



**LP SOLIDSTART LSL  
BEAM & HEADER TECHNICAL GUIDE  
1730F<sub>b</sub>-1.35E, 2360F<sub>b</sub>-1.55E AND 2500F<sub>b</sub>-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<sub>b</sub>-1.35E, 2360F<sub>b</sub>-1.55E AND 2500F<sub>b</sub>-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.

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# LSL 1.35E Product Specifications & Design Values

ALLOWABLE STRESS DESIGN VALUES (PSI)					
Grade	Bending Stress $F_b^3$	Modulus of Elasticity E (x 10 <sup>6</sup> psi)	Shear Stress $F_v$	Compression Stress	
				$F_c$ (Parallel To Grain)	$F_{c\perp}$ (Perpendicular To Grain)
1730F <sub>b</sub> -1.35E	1730	1.35	410	1650	750

### 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:  $\Delta$  = 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 <sup>4</sup> )			
	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:

- 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. 5-1/2" wide members are a combination of a single piece of 3-1/2" LSL with a single piece of 2" 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.

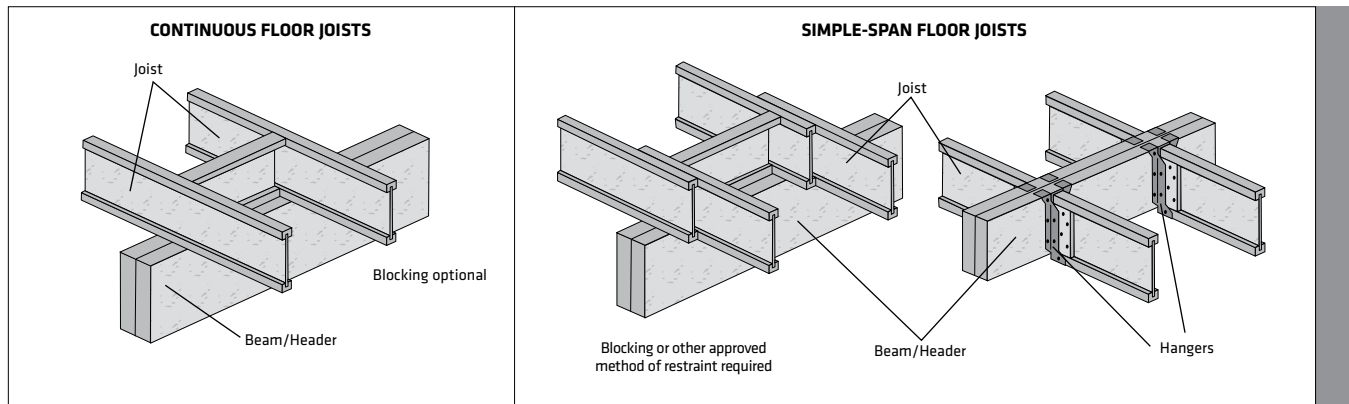
### REACTION CAPACITY (LBS)

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"	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:

- 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.

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



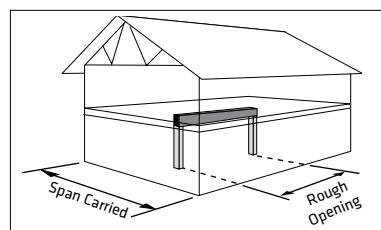
# LSL 1.35E Floor Header Quick Reference Tables

## 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<sub>0</sub>-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"	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"	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"
	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"	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"	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"	7-1/4"	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"	9-1/4"	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"	9-1/4"	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"	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"	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"	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"
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"	9-1/4"	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 6" 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 "-".



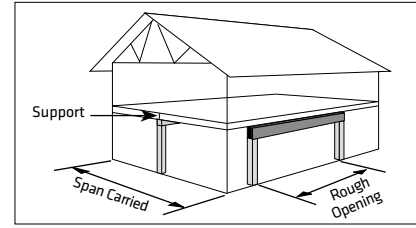
# LSL 1.35E Combined Header Quick Reference Tables

## 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"
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'-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"	5-1/2"	7-1/4"
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"	7-1/4"
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"	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"	9-1/4"
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"	9-1/4"
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"	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"	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"	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"	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"	9-1/4"	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"	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"
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'-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"	7-1/4"
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"	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"	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"	9-1/4"
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"	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"	9-1/4"	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"	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"	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"	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"	9-1/4"	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"	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

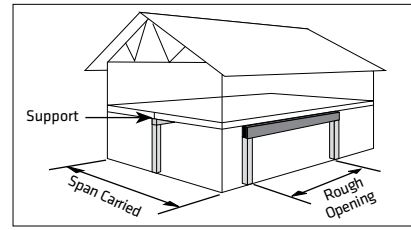
## TO USE:

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"
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"
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"
4'-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"	7-1/4"
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'-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"
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"
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"
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"
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"
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"
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"
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"

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"
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"
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"
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"	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'-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"	7-1/4"
6'-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"
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"
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"
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"
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"
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"
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"

