 24.5 | 9986 | 11650 | 23301 | 34951 | 5740 | 6697 | 13393 | 20090 | 343 | 400 | 800 | 1201 |
| 16" | 8.0 | 9.3 | 18.7 | 28.0 | 12796 | 14929 | 29858 | 44788 | 6560 | 7653 | 15307 | 22960 | 512 | 597 | 1195 | 1792 |
| 18" | 9.0 | 10.5 | 21.0 | 31.5 | 15925 | 18580 | 37159 | 55739 | 7380 | 8610 | 17220 | 25830 | 729 | 851 | 1701 | 2552 |

NOTES:

1. The Allowable Moment and Shear capacities are for standard load duration and shall be adjusted according to code.
2. 3-1/2" wide members are either a single piece of 3-1/2" LSL or two plies of 1-3/4" LSL. 5-1/4" wide members are either the combination of a single piece of 3-1/2" LSL with a single piece of 1-3/4" LSL or three plies of 1-3/4" LSL.
3. The tabulated weight is an estimate and shall only be used for design purposes. Contact LP for actual shipping weights.

FASTENERS:

Refer to pages 34-35 for information on connecting multiple plies and for the equivalent specific gravity for design of nailed and bolted connections.

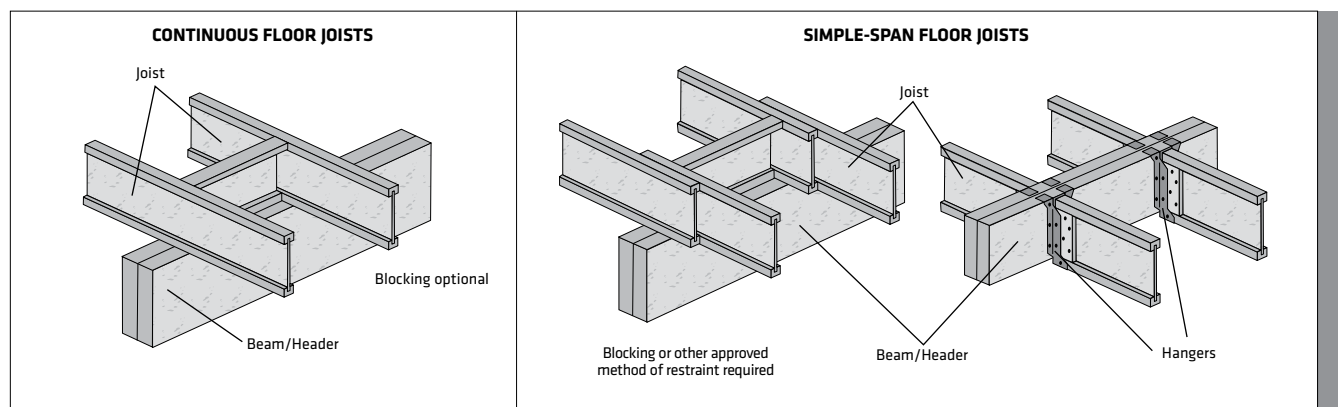
REACTION CAPACITY (LBS)

| | | Bearing Length | | | | | | | | | | | | | | | | | | | | |
|--------|--------|----------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|---------|-------|---------|-------|
| Width | 1-1/2" | 2" | 2-1/2" | 3" | 3-1/2" | 4" | 4-1/2" | 5" | 5-1/2" | 6" | 6-1/2" | 7" | 7-1/2" | 8" | 8-1/2" | 9" | 9-1/2" | 10" | 10-1/2" | 11" | 11-1/2" | 12" |
| 1-1/2" | 2137 | 2850 | 3562 | 4275 | 4987 | 5700 | 6412 | 7125 | 7837 | 8550 | 9262 | 9975 | 10687 | 11400 | 12112 | 12825 | 13537 | 14250 | 14962 | 15675 | 16387 | 17100 |
| 1-3/4" | 2493 | 3325 | 4156 | 4987 | 5818 | 6650 | 7481 | 8312 | 9143 | 9975 | 10806 | 11637 | 12468 | 13300 | 14131 | 14962 | 15793 | 16625 | 17456 | 18287 | 19118 | 19950 |
| 3-1/2" | 4987 | 6650 | 8312 | 9975 | 11637 | 13300 | 14962 | 16625 | 18287 | 19950 | 21612 | 23275 | 24937 | 26600 | 28262 | 29925 | 31587 | 33250 | 34912 | 36575 | 38237 | 39900 |
| 5-1/4" | 7481 | 9975 | 12468 | 14962 | 17456 | 19950 | 22443 | 24937 | 27431 | 29925 | 32418 | 34912 | 37406 | 39900 | 42393 | 44887 | 47381 | 49875 | 52368 | 54862 | 57356 | 59850 |

NOTES:

1. The maximum Reactions are based on the compression strength, perpendicular-to-grain, of the LSL. This is suitable for beams bearing on steel or the end-grain of studs.
2. Verify that the support for the beam is structurally adequate to carry the reaction. The compressive strength parallel-to-grain, of studs may require more studs than the bearing length above indicates.
3. For beams bearing on wood plates, the required bearing length will increase based on the bearing strength (compression perpendicular-to-grain) of the species and grade used for the plate material.
4. Verify local code requirements concerning minimum bearing.

1.75E FLOOR BEAM QUICK REFERENCE DETAILS (see page 23 for tables)



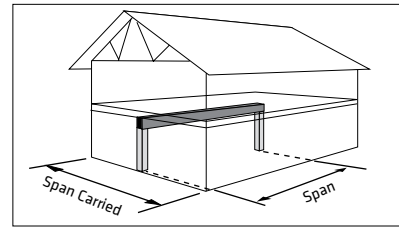
LSL 1.75E Floor Beam Quick Reference Tables

TO USE:

1. Select the correct table for the supported floor joist condition (simple or continuous).
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 10' span carries 15'-0" simple span joists on each side.

SOLUTION: Using the Simple-Span Floor Joists table with 30'-0" span carried, select either **3-1/2" x 11-1/4"** or **5-1/4" x 9-1/4"**.



CONTINUOUS FLOOR JOISTS (DESIGN FLOOR LOADS: 40 PSF LIVE, 15 PSF DEAD)

| Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | 3-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" |
| | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | 3-1/2" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | 3-1/2" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" |
| | 5-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 11-7/8" |
| 14'-0" | 3-1/2" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 18" | 18" |
| | 5-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| 16'-0" | 3-1/2" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - |
| | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| 18'-0" | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" |
| 20'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 26'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 28'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 30'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

SIMPLE-SPAN FLOOR JOISTS (DESIGN FLOOR LOADS: 40 PSF LIVE, 15 PSF DEAD)

| Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" |
| 8'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 12'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 14'-0" | 3-1/2" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" |
| 16'-0" | 3-1/2" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| | 5-1/4" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" |
| 18'-0" | 3-1/2" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - |
| | 5-1/4" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 16" |
| 20'-0" | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| 26'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 28'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 30'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Use the Continuous Floor Joists table where the floor joists are continuous (multiple span) over the beam.
2. Use the Simple-Span Floor Joists table where the floor joists frame into the side of or end on top of the beam.
3. Span is center-to-center of supports and is valid for simple and equal, continuous beam spans.
4. End supports require 3" bearing. Interior supports require 6" bearing, except 7-1/2" is required where **bold**. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 22 for additional information.
5. Deflections are limited to L/360 live load and L/240 total load.
6. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
7. Do not use where marked "-".

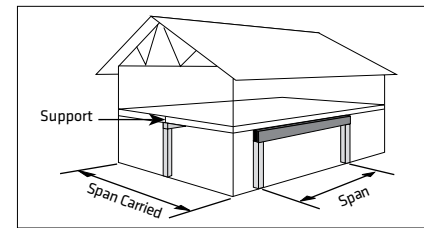
LSL 1.75E Combined Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 9'-6" span supports a 32'-0" span carried for a 20 psf Roof live load.

SOLUTION: Using the correct table for the roof load with 32'-0" span carried, select either **3-1/2" x 11-1/4"** or **5-1/4" x 9-1/4"**.



| DESIGN LOADS ROOF: 20 PSF SNOW OR LIVE (115% or 125%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-6" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" |
| 10'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | | 3-1/2" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" |
| 14'-0" | | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" |
| | | 5-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| 16'-0" | | 3-1/2" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" |
| 16'-6" | | 3-1/2" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| | | 5-1/4" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" |
| 18'-0" | | 3-1/2" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | 18" |
| 18'-6" | | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | 18" | - |
| 20'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | - |
| 22'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | - | - | - | - | - | - | - | - | - | - |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

| DESIGN LOADS ROOF: 25 PSF SNOW (115%), 15 PSF DEAD FLOOR: 40 PSF LIVE, 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-6" | | 3-1/2" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" |
| 10'-0" | | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | | 3-1/2" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" |
| 14'-0" | | 3-1/2" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| | | 5-1/4" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" |
| 16'-0" | | 3-1/2" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - |
| | | 5-1/4" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" |
| 16'-6" | | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| | | 5-1/4" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| 18'-0" | | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - |
| 18'-6" | | 3-1/2" | 18" | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| 20'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| 22'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 22 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

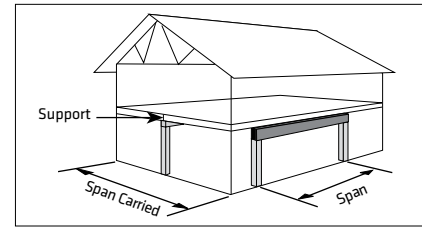
LSL 1.75E Combined Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 9'-6" span supports a 32'-0" span carried for a 40 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 32'-0" span carried, select either **3-1/2" x 11-7/8"** or **5-1/4" x 11-1/4"**.



| Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-6" | 3-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 10'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | 3-1/2" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" |
| 14'-0" | 3-1/2" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" |
| | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| 16'-0" | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| | 5-1/4" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| 16'-6" | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" |
| 18'-0" | 3-1/2" | 18" | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| 18'-6" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| 20'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

| Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|--------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | 5-1/4" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | 5-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-6" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 10'-0" | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 12'-0" | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| | 5-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" |
| 14'-0" | 3-1/2" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - |
| | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| 16'-0" | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| 16'-6" | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - |
| 18'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - | - |
| 18'-6" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| 20'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | 18" | - | - | - | - | - | - | - | - | - | - |
| 22'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |
| 24'-0" | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 22 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

