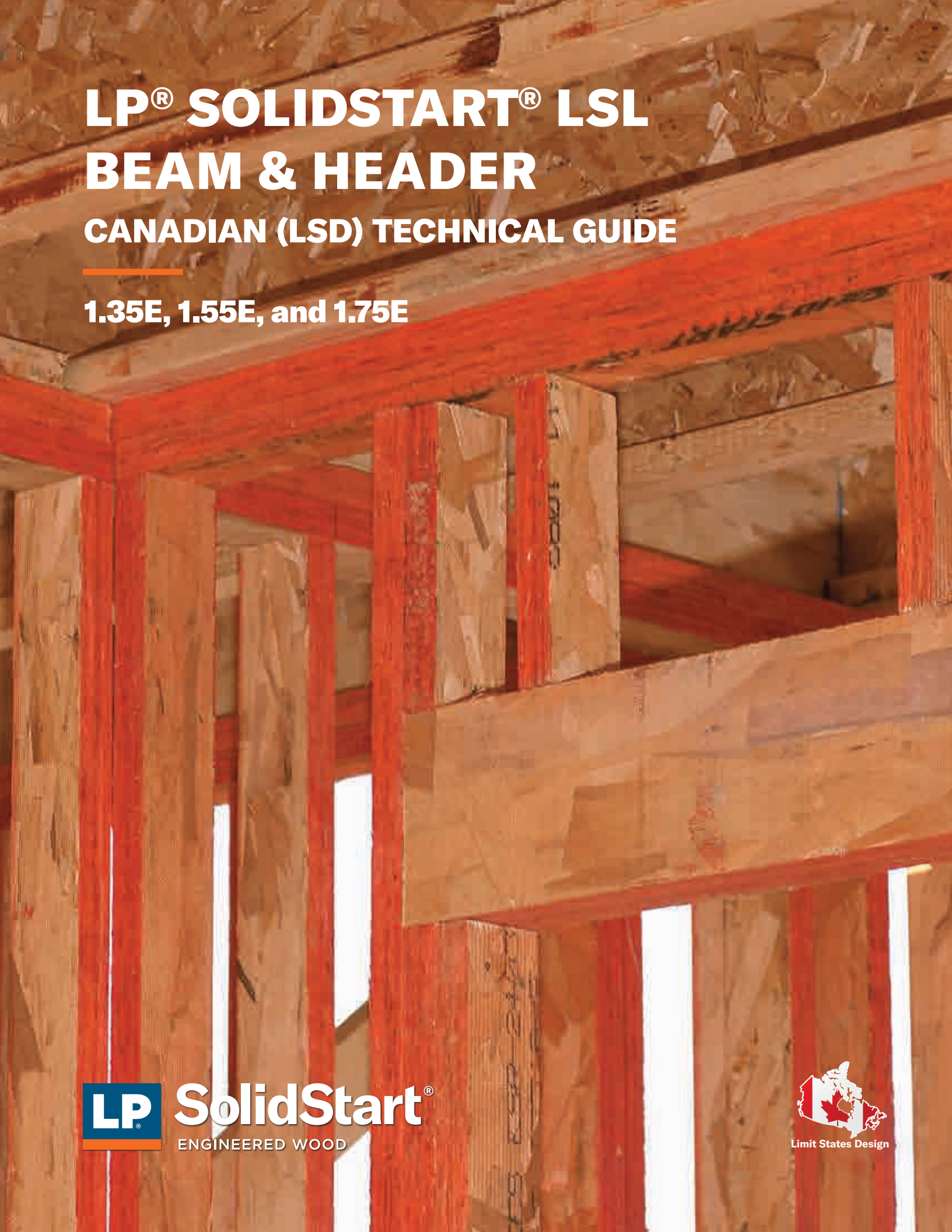
LP® SOLIDSTART® LSL BEAM & HEADER

CANADIAN (LSD) TECHNICAL GUIDE

1.35E, 1.55E, and 1.75E



LP SolidStart®
ENGINEERED WOOD

Limit States Design

Designed to Outperform Traditional Lumber

LP® SolidStart® Laminated Strand Lumber (LSL) has many advantages over competing products like traditional lumber, LVL, PSL, and Glulam 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 traditional lumber, LP SolidStart LSL can reduce build cycle time because one piece is needed instead of multiple pieces.