## 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 1730F<sub>0</sub>-1.35E

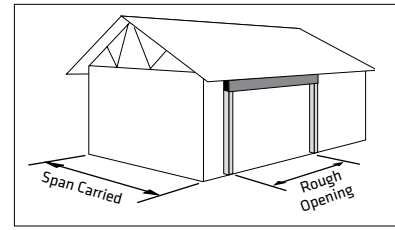
# LSL 1.35E Roof Header Quick Reference Tables

## 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"
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"	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"	4-3/8"
4'-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'-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"
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"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
6'-2"	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"	7-1/4"
6'-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"	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"	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"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
8'-2"	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"
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"	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"	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"	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"
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"	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'-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"
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"	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"	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"	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"	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"	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"	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"
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"	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"	9-1/4"	9-1/4"	11-1/4"
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"	9-1/2"	9-1/2"	11-1/4"	11-1/4"	11-1/4"
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	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

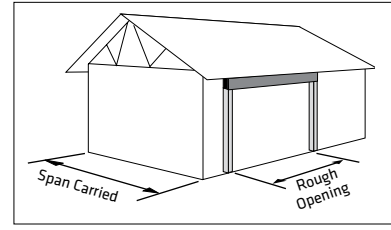
## TO USE:

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.



DESIGN LOADS ROOF: 30 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"
	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"	4-3/8"
	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"	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"
	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"	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"	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"
	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"
		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"
	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"	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'-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"	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"	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"	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"	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"	7-1/4"
	7'-2"	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"
	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"	<b>9-1/4"</b>
		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"	<b>9-1/4"</b>
	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"	<b>9-1/2"</b>
		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"
	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"	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>
		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"
	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"	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>
		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"

DESIGN LOADS ROOF: 40 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"
	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"	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"	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"	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"	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"	5-1/2"	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"	<b>9-1/4"</b>	<b>9-1/4"</b>
		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"	<b>9-1/4"</b>	<b>9-1/2"</b>
		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"	<b>9-1/4"</b>	<b>9-1/2"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>
		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"	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>
		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"	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>
		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"	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-1/4"</b>	<b>11-7/8"</b>	<b>11-7/8"</b>	<b>11-7/8"</b>
		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"

## 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 1730F<sub>0</sub>-1.35E

# 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:

- 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 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:

- 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 4.

## 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 at the bottom of this page.
- 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.
- To design for a live load deflection limit of L/480, use the Uniform Floor Load tables.
- The member width shall be a single ply of 3-1/2" LSL.
- 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 1730F<sub>0</sub>-1.35E

# LSL 1.55E Product Specifications & Design Values

ALLOWABLE STRESS DESIGN VALUES (PSI)					
Grade	Bending Stress $F_b^3$	Modulus of Elasticity E (x 10 <sup>6</sup> psi)	Shear Stress $F_v$	Compression Stress	
				$F_c$ (Parallel To Grain)	$F_{c\perp}$ (Perpendicular To Grain)
2360F <sub>v</sub> -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:  $\Delta$  = 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 <sup>4</sup> )			
	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:

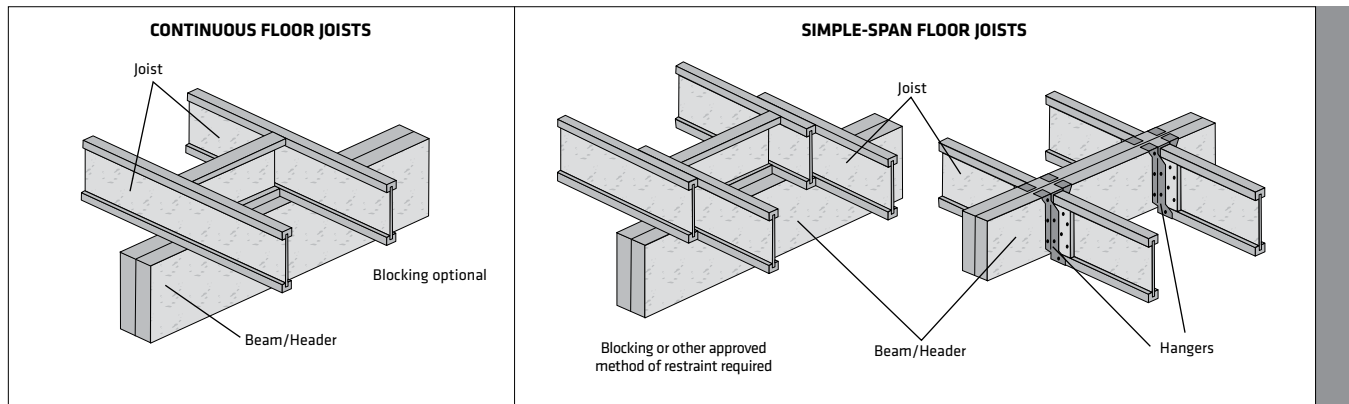
Refer to pages 34-35 for information on connecting multiple plies and for the equivalent specific gravity for design of nailed and bolted connections.