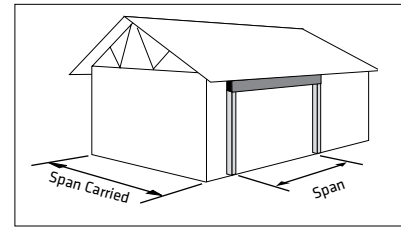
LSL 1.75E Roof Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 16'-6" span supports a 38'-0" span carried for a 25 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 38'-0" span carried, select either **3-1/2" x 16"** or **5-1/4" x 14"**.



| DESIGN LOADS ROOF: 20 PSF SNOW OR LIVE (115% or 125%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|---|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 8'-0" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 9'-6" | | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 12'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" |
| 14'-0" | | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" |
| 16'-0" | | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" |
| 16'-6" | | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| 18'-0" | | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| | | 5-1/4" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| 18'-6" | | 3-1/2" | 14" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" |
| 20'-0" | | 3-1/2" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| | | 5-1/4" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" |
| 22'-0" | | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |

| DESIGN LOADS ROOF: 25 PSF SNOW (115%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|---|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 8'-0" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 9'-6" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 12'-0" | | 3-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 14'-0" | | 3-1/2" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" |
| 16'-0" | | 3-1/2" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| 16'-6" | | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" | 18" |
| | | 5-1/4" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| 18'-0" | | 3-1/2" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" |
| 18'-6" | | 3-1/2" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| 20'-0" | | 3-1/2" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| | | 5-1/4" | 14" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" |
| 22'-0" | | 3-1/2" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 22 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads assume a 2' maximum overhang on the roof.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.75E Roof Beam Quick Reference Tables

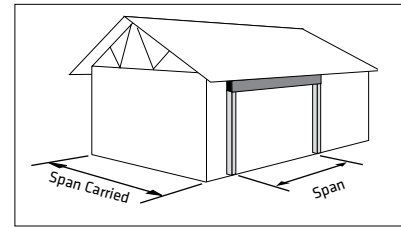
TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam in the Span column.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

EXAMPLE: A beam with a 16'-6" span supports a 38'-0" span carried for a 40 psf Roof snow load.

SOLUTION: Using the correct table for the roof load with 38'-0" span carried, select a **5-1/4" x 16"**.

NOTE: A 3-1/2" beam does not work.



| DESIGN LOADS ROOF: 30 PSF SNOW (115%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|---|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" |
| 8'-0" | | 3-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 9'-6" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 12'-0" | | 3-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 11-7/8" | 14" | 14" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| 14'-0" | | 3-1/2" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" |
| 16'-0" | | 3-1/2" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" |
| | | 5-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" |
| 16'-6" | | 3-1/2" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" |
| | | 5-1/4" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" |
| 18'-0" | | 3-1/2" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | - | - |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" |
| 18'-6" | | 3-1/2" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - | - |
| | | 5-1/4" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" |
| 20'-0" | | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| 22'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | - | - | - | - | - | - | - | - | - |

| DESIGN LOADS ROOF: 40 PSF SNOW (115%), 15 PSF DEAD | Span | Beam Width | Span Carried By Beam | | | | | | | | | | |
|---|------|------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | 20' | 22' | 24' | 26' | 28' | 30' | 32' | 34' | 36' | 38' | 40' |
| 6'-0" | | 3-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| | | 5-1/4" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 5-1/2" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" |
| 8'-0" | | 3-1/2" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| | | 5-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 7-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 9'-6" | | 3-1/2" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" |
| 10'-0" | | 3-1/2" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" |
| | | 5-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/4" | 9-1/2" | 11-1/4" | 11-1/4" |
| 12'-0" | | 3-1/2" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| | | 5-1/4" | 9-1/2" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" |
| 14'-0" | | 3-1/2" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 16" |
| | | 5-1/4" | 11-1/4" | 11-1/4" | 11-7/8" | 11-7/8" | 14" | 14" | 14" | 14" | 14" | 14" | 14" |
| 16'-0" | | 3-1/2" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" |
| 16'-6" | | 3-1/2" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" | - | - |
| | | 5-1/4" | 14" | 14" | 14" | 14" | 16" | 16" | 16" | 16" | 16" | 16" | 18" |
| 18'-0" | | 3-1/2" | 18" | 18" | 18" | 18" | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" |
| 18'-6" | | 3-1/2" | 18" | 18" | 18" | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 16" | 16" | 16" | 16" | 18" | 18" | 18" | 18" | 18" | 18" |
| 20'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 16" | 18" | 18" | 18" | 18" | 18" | - | - | - | - | - |
| 22'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | 18" | 18" | - | - | - | - | - | - | - | - | - |
| 24'-0" | | 3-1/2" | - | - | - | - | - | - | - | - | - | - | - |
| | | 5-1/4" | - | - | - | - | - | - | - | - | - | - | - |

NOTES:

1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing, except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" have been limited to 3" (two trimmers) on each end. The bearing length is based on the compressive strength, perpendicular-to-grain, of the LSL. See the Reaction Capacity table on page 22 for additional information.
3. Deflections are limited to L/360 snow/live load and L/240 total load.
4. Loads assume a 2' maximum overhang on the roof.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.75E Uniform Floor Load (PLF) Tables: 1-1/2"

TO USE:

1. Select the span required.
2. Compare the design total load to the Total Load column.
3. Compare the design live load to the appropriate Live Load column.
4. Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 16'-6" beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following design loads: Live Load = 480 plf; Total Load = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = 660/2 = 330 plf
Live Load per ply = 480/2 = 240 plf

Use 2 plies 1-1/2" x 16"

(Total Load = 368 plf, Live Load = 268 plf)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = 660/3 = 220 plf
Live Load per ply = 480/3 = 160 plf

Use 3 plies 1-1/2" x 14"

(Total Load = 268 plf, Live Load = 183 plf)

| Span | 1-1/2" x 5-1/2" | | | 1-1/2" x 7-1/4" | | | 1-1/2" x 9-1/4" | | | 1-1/2" x 9-1/2" | | | 1-1/2" x 11-1/4" | | | Span |
|--------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|------------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | 286 | 382 | 560 | 605 | 806 | 937 | 1127 | | 1475 | 1203 | | 1550 | 1797 | | 2102 | 5' |
| 6' | 171 | 229 | 340 | 371 | 494 | 650 | 710 | 947 | 1023 | 761 | 1014 | 1075 | 1165 | | 1472 | 6' |
| 7' | 110 | 147 | 218 | 242 | 323 | 476 | 472 | 630 | 750 | 507 | 677 | 788 | 791 | 1054 | 1080 | 7' |
| 8' | 75 | 100 | 147 | 166 | 221 | 329 | 328 | 438 | 573 | 353 | 471 | 602 | 558 | 744 | 825 | 8' |
| 9' | 53 | 71 | 103 | 118 | 158 | 234 | 237 | 316 | 452 | 255 | 340 | 475 | 406 | 542 | 651 | 9' |
| 9'-6" | 45 | 60 | 88 | 101 | 135 | 199 | 203 | 271 | 402 | 219 | 292 | 426 | 351 | 468 | 584 | 9'-6" |
| 10' | 39 | 52 | 75 | 87 | 116 | 171 | 176 | 235 | 347 | 190 | 253 | 375 | 304 | 406 | 526 | 10' |
| 11' | - | - | - | 66 | 88 | 129 | 134 | 179 | 264 | 145 | 193 | 285 | 233 | 311 | 434 | 11' |
| 12' | - | - | - | 51 | 68 | 99 | 104 | 139 | 204 | 113 | 150 | 221 | 183 | 244 | 360 | 12' |
| 13' | - | - | - | 40 | 54 | 77 | 83 | 110 | 161 | 89 | 119 | 174 | 145 | 194 | 286 | 13' |
| 14' | - | - | - | 32 | 43 | 62 | 66 | 89 | 129 | 72 | 96 | 140 | 117 | 157 | 230 | 14' |
| 15' | - | - | - | - | - | - | 54 | 73 | 104 | 59 | 78 | 113 | 96 | 128 | 187 | 15' |
| 16' | - | - | - | - | - | - | 45 | 60 | 86 | 49 | 65 | 93 | 80 | 107 | 154 | 16' |
| 16'-6" | - | - | - | - | - | - | 41 | 55 | 78 | 44 | 59 | 84 | 73 | 97 | 141 | 16'-6" |
| 17' | - | - | - | - | - | - | 37 | 50 | 71 | 41 | 54 | 77 | 67 | 89 | 128 | 17' |
| 18' | - | - | - | - | - | - | 32 | 42 | 59 | 34 | 46 | 64 | 56 | 75 | 108 | 18' |
| 18'-6" | - | - | - | - | - | - | - | - | - | 32 | 42 | 59 | 52 | 70 | 99 | 18'-6" |
| 19' | - | - | - | - | - | - | - | - | - | - | - | - | 48 | 64 | 91 | 19' |
| 20' | - | - | - | - | - | - | - | - | - | - | - | - | 41 | 55 | 78 | 20' |
| 21' | - | - | - | - | - | - | - | - | - | - | - | - | 36 | 48 | 66 | 21' |
| 22' | - | - | - | - | - | - | - | - | - | - | - | - | 31 | 42 | 57 | 22' |