## 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"	12"
1-1/2"	1968	2625	3281	3937	4593	5250	5906	6562	7218	7875	8531	9187	9843	10500	11156	11812	12468	13125	13781	14437	15093	15750
1-3/4"	2296	3062	3828	4593	5359	6125	6890	7656	8421	9187	9953	10718	11484	12250	13015	13781	14546	15312	16078	16843	17609	18375
3-1/2"	4593	6125	7656	9187	10718	12250	13781	15312	16843	18375	19906	21437	22968	24500	26031	27562	29093	30625	32156	33687	35218	36750
5-1/4"	6888	9186	11484	13779	16077	18375	20670	22968	25263	27561	29859	32154	34452	36750	39045	41343	43638	45936	48234	50529	52827	55125

## 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.



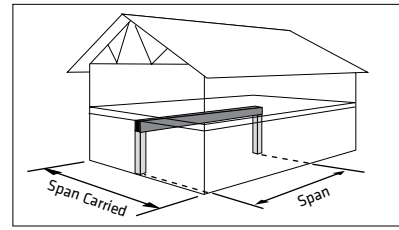
# LSL 1.55E Floor Beam Quick Reference Tables

## 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"	7-1/4"	9-1/4"	9-1/4"
	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"	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"	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"	9-1/4"
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"	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"	11-1/4"
12'-0"	3-1/2"	11-7/8"	14"	14"	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"	14"
14'-0"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"
16'-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"	16"	18"
18'-0"	3-1/2"	18"	18"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	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"	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"	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"	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"	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"	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"	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"	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"	11-7/8"
14'-0"	3-1/2"	14"	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"	14"
16'-0"	3-1/2"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"
	5-1/4"	14"	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"	18"
20'-0"	3-1/2"	18"	18"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	18"	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 "-".



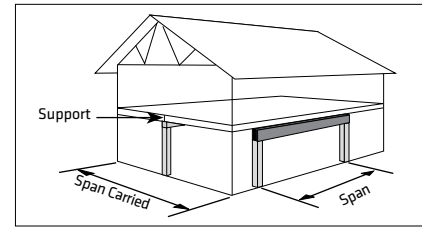
# LSL 1.55E Combined Beam Quick Reference Tables

## 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"**.



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"	9-1/4"
	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"	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"	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"	9-1/4"
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"	11-1/4"	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"	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"	14"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	11-1/4"	11-1/4"	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"	16"	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"	14"
14'-0"	3-1/2"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"
16'-0"	3-1/2"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-	-
	5-1/4"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"
16'-6"	3-1/2"	18"	18"	18"	18"	18"	18"	-	-	-	-	-	-
	5-1/4"	16"	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"	-	-	-
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"	-	-	-	-	-	-	-	-	-	-	-	-

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"	9-1/4"
	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"	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"	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"	9-1/4"
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"	14"	14"	14"
	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"	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"	14"	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"	11-1/4"
12'-0"	3-1/2"	14"	14"	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"
14'-0"	3-1/2"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"
16'-0"	3-1/2"	18"	18"	18"	18"	18"	18"	-	-	-	-	-	-
	5-1/4"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
16'-6"	3-1/2"	18"	18"	18"	18"	18"	-	-	-	-	-	-	-
	5-1/4"	16"	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"	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 "-".

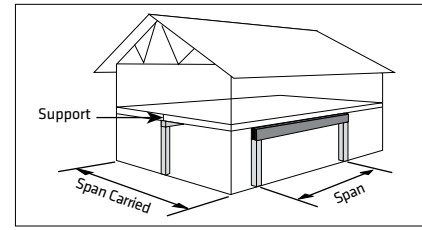
# LSL 1.55E Combined Beam Quick Reference Tables

## 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"	7-1/4"	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"	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"	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"	9-1/4"
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"	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"	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"	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"	11-1/4"
12'-0"	3-1/2"	14"	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"
14'-0"	3-1/2"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"
	5-1/4"	14"	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"	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"	-
18'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	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"	-	-	-	-	-	-	-	-	-	-	-
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"	7-1/4"	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"	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"	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"	9-1/2"
9'-6"	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"	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"	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"	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"	11-7/8"
12'-0"	3-1/2"	14"	14"	14"	16"	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"
14'-0"	3-1/2"	16"	16"	18"	18"	18"	18"	18"	18"	18"	-	-	-
	5-1/4"	14"	14"	14"	16"	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"	18"	-	-
16'-6"	3-1/2"	18"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	18"	18"	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 2360F<sub>6</sub>-1.55E

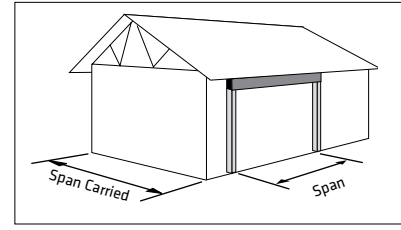
# LSL 1.55E Roof Beam Quick Reference Tables

## 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"	5-1/2"	5-1/2"	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"	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"	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"	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"	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"	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"	11-1/4"	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"	9-1/4"	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"	11-1/4"	11-7/8"	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"	9-1/2"	11-1/4"	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"	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"	11-1/4"	11-7/8"	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"	16"	16"
	5-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"
16'-6"	3-1/2"	14"	14"	14"	16"	16"	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"	14"	14"
18'-0"	3-1/2"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"
18'-6"	3-1/2"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"	-
	5-1/4"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"
20'-0"	3-1/2"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-	-	-
	5-1/4"	14"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"
22'-0"	3-1/2"	18"	18"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"	18"	18"
24'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	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"	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"	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"	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"	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"	9-1/2"	11-1/4"	11-1/4"	11-1/4"
	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"	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"	9-1/2"	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"	9-1/4"	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"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	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"
14'-0"	3-1/2"	11-7/8"	11-7/8"	14"	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"	14"
16'-0"	3-1/2"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	16"	16"	16"
	5-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	14"	14"	14"
16'-6"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"
18'-0"	3-1/2"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"	-	-	-
	5-1/4"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	16"	16"
18'-6"	3-1/2"	16"	16"	18"	18"	18"	18"	18"	18"	18"	-	-	-	-
	5-1/4"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"
20'-0"	3-1/2"	18"	18"	18"	18"	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	16"	16"	18"	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

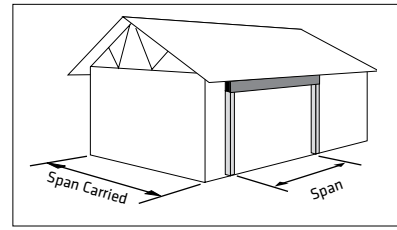
## TO USE:

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"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
5-1/4"		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"	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"
	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"	9-1/4"
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"	9-1/2"	11-1/4"	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"	9-1/4"
10'-0"	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"	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"	9-1/4"
12'-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"	14"
	5-1/4"	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"	11-1/4"	11-1/4"
14'-0"	3-1/2"	14"	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"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"
16'-0"	3-1/2"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"
16'-6"	3-1/2"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"
18'-0"	3-1/2"	16"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-
	5-1/4"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"
18'-6"	3-1/2"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-	-
	5-1/4"	14"	16"	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"	18"	-	-
22'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	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"
5-1/4"		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"	9-1/4"	9-1/2"	9-1/2"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	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"	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"	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"	11-1/4"	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"	9-1/4"	9-1/2"	11-1/4"	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"	16"
	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"
14'-0"	3-1/2"	14"	14"	14"	16"	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"	14"	16"
16'-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"	18"
16'-6"	3-1/2"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-	-
	5-1/4"	14"	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"	-
18'-6"	3-1/2"	18"	18"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	18"	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"	-	-	-	-	-	-	-	-	-	-	-	-

## 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 2360F<sub>6</sub>-1.55E

# 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.

## 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 2360F<sub>6</sub>-1.55E

# 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 2360F<sub>6</sub>-1.55E

# LSL 1.75E Product Specifications & Design Values

ALLOWABLE STRESS DESIGN VALUES (PSI)					
Grade	Bending Stress $F_b^3$	Modulus of Elasticity E (x 10 <sup>6</sup> psi)	Shear Stress $F_v$	Compression Stress	
				$F_c$ (Parallel To Grain)	$F_{c\perp}$ (Perpendicular To Grain)
2500F <sub>b</sub> -1.75E	2500	1.75	410	2450	950

## 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:  $\Delta$  = 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 <sup>4</sup> )			
	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:

- 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.

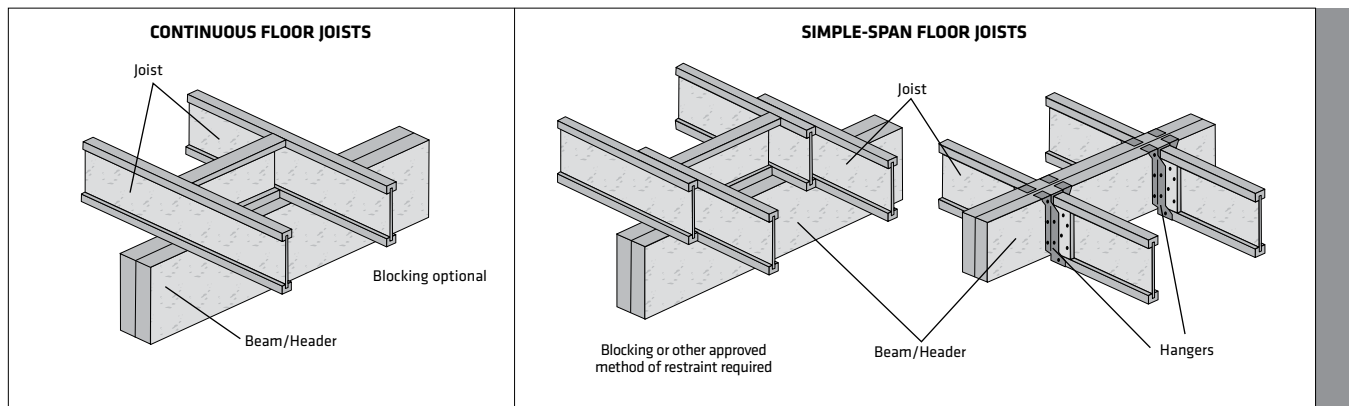
## REACTION CAPACITY (LBS)

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"	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:

- 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.