| Span | 1-1/2" x 11-7/8" | | | 1-1/2" x 14" | | | 1-1/2" x 16" | | | 1-1/2" x 18" | | | Span |
|--------|------------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | 2032 | | 2274 | 2905 | | 2924 | | | 3653 | | | 4532 | 5' |
| 6' | 1329 | | 1628 | 1953 | | 2212 | 2620 | | 2706 | | | 3271 | 6' |
| 7' | 907 | | 1194 | 1362 | | 1623 | 1863 | | 2081 | 2423 | | 2557 | 7' |
| 8' | 643 | 858 | 913 | 981 | | 1241 | 1362 | | 1591 | 1797 | | 1981 | 8' |
| 9' | 470 | 627 | 720 | 727 | 969 | 979 | 1021 | | 1255 | 1362 | | 1563 | 9' |
| 9'-6" | 406 | 542 | 646 | 631 | 842 | 878 | 891 | | 1126 | 1195 | | 1402 | 9'-6" |
| 10' | 353 | 471 | 582 | 551 | 735 | 791 | 782 | | 1015 | 1053 | | 1265 | 10' |
| 11' | 271 | 362 | 480 | 427 | 569 | 653 | 610 | 813 | 838 | 828 | | 1043 | 11' |
| 12' | 213 | 284 | 402 | 337 | 449 | 547 | 484 | 645 | 702 | 661 | | 875 | 12' |
| 13' | 170 | 226 | 334 | 270 | 360 | 465 | 390 | 520 | 597 | 535 | 714 | 744 | 13' |
| 14' | 137 | 183 | 269 | 219 | 292 | 400 | 318 | 424 | 514 | 439 | 585 | 641 | 14' |
| 15' | 113 | 150 | 220 | 180 | 241 | 348 | 263 | 350 | 446 | 364 | 485 | 557 | 15' |
| 16' | 93 | 125 | 181 | 150 | 200 | 294 | 219 | 292 | 391 | 304 | 406 | 488 | 16' |
| 16'-6" | 85 | 114 | 165 | 137 | 183 | 268 | 201 | 268 | 368 | 280 | 373 | 458 | 16'-6" |
| 17' | 78 | 104 | 151 | 126 | 168 | 246 | 185 | 246 | 346 | 257 | 343 | 431 | 17' |
| 18' | 66 | 88 | 127 | 107 | 143 | 207 | 157 | 209 | 306 | 219 | 292 | 384 | 18' |
| 18'-6" | 61 | 82 | 117 | 99 | 132 | 191 | 145 | 194 | 283 | 203 | 271 | 363 | 18'-6" |
| 19' | 56 | 75 | 107 | 91 | 122 | 176 | 134 | 179 | 261 | 188 | 251 | 343 | 19' |
| 20' | 49 | 65 | 92 | 79 | 105 | 151 | 116 | 155 | 224 | 163 | 217 | 309 | 20' |
| 21' | 42 | 56 | 79 | 68 | 91 | 130 | 101 | 134 | 194 | 141 | 189 | 274 | 21' |
| 22' | 37 | 49 | 68 | 60 | 80 | 113 | 88 | 118 | 169 | 124 | 165 | 239 | 22' |
| 23' | 32 | 43 | 59 | 52 | 70 | 98 | 77 | 103 | 147 | 109 | 145 | 209 | 23' |
| 24' | - | - | - | 46 | 62 | 86 | 68 | 91 | 129 | 96 | 128 | 184 | 24' |
| 25' | - | - | - | 41 | 55 | 75 | 61 | 81 | 114 | 85 | 114 | 162 | 25' |
| 26' | - | - | - | 36 | 49 | 66 | 54 | 72 | 100 | 76 | 102 | 144 | 26' |
| 27' | - | - | - | 32 | 43 | 58 | 48 | 65 | 89 | 68 | 91 | 128 | 27' |
| 28' | - | - | - | - | - | - | 43 | 58 | 79 | 61 | 82 | 114 | 28' |
| 29' | - | - | - | - | - | - | 39 | 52 | 71 | 55 | 74 | 102 | 29' |
| 30' | - | - | - | - | - | - | 35 | 47 | 63 | 50 | 67 | 92 | 30' |

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Total Load is for normal (100%) duration and has been adjusted to account for the self-weight of the member.
4. Live Load deflection has been limited to L/360 or L/480 as noted in the table.
5. Total deflection has been limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ADDITIONAL NOTES:

1. The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check both the Total Load and the appropriate Live Load column.
3. Where the Live Load is blank, the Total Load governs the design.
4. Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
5. The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

| Span (ft) | L/480 | L/360 | L/240 |
|-----------|--------|--------|---------|
| 10' | 1/4" | 5/16" | 1/2" |
| 12' | 5/16" | 3/8" | 5/8" |
| 14' | 3/8" | 7/16" | 11/16" |
| 16' | 3/8" | 9/16" | 13/16" |
| 18' | 7/16" | 5/8" | 7/8" |
| 20' | 1/2" | 11/16" | 1" |
| 22' | 9/16" | 3/4" | 1-1/8" |
| 24' | 5/8" | 13/16" | 1-3/16" |
| 26' | 5/8" | 7/8" | 1-5/16" |
| 28' | 11/16" | 15/16" | 1-3/8" |
| 30' | 3/4" | 1" | 1-1/2" |

* Deflections rounded to the nearest 1/16"

LSL 1.75E Uniform Floor Load (PLF) Tables: 1-3/4"

TO USE:

1. Select the span required.
2. Compare the design total load to the Total Load column.
3. Compare the design live load to the appropriate Live Load column.
4. Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 16'-6" beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following design loads: Live Load = 480 plf; Total Load = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = 660/2 = 330 plf
Live Load per ply = 480/2 = 240 plf

Use 2 plies 1-3/4" x 16"

(Total Load = 429 plf, Live Load = 313 plf)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = 660/3 = 220 plf
Live Load per ply = 480/3 = 160 plf

Use 3 plies 1-3/4" x 14"

(Total Load = 313 plf, Live Load = 214 plf)

| Span | 1-3/4" x 5-1/2" | | | 1-3/4" x 7-1/4" | | | 1-3/4" x 9-1/4" | | | 1-3/4" x 9-1/2" | | | 1-3/4" x 11-1/4" | | | Span |
|--------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|-----------------|-------|------------|------------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | 334 | 445 | 654 | 706 | 941 | 1094 | 1315 | | 1721 | 1404 | | 1808 | 2097 | | 2453 | 5' |
| 6' | 200 | 267 | 397 | 432 | 577 | 758 | 828 | 1105 | 1193 | 888 | 1184 | 1254 | 1359 | | 1718 | 6' |
| 7' | 129 | 172 | 254 | 282 | 376 | 556 | 551 | 735 | 875 | 592 | 789 | 920 | 922 | 1230 | 1260 | 7' |
| 8' | 87 | 116 | 172 | 194 | 258 | 383 | 383 | 511 | 669 | 412 | 550 | 703 | 651 | 868 | 963 | 8' |
| 9' | 62 | 82 | 121 | 138 | 184 | 273 | 276 | 368 | 527 | 298 | 397 | 554 | 474 | 632 | 760 | 9' |
| 9'-6" | 53 | 70 | 103 | 118 | 158 | 233 | 237 | 316 | 470 | 256 | 341 | 497 | 409 | 546 | 681 | 9'-6" |
| 10' | 45 | 60 | 88 | 102 | 136 | 200 | 205 | 274 | 405 | 221 | 295 | 438 | 355 | 474 | 614 | 10' |
| 11' | 34 | 46 | 65 | 77 | 103 | 150 | 156 | 209 | 308 | 169 | 225 | 332 | 272 | 363 | 506 | 11' |
| 12' | - | - | - | 60 | 80 | 116 | 122 | 162 | 238 | 131 | 175 | 258 | 213 | 284 | 420 | 12' |
| 13' | - | - | - | 47 | 63 | 90 | 96 | 129 | 188 | 104 | 139 | 203 | 170 | 226 | 333 | 13' |
| 14' | - | - | - | 38 | 51 | 72 | 78 | 104 | 150 | 84 | 112 | 163 | 137 | 183 | 268 | 14' |
| 15' | - | - | - | 31 | 41 | 58 | 63 | 85 | 122 | 69 | 92 | 132 | 112 | 150 | 219 | 15' |
| 16' | - | - | - | - | - | - | 52 | 70 | 100 | 57 | 76 | 108 | 93 | 124 | 180 | 16' |
| 16'-6" | - | - | - | - | - | - | 48 | 64 | 91 | 52 | 69 | 99 | 85 | 114 | 164 | 16'-6" |
| 17' | - | - | - | - | - | - | 44 | 59 | 83 | 47 | 63 | 90 | 78 | 104 | 150 | 17' |
| 18' | - | - | - | - | - | - | 37 | 49 | 69 | 40 | 53 | 75 | 66 | 88 | 126 | 18' |
| 18'-6" | - | - | - | - | - | - | 34 | 46 | 63 | 37 | 49 | 69 | 61 | 81 | 116 | 18'-6" |
| 19' | - | - | - | - | - | - | 31 | 42 | 58 | 34 | 46 | 63 | 56 | 75 | 106 | 19' |
| 20' | - | - | - | - | - | - | - | - | - | - | - | - | 48 | 65 | 91 | 20' |
| 21' | - | - | - | - | - | - | - | - | - | - | - | - | 42 | 56 | 78 | 21' |
| 22' | - | - | - | - | - | - | - | - | - | - | - | - | 36 | 49 | 67 | 22' |