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



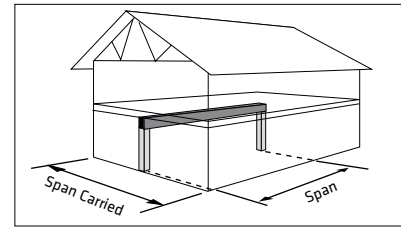
# LSL 1.75E Floor Beam Quick Reference Tables

## 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"	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"	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"	9-1/4"	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"	9-1/4"
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"	11-7/8"	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"	9-1/4"	9-1/4"	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"	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"	11-1/4"	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"	16"	18"	18"
	5-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	14"
16'-0"	3-1/2"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	-	-
	5-1/4"	14"	14"	14"	14"	14"	16"	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"	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"	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"	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"	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"	9-1/4"
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"	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"	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"	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"	11-1/4"
14'-0"	3-1/2"	11-7/8"	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"	11-7/8"	14"	14"	14"	14"	14"
16'-0"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"
18'-0"	3-1/2"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"	-	-
	5-1/4"	14"	14"	14"	16"	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"	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. 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 22 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 "-".



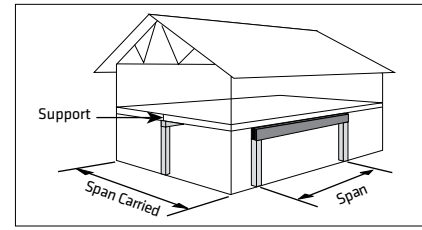
# LSL 1.75E Combined Beam Quick Reference Tables

## 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"**.



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"	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"	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"	9-1/4"	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"	9-1/2"
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"	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"	9-1/2"
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"	11-1/4"	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"	9-1/4"	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"	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"
14'-0"	3-1/2"	14"	14"	14"	16"	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"	14"
16'-0"	3-1/2"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"	18"
	5-1/4"	14"	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"
18'-0"	3-1/2"	18"	18"	18"	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	18"	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"	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"	-	-	-	-	-	-	-	-	-	-	-	-

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"	7-1/4"
	5-1/4"	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"
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"	11-1/4"
	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"	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"	11-1/4"	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"	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"	11-1/4"	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"	9-1/4"	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"	14"	14"
	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"
14'-0"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"	18"
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"
16'-0"	3-1/2"	16"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-
	5-1/4"	14"	14"	16"	16"	16"	16"	16"	16"	16"	16"	18"	18"
16'-6"	3-1/2"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-	-
	5-1/4"	14"	16"	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"	-	-
18'-6"	3-1/2"	18"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	18"	18"	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 "-".

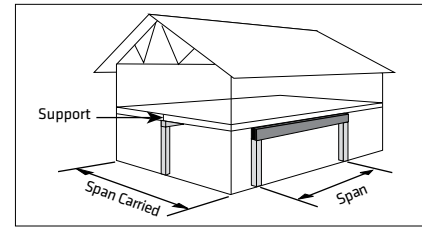
# LSL 1.75E Combined Beam Quick Reference Tables

## 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"**.



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" 5-1/4"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"
8'-0"	3-1/2" 5-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/4" 7-1/4"	9-1/2" 7-1/4"	9-1/4" 7-1/4"
9'-6"	3-1/2" 5-1/4"	9-1/2" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/2"	11-1/4" 9-1/2"	11-1/4" 9-1/2"	11-7/8" 11-1/4"	11-7/8" 11-1/4"
10'-0"	3-1/2" 5-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/2"	11-1/4" 9-1/2"	11-1/4" 11-1/4"	11-7/8" 11-1/4"	11-7/8" 11-1/4"	11-7/8" 11-1/4"	14" 11-1/4"	14" 11-1/4"
12'-0"	3-1/2" 5-1/4"	11-7/8" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-7/8"	14" 11-7/8"	14" 11-7/8"	14" 14"	16" 14"	16" 14"	16" 14"
14'-0"	3-1/2" 5-1/4"	14" 14"	16" 14"	16" 14"	16" 14"	16" 14"	16" 14"	16" 14"	16" 14"	18" 14"	18" 16"	18" 16"	18" 16"
16'-0"	3-1/2" 5-1/4"	16" 14"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	18" 18"	18" 18"	18" 18"
16'-6"	3-1/2" 5-1/4"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	-	-	-	-	-	-	-
18'-0"	3-1/2" 5-1/4"	18" 16"	-	-	-	-	-	-	-	-	-	-	-
18'-6"	3-1/2" 5-1/4"	-	-	-	-	-	-	-	-	-	-	-	-
20'-0"	3-1/2" 5-1/4"	-	-	-	-	-	-	-	-	-	-	-	-
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" 5-1/4"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	7-1/4" 5-1/2"	9-1/4" 7-1/4"
8'-0"	3-1/2" 5-1/4"	9-1/4" 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"	9-1/2" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"
9'-6"	3-1/2" 5-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/2"	11-1/4" 9-1/2"	11-1/4" 11-1/4"	11-7/8" 11-1/4"	11-7/8" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-1/4"
10'-0"	3-1/2" 5-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/4"	11-1/4" 9-1/2"	11-1/4" 11-1/4"	11-7/8" 11-1/4"	11-7/8" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-1/4"
12'-0"	3-1/2" 5-1/4"	14" 11-1/4"	14" 11-1/4"	14" 11-7/8"	14" 11-7/8"	14" 11-7/8"	14" 14"	14" 14"	14" 14"	16" 14"	16" 14"	16" 14"	16" 14"
14'-0"	3-1/2" 5-1/4"	16" 14"	16" 14"	16" 14"	16" 14"	18" 14"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"
16'-0"	3-1/2" 5-1/4"	18" 16"	18" 16"	18" 16"	18" 16"	18" 16"	18" 18"	18" 18"	18" 18"	18" 18"	18" 18"	18" 18"	18" 18"
16'-6"	3-1/2" 5-1/4"	18" 16"	18" 16"	-	16"	18"	18"	18"	18"	18"	18"	18"	18"
18'-0"	3-1/2" 5-1/4"	-	-	-	-	-	-	-	-	-	-	-	-
18'-6"	3-1/2" 5-1/4"	-	-	-	-	-	-	-	-	-	-	-	-
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 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 2500F<sub>6</sub>-1.75E

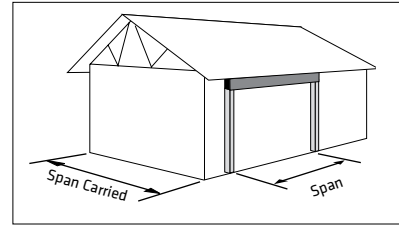
# LSL 1.75E Roof Beam Quick Reference Tables

## 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"**



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"	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"	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"	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"	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"	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"	9-1/4"
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"	9-1/4"	9-1/2"
	5-1/4"	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"	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"	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"	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"	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"	11-1/4"	11-7/8"
16'-0"	3-1/2"	14"	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"	14"
16'-6"	3-1/2"	14"	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"	14"
18'-0"	3-1/2"	14"	14"	16"	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"
18'-6"	3-1/2"	14"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"
20'-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"	18"
22'-0"	3-1/2"	18"	18"	18"	18"	18"	-	-	-	-	-	-	-
	5-1/4"	16"	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"	18"	-	-	-	-	-

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"	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"	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"	7-1/4"	7-1/4"	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"	9-1/4"	9-1/2"	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"	11-1/4"	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"	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"	16"	
	5-1/4"	11-7/8"	11-7/8"	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"	16"	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

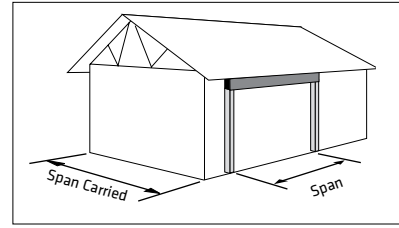
## TO USE:

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.



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"	5-1/2"	5-1/2"
	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"	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"	7-1/4"	7-1/4"
	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"	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"	9-1/4"
	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"	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"	9-1/2"	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"	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"	11-1/4"	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"	9-1/4"	9-1/4"	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"	14"	16"	16"
	5-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"
16'-0"	3-1/2"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"
	5-1/4"	11-7/8"	11-7/8"	14"	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"	18"
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"
18'-0"	3-1/2"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	-	-
	5-1/4"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	16"
18'-6"	3-1/2"	16"	16"	18"	18"	18"	18"	18"	18"	18"	-	-	-
	5-1/4"	14"	14"	14"	16"	16"	16"	16"	16"	16"	18"	18"	18"
20'-0"	3-1/2"	18"	18"	18"	18"	-	-	-	-	-	-	-	-
	5-1/4"	16"	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"	-	-	-	-	-	-	-	-	-	-

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"	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"	5-1/2"
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"	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"	9-1/4"
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"	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"	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"	11-1/4"	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"	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"	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"	11-7/8"
14'-0"	3-1/2"	14"	14"	14"	14"	16"	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"	14"
16'-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"
16'-6"	3-1/2"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"	-	-
	5-1/4"	14"	14"	14"	14"	16"	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"
18'-6"	3-1/2"	18"	18"	18"	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	16"	18"	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 2500F<sub>6</sub>-1.75E

# 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			L/480
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		1043	11'	
12'	213	284	402	337	449	547		484	645	702		875	12'	
13'	170	226	334	270	360	465		390	520	597	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:

- 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 = 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	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:

- 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.