| Span | 1-3/4" x 11-7/8" | | | 1-3/4" x 14" | | | 1-3/4" x 16" | | | 1-3/4" x 18" | | | Span |
|--------|------------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------------|-------|------------|--------|
| | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | Live Load | | Total Load | |
| | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | L/480 | L/360 | | |
| 5' | 2371 | | 2653 | 3389 | | 3411 | | | 4262 | | | 5287 | 5' |
| 6' | 1550 | | 1900 | 2278 | | 2580 | 3057 | | 3157 | | | 3816 | 6' |
| 7' | 1059 | | 1394 | 1590 | | 1893 | 2174 | | 2428 | 2827 | | 2984 | 7' |
| 8' | 750 | 1001 | 1065 | 1145 | | 1448 | 1590 | | 1856 | 2097 | | 2311 | 8' |
| 9' | 549 | 732 | 840 | 848 | 1131 | 1142 | 1191 | | 1465 | 1590 | | 1824 | 9' |
| 9'-6" | 474 | 632 | 753 | 736 | 982 | 1024 | 1040 | | 1314 | 1394 | | 1636 | 9'-6" |
| 10' | 412 | 550 | 679 | 643 | 858 | 923 | 912 | | 1185 | 1229 | | 1475 | 10' |
| 11' | 317 | 423 | 560 | 498 | 664 | 762 | 711 | 949 | 977 | 966 | | 1217 | 11' |
| 12' | 248 | 331 | 469 | 393 | 524 | 639 | 565 | 753 | 820 | 771 | | 1021 | 12' |
| 13' | 198 | 264 | 390 | 315 | 420 | 543 | 455 | 606 | 697 | 624 | 833 | 869 | 13' |
| 14' | 160 | 214 | 314 | 256 | 341 | 467 | 371 | 495 | 600 | 512 | 683 | 747 | 14' |
| 15' | 131 | 175 | 256 | 210 | 281 | 406 | 306 | 409 | 521 | 424 | 566 | 650 | 15' |
| 16' | 109 | 145 | 212 | 175 | 234 | 343 | 256 | 341 | 457 | 355 | 474 | 570 | 16' |
| 16'-6" | 100 | 133 | 193 | 160 | 214 | 313 | 234 | 313 | 429 | 326 | 435 | 535 | 16'-6" |
| 17' | 91 | 122 | 176 | 147 | 196 | 287 | 216 | 288 | 403 | 300 | 400 | 503 | 17' |
| 18' | 77 | 103 | 148 | 125 | 167 | 242 | 183 | 244 | 358 | 256 | 341 | 448 | 18' |
| 18'-6" | 71 | 95 | 136 | 115 | 154 | 223 | 169 | 226 | 330 | 237 | 316 | 423 | 18'-6" |
| 19' | 66 | 88 | 125 | 107 | 142 | 206 | 157 | 209 | 305 | 220 | 293 | 401 | 19' |
| 20' | 57 | 76 | 107 | 92 | 123 | 176 | 135 | 181 | 262 | 190 | 253 | 361 | 20' |
| 21' | 49 | 66 | 92 | 80 | 106 | 152 | 118 | 157 | 226 | 165 | 220 | 320 | 21' |
| 22' | 43 | 57 | 79 | 70 | 93 | 131 | 103 | 137 | 197 | 144 | 193 | 279 | 22' |
| 23' | 37 | 50 | 68 | 61 | 82 | 114 | 90 | 121 | 172 | 127 | 170 | 244 | 23' |
| 24' | 33 | 44 | 60 | 54 | 72 | 100 | 80 | 106 | 151 | 112 | 150 | 215 | 24' |
| 25' | - | - | - | 48 | 64 | 88 | 71 | 94 | 133 | 100 | 133 | 190 | 25' |
| 26' | - | - | - | 42 | 57 | 77 | 63 | 84 | 117 | 89 | 119 | 168 | 26' |
| 27' | - | - | - | 38 | 51 | 68 | 56 | 75 | 104 | 80 | 106 | 149 | 27' |
| 28' | - | - | - | 34 | 46 | 60 | 51 | 68 | 92 | 72 | 96 | 133 | 28' |
| 29' | - | - | - | 31 | 41 | 54 | 46 | 61 | 82 | 65 | 86 | 119 | 29' |
| 30' | - | - | - | - | - | - | 41 | 55 | 74 | 58 | 78 | 107 | 30' |

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Total Load is for normal (100%) duration and has been adjusted to account for the self-weight of the member.
4. Live Load deflection has been limited to L/360 or L/480 as noted in the table.
5. Total deflection has been limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ADDITIONAL NOTES:

1. The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check both the Total Load and the appropriate Live Load column.
3. Where the Live Load is blank, the Total Load governs the design.
4. Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
5. The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

| Span (ft) | L/480 | L/360 | L/240 |
|-----------|--------|--------|---------|
| 10' | 1/4" | 5/16" | 1/2" |
| 12' | 5/16" | 3/8" | 5/8" |
| 14' | 3/8" | 7/16" | 11/16" |
| 16' | 3/8" | 9/16" | 13/16" |
| 18' | 7/16" | 5/8" | 7/8" |
| 20' | 1/2" | 11/16" | 1" |
| 22' | 9/16" | 3/4" | 1-1/8" |
| 24' | 5/8" | 13/16" | 1-3/16" |
| 26' | 5/8" | 7/8" | 1-5/16" |
| 28' | 11/16" | 15/16" | 1-3/8" |
| 30' | 3/4" | 1" | 1-1/2" |

* Deflections rounded to the nearest 1/16"

LSL 1.75E Uniform Roof Load (PLF) Tables: 1-1/2"

TO USE:

1. Select the span required. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof slope adjustment factor from the table at the bottom of this page.
2. Compare the design total load to the appropriate Total Load column for Snow (115%) or Non-Snow (125%).
3. Compare the design snow/live load to the appropriate Snow/Live Load column for L/360 or L/240. For a snow/live load deflection limit of L/480, compare the design snow/live load to the L/480 Live Load column from the Uniform Floor Load Tables.
4. Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 12' beam span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/240 Snow Load deflection limit for the following design loads:
Snow Load = 720 plf; Dead Load = 1120 plf

CALCULATE BEAM SPAN: 12' x 1.054 = 12.65' → **Use Span = 13'**

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = 1120/2 = 560 plf
Snow Load per ply = 720/2 = 360 plf
Use 2 plies 1-1/2" x 16"
(Total Load = 688 plf, Snow Load L/240 does not control)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = 1120/3 = 374 plf
Snow Load per ply = 720/3 = 240 plf
Use 3 plies 1-1/2" x 11-7/8"
(Total Load = 394 plf, Snow Load = 340 plf)

| Span | 1-1/2" x 5-1/2" | | | | 1-1/2" x 7-1/4" | | | | 1-1/2" x 9-1/4" | | | | 1-1/2" x 9-1/2" | | | | 1-1/2" x 11-1/4" | | | | Span |
|--------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|------------------|-------|------------|---------------|--------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | |
| 5' | 382 | 573 | 645 | 701 | 806 | | 1079 | 1173 | 1503 | | 1697 | 1845 | 1604 | | 1783 | 1939 | 2397 | | 2419 | 2630 | 5' |
| 6' | 229 | 343 | 447 | 455 | 494 | 742 | 748 | 813 | 947 | | 1177 | 1280 | 1014 | | 1237 | 1345 | 1553 | | 1694 | 1842 | 6' |
| 7' | 147 | 221 | 292 | 292 | 323 | 484 | 548 | 596 | 630 | | 863 | 939 | 677 | | 907 | 987 | 1054 | | 1243 | 1352 | 7' |
| 8' | 100 | 150 | 197 | 197 | 221 | 332 | 419 | 439 | 438 | 657 | 660 | 718 | 471 | 707 | 693 | 754 | 744 | | 950 | 1033 | 8' |
| 9' | 71 | 106 | 139 | 139 | 158 | 237 | 313 | 313 | 316 | 474 | 520 | 566 | 340 | 510 | 547 | 595 | 542 | 813 | 750 | 815 | 9' |
| 9'-6" | 60 | 91 | 118 | 118 | 135 | 203 | 267 | 267 | 271 | 407 | 466 | 507 | 292 | 439 | 490 | 533 | 468 | 702 | 672 | 731 | 9'-6" |
| 10' | 52 | 78 | 101 | 101 | 116 | 175 | 230 | 230 | 235 | 352 | 420 | 457 | 253 | 380 | 442 | 481 | 406 | 609 | 606 | 659 | 10' |
| 11' | 39 | 59 | 76 | 76 | 88 | 133 | 173 | 173 | 179 | 268 | 347 | 353 | 193 | 290 | 364 | 381 | 311 | 467 | 500 | 544 | 11' |
| 12' | 30 | 45 | 58 | 58 | 68 | 103 | 133 | 133 | 139 | 209 | 274 | 274 | 150 | 226 | 296 | 296 | 244 | 366 | 419 | 456 | 12' |
| 13' | - | - | - | - | 54 | 81 | 105 | 105 | 110 | 166 | 216 | 216 | 119 | 179 | 234 | 234 | 194 | 291 | 356 | 383 | 13' |
| 14' | - | - | - | - | 43 | 65 | 83 | 83 | 89 | 133 | 174 | 174 | 96 | 144 | 188 | 188 | 157 | 235 | 306 | 309 | 14' |
| 15' | - | - | - | - | 35 | 53 | 67 | 67 | 73 | 109 | 141 | 141 | 78 | 118 | 153 | 153 | 128 | 193 | 252 | 252 | 15' |
| 16' | - | - | - | - | - | - | - | - | 60 | 90 | 116 | 116 | 65 | 98 | 126 | 126 | 107 | 160 | 208 | 208 | 16' |
| 16'-6" | - | - | - | - | - | - | - | - | 55 | 82 | 105 | 105 | 59 | 89 | 114 | 114 | 97 | 146 | 190 | 190 | 16'-6" |
| 17' | - | - | - | - | - | - | - | - | 50 | 75 | 96 | 96 | 54 | 82 | 104 | 104 | 89 | 134 | 173 | 173 | 17' |
| 18' | - | - | - | - | - | - | - | - | 42 | 64 | 80 | 80 | 46 | 69 | 87 | 87 | 75 | 113 | 146 | 146 | 18' |
| 18'-6" | - | - | - | - | - | - | - | - | 39 | 59 | 74 | 74 | 42 | 64 | 80 | 80 | 70 | 105 | 134 | 134 | 18'-6" |
| 19' | - | - | - | - | - | - | - | - | 36 | 54 | 68 | 68 | 39 | 59 | 74 | 74 | 64 | 97 | 124 | 124 | 19' |
| 20' | - | - | - | - | - | - | - | - | 31 | 47 | 58 | 58 | 33 | 50 | 63 | 63 | 55 | 83 | 105 | 105 | 20' |
| 21' | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 48 | 72 | 91 | 91 | 21' |
| 22' | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 42 | 63 | 78 | 78 | 22' |