# 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	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:

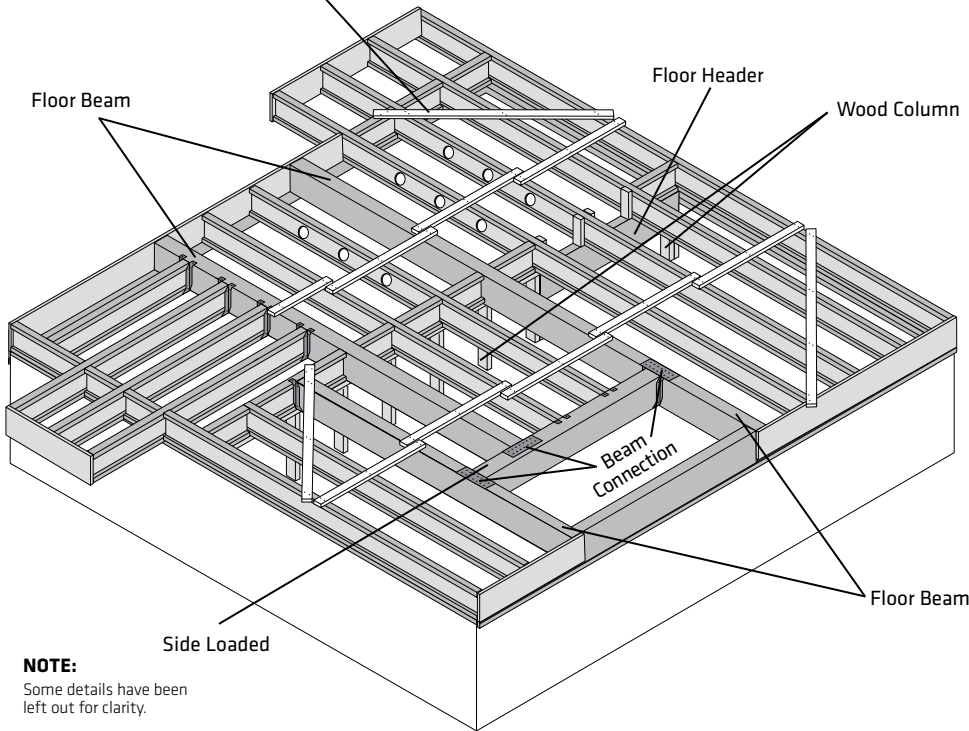
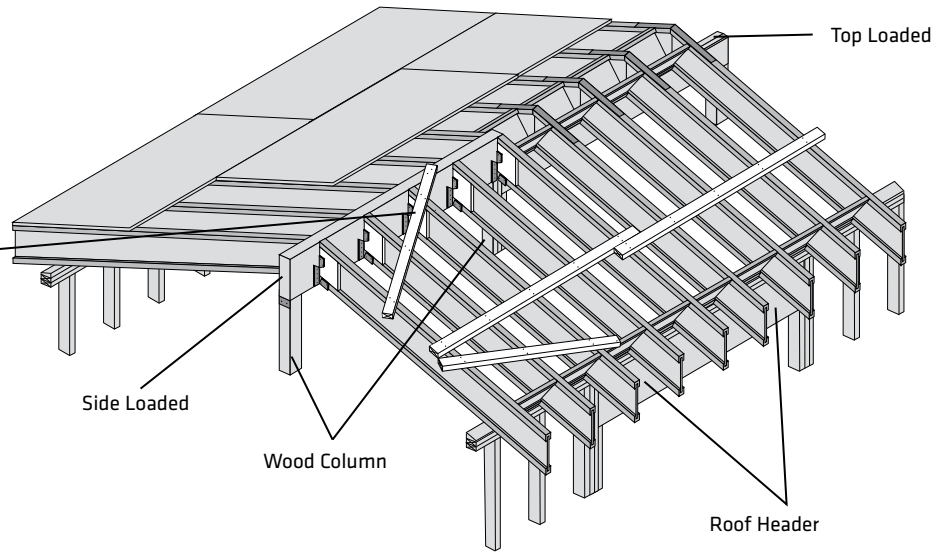
- The allowable loads represent the capacity of the member in pounds per lineal foot (plf) of length.
- For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table above.
- The designer shall check both the appropriate Total 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.

LSL 2500F<sub>6</sub>-1.75E

# Temporary Bracing & Warnings

**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.



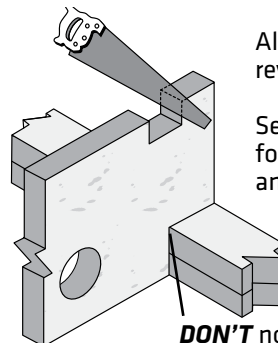
**NOTE:**

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**

Structurally adequate hanger

Hanger shall apply load equally to each ply or special design required

**P4 STEEL COLUMN & WOOD COLUMN**

Simpson® CCO, USP® CCS or equal column cap

Provide specified bearing length

Simpson PC or CC, USP PCM or CC or equal post or column cap

Framing details such as joists and sheathing shall be provided to prevent beam from twisting or rotating at support

**P6 FLOOR BEAM (Flush ceiling)**

Top mount hangers recommended

Check stiffener/filler requirements depending on load and hanger type

Prevent the beam from rotating by using rim or blocking

**P7 CONCRETE WALL**

Simpson GLB, USP LBS or equal seat

NOTE: Protect wood from contact with concrete as required by code

**Q1 WINDOW/DOOR HEADER**

Rim Board

Provide specified or prescriptive bearing length

**Q2 WINDOW/DOOR HEADER**

Continuous plate

Provide specified or prescriptive bearing length

**BEAM HOLE DETAILS**

1 foot

Minimum 2 x diameter of larger hole

1 foot

1/3 beam depth

Area B

Area A

Area B

1/3 span length

Clear span

**Q4 MASONRY HANGER**

Simpson WM, USP MPH, or equal hanger

NOTE: Protect wood from contact with concrete as required by code

**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)

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)

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)

See Connection Assemblies for more information

DETAIL A	DETAIL B	DETAIL C/E	DETAIL D	DETAIL F	DETAIL G	DETAIL H	CONNECTION ASSEMBLIES
<p><b>MAXIMUM 4" WIDE 2-PLY BEAMS</b></p> <p>2" max. ply thickness</p>	<p><b>MAXIMUM 6" WIDE 3-PLY BEAMS</b></p> <p>2" max. ply thickness</p>	<p><b>MAXIMUM 7-1/4" WIDE 2-PLY BEAMS</b></p> <p>2" maximum side member 3-1/2" main member for C 5-1/4" main member for E</p>	<p><b>MAXIMUM 9-1/4" WIDE 3-PLY BEAMS</b></p> <p>2" maximum side members 5-1/4" maximum main member</p>	<p><b>MAXIMUM 7" WIDE 3- OR 4-PLY BEAMS</b></p>	<p><b>MAXIMUM 7" WIDE 2-PLY BEAMS</b></p>	<p><b>MAXIMUM 7" WIDE 2-, 3- OR 4-PLY BEAMS</b></p> <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
<b>A</b>	412	618	506	1012
<b>B</b>	309	464	380	760
<b>C</b>	309	464	522	1044
<b>D</b>	275	412	464	928
<b>F</b>	na	na	337	674
<b>G</b>	na	na	858	1716
<b>H</b>	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 <sup>13</sup>
3"	0.148	99	0.96	10d common
	0.128	91	0.88	10d box
	0.120	81	0.79	Power-driven nail <sup>13</sup>

**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.

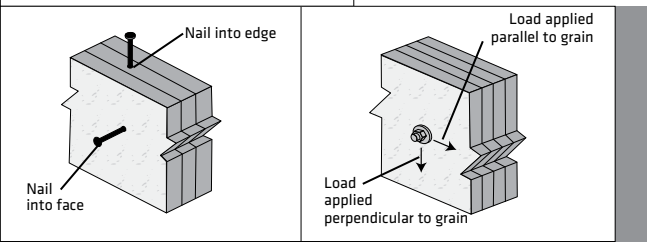
## FASTENER DESIGN

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



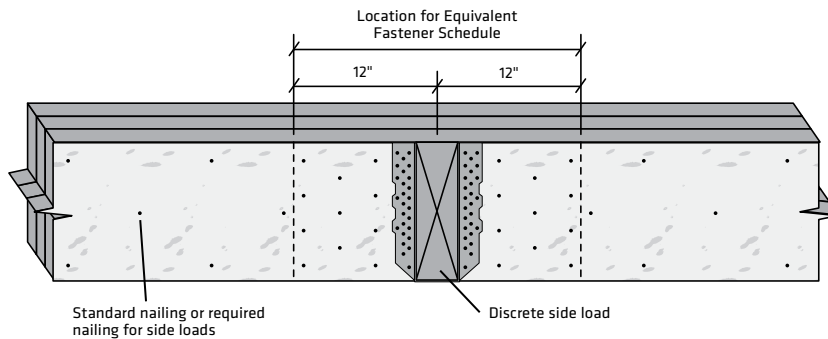
## NAIL SPACING REQUIREMENTS

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 <sup>s</sup>	2-1/2"	4" <sup>a</sup>	6"
	Face	8d & smaller	7/8"	1"	
		10d & 12d	7/8"	1"	
		16d <sup>s</sup>	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



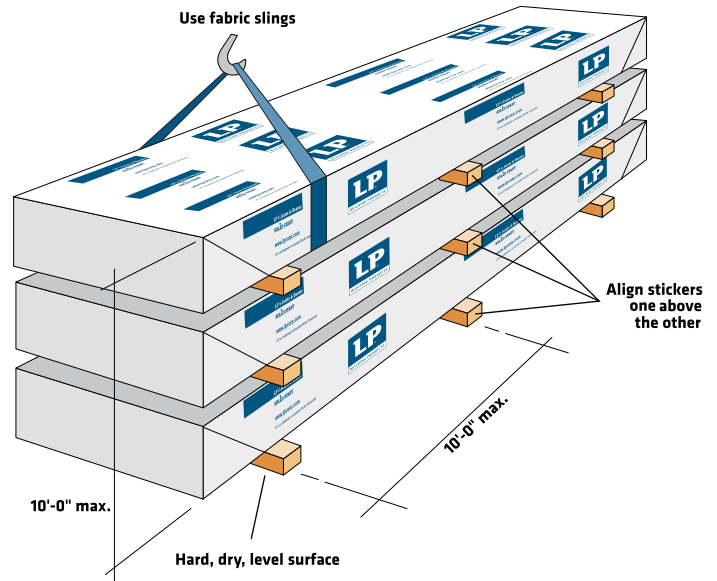
**EXAMPLE:** Assuming a properly designed 3-ply 14" beam, determine the equivalent connection to support a 3300 lb point load applied to the side of the beam.

### 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<sub>b</sub>-1.35E

## LP SolidStart LSL 2360F<sub>b</sub>-1.55E

## LP SolidStart LSL 2500F<sub>b</sub>-1.75E

LP SolidStart LSL 1730F<sub>b</sub>-1.35E, 2360F<sub>b</sub>-1.55E and 2500F<sub>b</sub>-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](http://www.icc-es.org).

APA product report PR-L280 can be obtained at [www.apawood.org](http://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](mailto:customer.support@lpcorp.com). Visit our web site at [www.lpcorp.com](http://www.lpcorp.com).

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