| Span | 1-1/2" x 11-7/8" | | | | 1-1/2" x 14" | | | | 1-1/2" x 16" | | | | 1-1/2" x 18" | | | | Span | |
|--------|------------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|--------|-------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | | |
| 5' | 2710 | | 2616 | 2844 | | | 3363 | 3656 | | | 4202 | 4568 | | | 5213 | 5667 | 5' | |
| 6' | 1772 | | 1873 | 2037 | 2604 | | 2544 | 2766 | | | 3113 | 3385 | | | 3763 | 4091 | 6' | |
| 7' | 1210 | | 1375 | 1495 | 1817 | | 1867 | 2030 | 2485 | | | 2394 | 2603 | | | 2943 | 3199 | 7' |
| 8' | 858 | | 1051 | 1143 | 1309 | | 1428 | 1553 | 1817 | | | 1831 | 1991 | 2397 | | 2280 | 2479 | 8' |
| 9' | 627 | | 829 | 902 | 969 | | 1127 | 1225 | 1361 | | | 1445 | 1571 | 1817 | | 1799 | 1957 | 9' |
| 9'-6" | 542 | | 743 | 809 | 842 | | 1010 | 1099 | 1188 | | | 1296 | 1409 | 1594 | | 1614 | 1755 | 9'-6" |
| 10' | 471 | 707 | 670 | 729 | 735 | | 911 | 991 | 1042 | | | 1169 | 1271 | 1404 | | 1456 | 1583 | 10' |
| 11' | 362 | 543 | 553 | 601 | 569 | | 752 | 818 | 813 | | | 964 | 1049 | 1104 | | 1201 | 1307 | 11' |
| 12' | 284 | 426 | 464 | 504 | 449 | 674 | 630 | 686 | 645 | | | 809 | 880 | 882 | | 1008 | 1096 | 12' |
| 13' | 226 | 340 | 394 | 429 | 360 | 540 | 536 | 583 | 520 | | | 688 | 749 | 714 | | 857 | 933 | 13' |
| 14' | 183 | 275 | 339 | 361 | 292 | 439 | 461 | 502 | 424 | 636 | 592 | 644 | 585 | | | 738 | 803 | 14' |
| 15' | 150 | 226 | 294 | 295 | 241 | 361 | 401 | 436 | 350 | 526 | 515 | 560 | 485 | | | 642 | 698 | 15' |
| 16' | 125 | 187 | 244 | 244 | 200 | 301 | 351 | 383 | 292 | 439 | 451 | 491 | 406 | 609 | 563 | 613 | 16' | |
| 16'-6" | 114 | 171 | 223 | 223 | 183 | 275 | 330 | 359 | 268 | 402 | 424 | 462 | 373 | 560 | 529 | 575 | 16'-6" | |
| 17' | 104 | 157 | 204 | 204 | 168 | 253 | 310 | 330 | 246 | 370 | 399 | 434 | 343 | 515 | 497 | 542 | 17' | |
| 18' | 88 | 133 | 171 | 171 | 143 | 214 | 276 | 279 | 209 | 314 | 355 | 386 | 292 | 439 | 443 | 482 | 18' | |
| 18'-6" | 82 | 123 | 158 | 158 | 132 | 198 | 257 | 257 | 194 | 291 | 335 | 365 | 271 | 406 | 419 | 456 | 18'-6" | |
| 19' | 75 | 113 | 145 | 145 | 122 | 183 | 238 | 238 | 179 | 269 | 318 | 346 | 251 | 377 | 396 | 432 | 19' | |
| 20' | 65 | 98 | 124 | 124 | 105 | 158 | 204 | 204 | 155 | 232 | 286 | 302 | 217 | 326 | 357 | 389 | 20' | |
| 21' | 56 | 84 | 107 | 107 | 91 | 137 | 176 | 176 | 134 | 202 | 258 | 261 | 189 | 283 | 323 | 352 | 21' | |
| 22' | 49 | 74 | 92 | 92 | 80 | 120 | 153 | 153 | 118 | 177 | 228 | 228 | 165 | 248 | 293 | 320 | 22' | |
| 23' | 43 | 65 | 80 | 80 | 70 | 105 | 133 | 133 | 103 | 155 | 199 | 199 | 145 | 218 | 267 | 282 | 23' | |
| 24' | 38 | 57 | 70 | 70 | 62 | 93 | 117 | 117 | 91 | 137 | 175 | 175 | 128 | 193 | 245 | 248 | 24' | |
| 25' | 33 | 50 | 61 | 61 | 55 | 82 | 103 | 103 | 81 | 122 | 154 | 154 | 114 | 171 | 220 | 220 | 25' | |
| 26' | 30 | 45 | 54 | 54 | 49 | 73 | 91 | 91 | 72 | 108 | 137 | 137 | 102 | 153 | 195 | 195 | 26' | |
| 27' | - | - | - | - | 43 | 65 | 80 | 80 | 65 | 97 | 122 | 122 | 91 | 137 | 174 | 174 | 27' | |
| 28' | - | - | - | - | 39 | 59 | 71 | 71 | 58 | 87 | 108 | 108 | 82 | 123 | 155 | 155 | 28' | |
| 29' | - | - | - | - | 35 | 53 | 64 | 64 | 52 | 79 | 97 | 97 | 74 | 111 | 139 | 139 | 29' | |
| 30' | - | - | - | - | 32 | 48 | 57 | 57 | 47 | 71 | 87 | 87 | 67 | 101 | 125 | 125 | 30' | |

SLOPE ADJUSTMENT

| Slope | Factor |
|-------|--------|
| 2:12 | 1.014 |
| 3:12 | 1.031 |
| 4:12 | 1.054 |
| 5:12 | 1.083 |
| 6:12 | 1.118 |
| 7:12 | 1.158 |
| 8:12 | 1.202 |
| 9:12 | 1.250 |
| 10:12 | 1.302 |
| 11:12 | 1.357 |
| 12:12 | 1.414 |

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Total Load is for Snow (115%) or Non-Snow (125%) duration, as noted in the table, and has been adjusted to account for the self-weight of the member.
4. Snow/Live Load deflection has been limited to L/360 or L/240 as noted in the table.
5. Total deflection has been limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ADDITIONAL NOTES:

1. The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
2. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table above.
3. The designer shall check both the appropriate Total Load and the appropriate Snow/Live Load column.
4. Where the Snow/Live Load is blank, the Total Load governs the design.
5. Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
6. The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
7. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
8. Do not use a product where designated "-" without further analysis by a design professional.

LSL 1.75E Uniform Roof Load (PLF) Tables: 1-3/4"

TO USE:

- Select the span required. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof slope adjustment factor from the table at the bottom of this page.
- Compare the design total load to the appropriate Total Load column for Snow (115%) or Non-Snow (125%).
- Compare the design snow/live load to the appropriate Snow/Live Load column for L/360 or L/240. For a snow/live load deflection limit of L/480, compare the design snow/live load to the L/480 Live Load column from the Uniform Floor Load Tables.
- Select a product that exceeds both the design total and live loads.

EXAMPLE:

For a 12' beam span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/240 Snow Load deflection limit for the following design loads:
Snow Load = 720 plf; Dead Load = 1120 plf

CALCULATE BEAM SPAN: 12' x 1.054 = 12.65' → **Use Span = 13'**

SOLUTION FOR A 2-PLY BEAM:

Total Load per ply = 1120/2 = 560 plf
Snow Load per ply = 720/2 = 360 plf
Use 2 plies 1-3/4" x 14"
(Total Load = 626 plf, Snow Load = 630 plf)

SOLUTION FOR A 3-PLY BEAM:

Total Load per ply = 1120/3 = 374 plf
Snow Load per ply = 720/3 = 240 plf
Use 3 plies 1-3/4" x 11-1/4"
(Total Load = 415 plf, Snow Load = 340 plf)

| Span | 1-3/4" x 5-1/2" | | | | 1-3/4" x 7-1/4" | | | | 1-3/4" x 9-1/4" | | | | 1-3/4" x 9-1/2" | | | | 1-3/4" x 11-1/4" | | | | Span |
|--------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|-----------------|-------|------------|---------------|------------------|-------|------------|---------------|--------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | |
| 5' | 445 | 668 | 752 | 818 | 941 | | 1258 | 1368 | 1753 | | 1980 | 2153 | 1872 | | 2081 | 2262 | 2796 | | 2822 | 3068 | 5' |
| 6' | 267 | 400 | 521 | 531 | 577 | 865 | 872 | 949 | 1105 | | 1373 | 1493 | 1184 | | 1443 | 1569 | 1812 | | 1976 | 2149 | 6' |
| 7' | 172 | 258 | 340 | 340 | 376 | 565 | 640 | 696 | 735 | | 1007 | 1095 | 789 | | 1059 | 1151 | 1230 | | 1450 | 1577 | 7' |
| 8' | 116 | 175 | 230 | 230 | 258 | 388 | 489 | 513 | 511 | 767 | 770 | 837 | 550 | 825 | 809 | 880 | 868 | | 1109 | 1206 | 8' |
| 9' | 82 | 124 | 162 | 162 | 184 | 277 | 365 | 365 | 368 | 553 | 607 | 660 | 397 | 596 | 638 | 694 | 632 | 949 | 875 | 951 | 9' |
| 9'-6" | 70 | 106 | 138 | 138 | 158 | 237 | 312 | 312 | 316 | 475 | 544 | 592 | 341 | 512 | 572 | 622 | 546 | 819 | 784 | 853 | 9'-6" |
| 10' | 60 | 91 | 118 | 118 | 136 | 204 | 268 | 268 | 274 | 411 | 491 | 534 | 295 | 443 | 516 | 561 | 474 | 711 | 707 | 769 | 10' |
| 11' | 46 | 69 | 88 | 88 | 103 | 155 | 202 | 202 | 209 | 313 | 404 | 412 | 225 | 338 | 425 | 445 | 363 | 545 | 583 | 634 | 11' |
| 12' | 35 | 53 | 68 | 68 | 80 | 120 | 156 | 156 | 162 | 244 | 320 | 320 | 175 | 263 | 346 | 346 | 284 | 427 | 489 | 532 | 12' |
| 13' | - | - | - | - | 63 | 95 | 122 | 122 | 129 | 193 | 253 | 253 | 139 | 209 | 273 | 273 | 226 | 340 | 415 | 447 | 13' |
| 14' | - | - | - | - | 51 | 76 | 97 | 97 | 104 | 156 | 203 | 203 | 112 | 168 | 219 | 219 | 183 | 275 | 357 | 360 | 14' |
| 15' | - | - | - | - | 41 | 62 | 79 | 79 | 85 | 127 | 165 | 165 | 92 | 138 | 178 | 178 | 150 | 225 | 294 | 294 | 15' |
| 16' | - | - | - | - | 34 | 51 | 64 | 64 | 70 | 105 | 135 | 135 | 76 | 114 | 147 | 147 | 124 | 187 | 243 | 243 | 16' |
| 16'-6" | - | - | - | - | 31 | 47 | 58 | 58 | 64 | 96 | 123 | 123 | 69 | 104 | 133 | 133 | 114 | 171 | 221 | 221 | 16'-6" |
| 17' | - | - | - | - | - | - | - | - | 59 | 88 | 112 | 112 | 63 | 95 | 122 | 122 | 104 | 157 | 202 | 202 | 17' |
| 18' | - | - | - | - | - | - | - | - | 49 | 74 | 94 | 94 | 53 | 80 | 102 | 102 | 88 | 132 | 170 | 170 | 18' |
| 18'-6" | - | - | - | - | - | - | - | - | 46 | 69 | 86 | 86 | 49 | 74 | 94 | 94 | 81 | 122 | 157 | 157 | 18'-6" |
| 19' | - | - | - | - | - | - | - | - | 42 | 63 | 79 | 79 | 46 | 69 | 86 | 86 | 75 | 113 | 144 | 144 | 19' |
| 20' | - | - | - | - | - | - | - | - | 36 | 54 | 67 | 67 | 39 | 59 | 73 | 73 | 65 | 97 | 123 | 123 | 20' |
| 21' | - | - | - | - | - | - | - | - | 31 | 47 | 57 | 57 | 34 | 51 | 62 | 62 | 56 | 84 | 106 | 106 | 21' |
| 22' | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 49 | 73 | 91 | 91 | 22' |

| Span | 1-3/4" x 11-7/8" | | | | 1-3/4" x 14" | | | | 1-3/4" x 16" | | | | 1-3/4" x 18" | | | | Span |
|--------|------------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|----------------|-------|------------|---------------|--------|
| | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | Snow/Live Load | | Total Load | | |
| | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | L/360 | L/240 | Snow 115% | Non-Snow 125% | |
| 5' | 3162 | | 3052 | 3318 | | | 3924 | 4266 | | | 4903 | 5330 | | | 6082 | 6612 | 5' |
| 6' | 2067 | | 2186 | 2376 | 3038 | | 2969 | 3228 | | | 3632 | 3949 | | | 4390 | 4772 | 6' |
| 7' | 1412 | | 1604 | 1744 | 2120 | | 2179 | 2369 | 2899 | | 2793 | 3037 | | | 3433 | 3732 | 7' |
| 8' | 1001 | | 1226 | 1333 | 1527 | | 1666 | 1812 | 2120 | | 2136 | 2323 | 2796 | | 2660 | 2892 | 8' |
| 9' | 732 | | 967 | 1052 | 1131 | | 1315 | 1430 | 1588 | | 1686 | 1833 | 2120 | | 2099 | 2283 | 9' |
| 9'-6" | 632 | | 867 | 943 | 982 | | 1179 | 1282 | 1386 | | 1512 | 1644 | 1859 | | 1883 | 2048 | 9'-6" |
| 10' | 550 | 825 | 782 | 851 | 858 | | 1063 | 1156 | 1216 | | 1364 | 1483 | 1638 | | 1698 | 1847 | 10' |
| 11' | 423 | 634 | 645 | 702 | 664 | | 877 | 954 | 949 | | 1125 | 1224 | 1288 | | 1402 | 1524 | 11' |
| 12' | 331 | 497 | 541 | 589 | 524 | 786 | 736 | 800 | 753 | | 944 | 1027 | 1029 | | 1176 | 1279 | 12' |
| 13' | 264 | 396 | 460 | 500 | 420 | 630 | 626 | 681 | 606 | | 803 | 874 | 833 | | 1000 | 1088 | 13' |
| 14' | 214 | 321 | 395 | 421 | 341 | 512 | 538 | 586 | 495 | 743 | 691 | 752 | 683 | | 861 | 937 | 14' |
| 15' | 175 | 263 | 343 | 344 | 281 | 421 | 468 | 509 | 409 | 613 | 601 | 654 | 566 | | 749 | 815 | 15' |
| 16' | 145 | 218 | 285 | 285 | 234 | 351 | 410 | 446 | 341 | 512 | 527 | 573 | 474 | 711 | 657 | 715 | 16' |
| 16'-6" | 133 | 200 | 260 | 260 | 214 | 321 | 385 | 419 | 313 | 469 | 495 | 539 | 435 | 653 | 617 | 671 | 16'-6" |
| 17' | 122 | 183 | 238 | 238 | 196 | 295 | 362 | 385 | 288 | 432 | 465 | 507 | 400 | 601 | 580 | 632 | 17' |
| 18' | 103 | 155 | 200 | 200 | 167 | 250 | 322 | 326 | 244 | 367 | 414 | 451 | 341 | 512 | 517 | 562 | 18' |
| 18'-6" | 95 | 143 | 184 | 184 | 154 | 231 | 300 | 300 | 226 | 339 | 391 | 426 | 316 | 474 | 488 | 532 | 18'-6" |
| 19' | 88 | 132 | 170 | 170 | 142 | 214 | 277 | 277 | 209 | 314 | 371 | 404 | 293 | 440 | 462 | 504 | 19' |
| 20' | 76 | 114 | 145 | 145 | 123 | 184 | 238 | 238 | 181 | 271 | 334 | 353 | 253 | 380 | 416 | 453 | 20' |
| 21' | 66 | 99 | 125 | 125 | 106 | 160 | 205 | 205 | 157 | 236 | 302 | 305 | 220 | 331 | 377 | 410 | 21' |
| 22' | 57 | 86 | 108 | 108 | 93 | 140 | 178 | 178 | 137 | 206 | 266 | 266 | 193 | 289 | 342 | 373 | 22' |
| 23' | 50 | 75 | 94 | 94 | 82 | 123 | 155 | 155 | 121 | 181 | 232 | 232 | 170 | 255 | 312 | 329 | 23' |
| 24' | 44 | 66 | 82 | 82 | 72 | 108 | 136 | 136 | 106 | 160 | 204 | 204 | 150 | 225 | 286 | 290 | 24' |
| 25' | 39 | 59 | 72 | 72 | 64 | 96 | 120 | 120 | 94 | 142 | 180 | 180 | 133 | 200 | 256 | 256 | 25' |
| 26' | 35 | 52 | 63 | 63 | 57 | 85 | 106 | 106 | 84 | 127 | 160 | 160 | 119 | 179 | 228 | 228 | 26' |
| 27' | 31 | 47 | 56 | 56 | 51 | 76 | 94 | 94 | 75 | 113 | 142 | 142 | 106 | 160 | 203 | 203 | 27' |
| 28' | - | - | - | - | 46 | 69 | 83 | 83 | 68 | 102 | 127 | 127 | 96 | 144 | 181 | 181 | 28' |
| 29' | - | - | - | - | 41 | 62 | 74 | 74 | 61 | 92 | 113 | 113 | 86 | 130 | 163 | 163 | 29' |
| 30' | - | - | - | - | 37 | 56 | 66 | 66 | 55 | 83 | 102 | 102 | 78 | 117 | 146 | 146 | 30' |

SLOPE ADJUSTMENT

| Slope | Factor |
|-------|--------|
| 2:12 | 1.014 |
| 3:12 | 1.031 |
| 4:12 | 1.054 |
| 5:12 | 1.083 |
| 6:12 | 1.118 |
| 7:12 | 1.158 |
| 8:12 | 1.202 |
| 9:12 | 1.250 |
| 10:12 | 1.302 |
| 11:12 | 1.357 |
| 12:12 | 1.414 |

DESIGN ASSUMPTIONS:

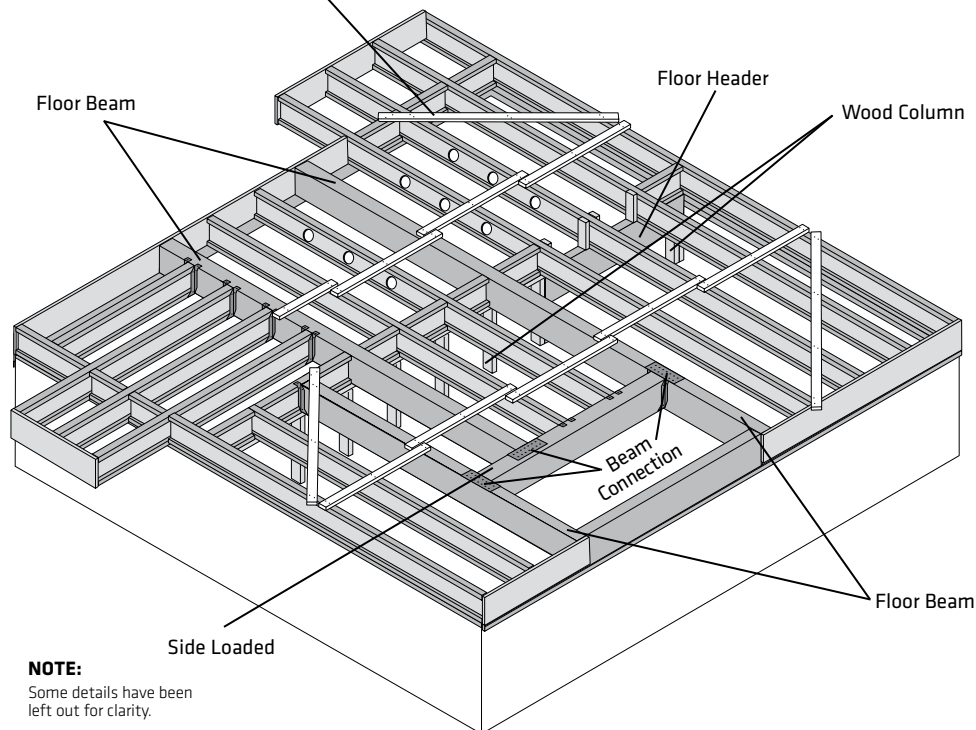
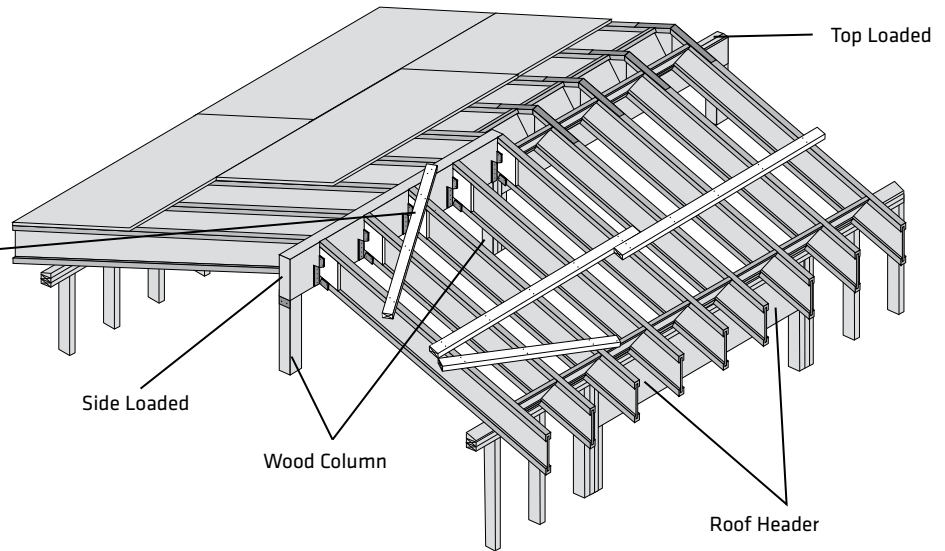
- Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
- The values in the tables are for uniform loads only.
- Total Load is for Snow (115%) or Non-Snow (125%) duration, as noted in the table, and has been adjusted to account for the self-weight of the member.
- Snow/Live Load deflection has been limited to L/360 or L/240 as noted in the table.
- Total deflection has been limited to L/180. Long term deflection (creep) has not been considered.
- These tables assume full lateral support of the compression edge. Full support is considered to be a maximum unbraced length of 24'.
- Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ADDITIONAL NOTES:

- The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
- For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table above.
- The designer shall check both the appropriate Total Load and the appropriate Snow/Live Load column.
- Where the Snow/Live Load is blank, the Total Load governs the design.
- Depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
- The allowable loads in the table are for a single ply of LSL. Multiply the values by the number of plies of equal thickness to size a built-up member or divide the required loads by the number of equal thickness plies to directly verify the capacity of each individual ply. Example: double the allowable loads in the table for a 2-ply member or divide the required uniform loads by 2 to verify each ply of a 2-ply member.
- The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
- Do not use a product where designated "-" without further analysis by a design professional.

WARNING:

Temporary construction bracing required for lateral support before decking is completed. Failure to use bracing could result in serious injury or death. See Installation Guide for specifics.



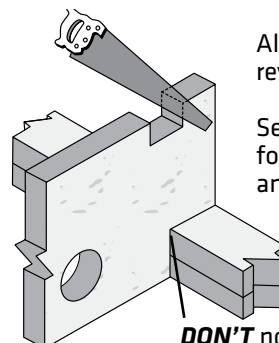
NOTE:

Some details have been left out for clarity.

WARNING

The following conditions are NOT permitted!

DO NOT USE VISUALLY DAMAGED PRODUCTS WITHOUT FIRST CHECKING WITH YOUR LOCAL LP® SolidStart® ENGINEERED WOOD PRODUCTS DISTRIBUTOR OR SALES OFFICE. (SEE BACK COVER FOR DETAILS.)



All notched or drilled beams must be reviewed by a design professional.

See hole detail on page 33 for allowable hole sizes and locations.

DON'T notch beam at support.

P3 BEAM CONNECTION

P4 STEEL COLUMN & WOOD COLUMN

P5

P6 FLOOR BEAM (Flush ceiling)

P7 CONCRETE WALL

Q1 WINDOW/DOOR HEADER

Q2 WINDOW/DOOR HEADER

BEAM HOLE DETAILS

Q4 MASONRY HANGER

NOTES:

1. These guidelines apply to uniformly loaded beams selected from the Quick Reference Tables or the Uniform Load Tables or designed with LP's design/specification software only. For all other applications, such as beams with concentrated loads, please contact your LP® SolidStart® Engineered Wood Products distributor for assistance.
2. Round holes can be drilled anywhere in "Area A" provided that: no more than four holes are cut, with the minimum spacing described in the diagram. The maximum hole size is 1-1/2" for depths up to 9-1/4", and 2" for depths greater than 9-1/4".
3. Rectangular holes are NOT allowed.
4. DO NOT drill holes in cantilevers without prior approval from the project designer.
5. Other hole sizes and configurations MAY be possible with further engineering analysis. For more information, contact your LP SolidStart Engineered Wood Products distributor.
6. Up to three 3/4" holes may be drilled in "Area B" to accommodate wiring and/or water lines. These holes shall be at least 12" apart. The holes shall be located in the middle third of the depth, or a minimum of 3" from the bottom and top of the beam. For beams shallower than 9-1/4", locate holes at mid-depth.
7. Protect plumbing holes from moisture.

Connection Details

P1 TOP-LOADED BEAM - NAILED CONNECTION
(See Connection Assemblies for more details)

Minimum nail sizes:
1-3/4" & 2" plies - 16d box (3.5" x 0.135"Ø)
1-1/2" plies - 10d box (3" x 0.128"Ø)

Two rows for depths up to 12"
Three rows for depths up to 18"
Framing is applied to top of the beam so that each ply carries an equal load

P2 TOP-LOADED BEAM - BOLTED CONNECTION
(See Connection Assemblies for more details)

Framing is applied to top of the beam so that each ply carries an equal load

Nails are permissible but NOT required. See notes for Connection Assemblies.

1/2" diameter ASTM grade A-307 (or better) bolts. Use washers on both faces.

Q3 SIDE-LOADED BEAM
(See Connection Assemblies for more details)

Framing is applied to sides of the beam

SIDE LOADS ARE NOT RECOMMENDED FOR BEAMS OVER 5-1/2" WIDE UNLESS EQUALLY APPLIED TO BOTH FACES
See Connection Assemblies for more information

| DETAIL A | DETAIL B | DETAIL C/E | DETAIL D | DETAIL F | DETAIL G | DETAIL H | CONNECTION ASSEMBLIES |
|--|--|---|---|--|--|--|-----------------------|
| MAXIMUM 4" WIDE 2-PLY BEAMS <p>2" max. ply thickness</p> | MAXIMUM 6" WIDE 3-PLY BEAMS <p>2" max. ply thickness</p> | MAXIMUM 7-1/4" WIDE 2-PLY BEAMS <p>2" maximum side member 3-1/2" main member for C 5-1/4" main member for E</p> | MAXIMUM 9-1/4" WIDE 3-PLY BEAMS <p>2" maximum side members 5-1/4" maximum main member</p> | MAXIMUM 7" WIDE 3- OR 4-PLY BEAMS <p>3" maximum side members</p> | MAXIMUM 7" WIDE 2-PLY BEAMS <p>3" maximum side members</p> | MAXIMUM 7" WIDE 2-, 3- OR 4-PLY BEAMS <p>Simpson SDS 1/4" x 6" Simpson SDW 6-3/4" or equal</p> | |

| UNIFORM SIDE-LOAD CAPACITY (PLF) | | | | |
|----------------------------------|--|---------------------------|--------------------------------|--------------------------------|
| Connection Detail | 2 Rows of Nails at 12" oc | 3 Rows of Nails at 12" oc | 2 Rows of 1/2" Bolts at 24" oc | 2 Rows of 1/2" Bolts at 12" oc |
| A | 412 | 618 | 506 | 1012 |
| B | 309 | 464 | 380 | 760 |
| C | 309 | 464 | 522 | 1044 |
| D | 275 | 412 | 464 | 928 |
| F | na | na | 337 | 674 |
| G | na | na | 858 | 1716 |
| H | Refer to Simpson Strong-Tie® catalog for SDS capacities. | | | |

| NAIL SCHEDULE | | | | |
|------------------|--------------------|-----------------------------|------------------|---------------------------------|
| Nail Length (in) | Nail Diameter (in) | Lateral Load Capacity (lbs) | Nail Size Factor | Nail Type |
| 3-1/2" | 0.162 | 141 | 1.37 | 16d common |
| | 0.135 | 103 | 1.00 | 16d box |
| 3-1/4" | 0.148 | 118 | 1.15 | 16d sinker/12d common |
| | 0.120 | 81 | 0.79 | Power-driven nail ¹³ |
| 3" | 0.148 | 99 | 0.96 | 10d common |
| | 0.128 | 91 | 0.88 | 10d box |
| | 0.120 | 81 | 0.79 | Power-driven nail ¹³ |

NOTES:

- The Uniform Side-Load Capacity values are the maximum load that can be applied to either side of the beam, based on the selected connection detail, and represent loads applied uniformly such as joists supported by hangers spaced 24" oc or less. Connections for discrete point loads may be determined with this table by calculating the equivalent fastener schedule within a 2' length centered about the point load. Details **B** and **D** shall have the back ply connected with a number of nails equal to half that used to connect the front ply - see the Side-Load Connection Example and detail on page 35. All nail and bolt spacing requirements shall be verified. The full length of the beam shall be connected with the standard connection or with the appropriate uniform side-load connection from this table. The beam shall be designed to support all applied loads.
- Values are for standard load duration and shall be adjusted according to code.
- The values for Uniform Side-Load Capacity for nails and Lateral Load Capacity (from Nail Schedule) are based on Douglas Fir lumber equivalence for a 16d box (3-1/2" x 0.135"Ø) nails for 1-3/4" LSL. For other nail sizes, multiply the Uniform Side-Load Capacity by the Nail Size Factor from the Nail Schedule. For 1-1/2" LSL, multiply by the Nail Size Factor for the appropriate 3" nail. Higher capacities may be calculated using the equivalent specific gravities tabulated in the Fastener Design table on page 35.
- The values for the Uniform Side-Load Capacity for bolts are based on Douglas Fir lumber equivalence for ASTM grade A-307, 1/2"Ø bolts, for loads applied perpendicular-to-grain. For 1-1/2" LSL, multiply these values by 0.86 or calculate for the needed detail. Higher bolt capacities may be calculated using the equivalent specific gravities tabulated in the Fastener Design table on page 35.
- For nails at 8" oc, multiply the capacity by 1.5. For nails at 6" oc, multiply the capacity by 2. For four rows of nails, double the two-row capacity.
- Use 2 rows of nails for depths to 12". Use 3 rows of nails for depths greater than 12" up to 18".
- Unless specifically designed, use 3-1/2" nails for 1-3/4" and 2" thick plies and use 3" nails for 1-1/2" thick plies. If the nails do not fully penetrate the second ply (main member), then the nails shall be driven from both faces.
- For detail **A**, or when attaching the first two plies for details **B** and **F** (optional), the nails may be driven all from one face or alternating from both faces. If the nails do not fully penetrate the second ply, then the nails shall be driven from both faces.
- When driving nails from each face, alternate every other nail in each row.
- For detail **C**, when side-loaded, the larger side-load shall be applied to the thicker ply (main member).
- For details **F** and **H**, it is permissible to nail the plies together before bolting or driving Simpson SDS (or equal) screws. Nail two plies together then nail one additional ply to each side.
- Beams wider than 5-1/2" shall be top-loaded or side-loaded from both sides to prevent rotation. For side loads applied to one side of a beam only, the project designer shall verify torsional capacity or detail the beam to prevent rotation due to any side loads. Consult a design professional for other options.
- Power-driven nails shall conform to ICC-ES report ESR-1539 (International Staple, Nail and Tool Association) for power-driven staples and nails.
- Other nail, screw or bolt configurations are possible. Refer to the Fastener Design table on page 35 or contact your LP® SolidStart® Engineered Wood Products distributor.

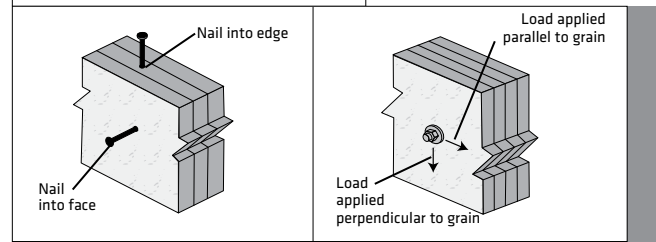
FASTENER DESIGN

| Equivalent Specific Gravity | | | | | |
|-----------------------------|------|---------------|----------------------|------------------------------------|-------------------------------------|
| Nails and Wood Screws | | | Bolts and Lag Screws | | |
| Withdrawal | | Dowel Bearing | | Dowel Bearing (into the face only) | |
| Edge | Face | Edge | Face | Load Applied Parallel to Grain | Load Applied Perpendicular to Grain |
| 0.46 | 0.50 | 0.50 | 0.55 | 0.50 | 0.58 |

NOTES:

- The equivalent specific gravity for each connection type listed above is for standard load duration and shall be adjusted according to code.
- Fastener spacing, end and edge distance shall be as specified by code except for nail spacing as specified below.
- See details to right for fastener and applied load orientation.

FASTENER & LOAD ORIENTATION



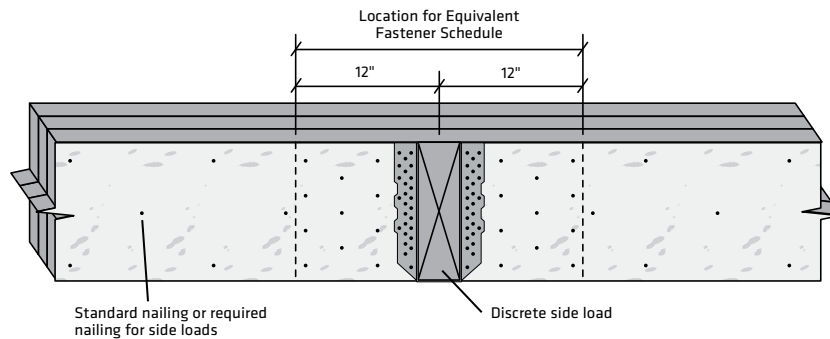
NAIL SPACING REQUIREMENTS

| LSL Ply Thickness | Fastener Orientation | Nail Size (common or box) | Minimum End Distance | Minimum Nail Spacing | |
|-------------------|----------------------|---------------------------|----------------------|----------------------|--------------|
| | | | | Single Row | Multiple Row |
| ≥ 1-1/2" | Edge | 8d & smaller | 2" | 3" | 3" |
| | | 10d & 12d | 2" | 3" | 4" |
| | | 16d ⁵ | 2-1/2" | 4" ⁴ | 6" |
| | Face | 8d & smaller | 7/8" | 1" | |
| | | 10d & 12d | 7/8" | 1" | |
| | | 16d ⁵ | 7/8" | 1-1/2" | |

NOTES:

- Edge distance shall be such that does not cause splitting.
- Multiple rows of nails shall be offset at least 1/2" and staggered.
- Edge orientation refers to nails driven into the narrow edge of the LSL, parallel to the face of the strands. Face orientation refers to nails driven into the wide face of the LSL, perpendicular to the face of the strands. (See Fastener & Load Orientation details above.)
- Single row spacing for 16d nails into the edge can be reduced to 3" for 1-3/4" or thicker LSL.
- 16d sinkers (3-1/4" x 0.148"Ø) can be spaced the same as the 10d and 12d nails.

SIDE-LOAD CONNECTION EXAMPLE



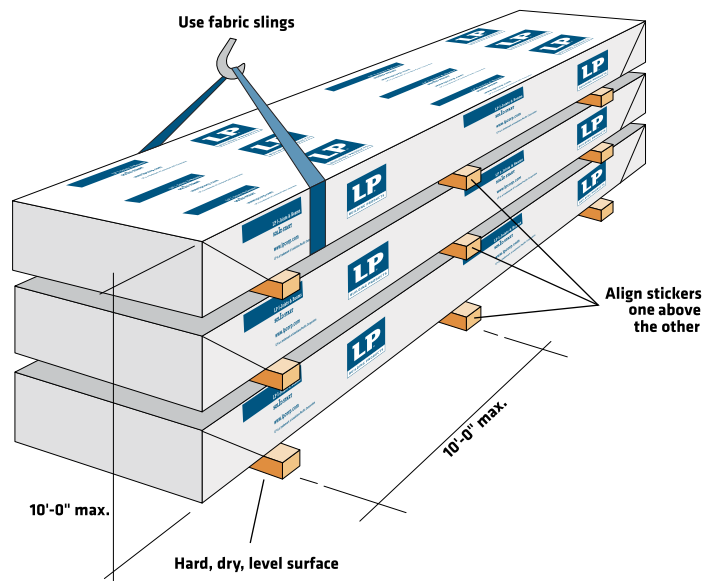
EXAMPLE: Assuming a properly designed 3-ply 14" beam, determine the equivalent connection to support a 3300 lb point load applied to the side of the beam.

SOLUTION:

- Determine the equivalent PLF load over the 2' length by dividing the applied load by 2: 3300 lb / 2' = 1650 plf
- Divide the equivalent PLF load by the capacity for the appropriate detail. For a 14" depth, 3 rows of nails are required. For Detail B with 3 rows of nails at 12" oc: 1650 plf / 464 plf = 3.6
- The required total number of nails is: 3.6 * 3 rows of nails @ 12" oc = 10.8 nails per foot
- Connect the front (loaded) ply with the nailing determined in step 3: drive 11 16d box nails within 12" to each side of the point load (a total of 22 nails). Verify nail spacing.
- Connect the back ply with half the number of nails determined in step 4: drive 6 16d box nails, from the back, within 12" to each side of the point load (a total of 12 nails). Verify nail spacing.
- Connect full length of member with the standard nailing or as required for side loads.
- Project designer shall detail to prevent rotation of the beam due to the applied side load.

Handling & Storage Guidelines

- Warning: Failure to follow proper procedures for handling, storage and installation could result in unsatisfactory performance, unsafe structures and possible collapse.
- Keep LP® SolidStart® LSL dry. These products are intended to resist the effects of moisture on structural performance from normal construction delays but are not intended for permanent exposure to the weather.
- Unload products carefully, by lifting. Support the bundles to reduce excessive bowing. Individual products should be handled in a manner which prevents physical damage during measuring, cutting, erection, etc.
- Keep products stored in wrapped and strapped bundles, stacked no more than 10' high. Support and separate bundles with 2 x 4 (or larger) stickers spaced no more than 10' apart. Keep stickers in line vertically.
- Product must not be stored in contact with the ground, or have prolonged exposure to the weather.
- Use forklifts and cranes carefully to avoid damaging product.
- Do not use a visually damaged product. Call your local LP SolidStart Engineered Wood Products distributor for assistance when damaged products are encountered.
- For satisfactory performance, LP SolidStart LSL must be used under dry, covered and well-ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
- For built-up members, LP SolidStart LSL shall be dry before nailing or bolting to avoid trapping moisture.
- LP SolidStart LSL shall not be used for unintended purposes such as ramps and planks.



LP SolidStart LSL 1730F_b-1.35E

LP SolidStart LSL 2360F_b-1.55E

LP SolidStart LSL 2500F_b-1.75E

LP SolidStart LSL 1730F_b-1.35E, 2360F_b-1.55E and 2500F_b-1.75E are available in:

- Lengths up to 48'. Longer lengths may be available for 1-3/4" and 3-1/2" thicknesses.
- Thicknesses up to 3-1/2".
- Depths of 4-3/8", 5-1/2", 7-1/4", 9-1/4", 9-1/2", 11-1/4", 11-7/8", 14", 16" and 18".

Contact your local distributor for availability.

CODE EVALUATION

ICC-ES evaluation report ESR-2403 can be obtained at www.icc-es.org.

APA product report PR-L280 can be obtained at www.apawood.org.

LP SolidStart Engineered Wood Products are manufactured at different locations in the United States and Canada.

Please verify availability with the LP SolidStart Engineered Wood Products distributor in your area before specifying these products.

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.



For more information on the full line of LP SolidStart Engineered Wood Products or the nearest distributor, please contact **1.888.820.0325** or e-mail customer.support@lpcorp.com. Visit our web site at www.lpcorp.com.

© 2012 Louisiana-Pacific Corporation. All rights reserved. APA and APA Rated are registered trademarks of APA – The Engineered Wood Association. SIMPSON STRONG-TIE is a registered trademark of Simpson Strong-Tie Company, Inc. SFI and the associated logo are trademarks of Sustainable Forestry Initiative, Inc. PEFC and the associated logo are trademarks of Programme for the Endorsement of Forest Certification. USP STRUCTURAL CONNECTORS is a registered trademark of United Steel Products Company. LP and SolidStart are registered trademarks of Louisiana-Pacific Corporation.

Printed in USA. Specifications (details) subject to change without notice.

LPEW0391 4/12 5M OS/HMH