1.35E, 1.55E, AND 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.

RESOURCE MANAGEMENT

- Our wood procurement process targets small, fast growing trees that can be replenished more quickly than larger, older trees.
- We use SFI® certified forest management and fiber sourcing systems to help ensure that our wood comes from well-managed forests. All LP SolidStart products are certified to the SFI chain-of-custody standard.
- Virtually the entire log is used in our manufacturing process. The wood waste is repurposed or used to help fuel our mills.
- We only use low-emitting, safe resins in the manufacture of all LP SolidStart products and do not add any urea-formaldehyde.
- LP SolidStart products may help you achieve certification points in a number of leading green building programs.
- Available in grades up to 1.75E, it allows for longer spans and can reduce number of pieces needed; this results in a more efficient utilization of resources.

SUSTAINABLE FORESTRY INITIATIVE

Good for you. Good for our forests.®

www.sfiprogram.org

SFI-00003

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 average moisture content in lumber will not exceed a yearly average of 15% nor a maximum of 19% at any time.
2. This guide is valid only for LP SolidStart LSL members supporting loads applied parallel to the face of the strands (“edge” orientation).
3. The tables in this guide meet the design requirements of the National Building Code of Canada for Limit States Design and assume a normal importance category. Ensure that the specified 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 Uniform Load Resistance (PLF) 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 distributor.
5. Beam spans in this guide 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. A structurally adequate bearing surface under the full width (thickness) of the member 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 Factored Reaction Resistance chart 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. Vibration has not been considered in this guide. If LP SolidStart LSL is used as a floor joist, the designer shall perform the required vibration control checks.
9. LP SolidStart LSL is not cambered.
10. Higher grades of LP SolidStart LSL can be substituted for the indicated grade.
11. 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.
12. Lateral restraint shall also be provided at all supports to prevent rotation or twisting.
13. 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

SPECIFIED STRENGTHS & STIFFNESS (PSI)

Grade	Bending f_b[4]	Modulus of Elasticity E[5] (x 10^6)	Shear f_v	Compression	
				f_c (Parallel To Grain)	f_{cp} (Perpendicular To Grain)
1.35E	3195	1.35	760	2635	1365

NOTES:

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2. The specified strengths and stiffness are for standard load duration. Specified strengths shall be adjusted according to code. Stiffness shall not be adjusted.
3. The specified strengths and stiffness are for members supporting loads applied parallel to the wide face ("edge" or "beam" orientation).
4. The specified Bending strength, f_b, is tabulated for 12" depth. For depths other than 12", multiply f_b by $(12/depth)^{0.120}$. For depths less than 3-1/2", multiply f_b by 1.159.
5. Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{270wL^4}{Ebd^3} + \frac{28.8wL^2}{Ebd}$

Where: Δ = deflection (in), w = uniform load (plf), L = design span (ft), E = modulus of elasticity (from table), b = width (in), d = depth (in)

Equations for other conditions can be found in engineering references.

SECTION PROPERTIES AND FACTORED RESISTANCES

Depth	Weight (lb/ft)				Moment (lb-ft)				Shear (lb)				Moment of Inertia (in^4)			
	1-3/4"	3-1/2"	5-1/4"	5-1/2"	1-3/4"	3-1/2"	5-1/4"	5-1/2"	1-3/4"	3-1/2"	5-1/4"	5-1/2"	1-3/4"	3-1/2"	5-1/4"	5-1/2"
4-3/8"	2.4	4.7	7.1	7.4	1510	3020	4530	4746	3491	6983	10474	10973	12	24	37	38
5-1/2"	2.9	5.7	8.5	8.9	2322	4643	6965	7297	4389	8778	13167	13794	24	49	73	76
7-1/4"	3.9	7.8	11.7	12.2	3903	7805	11708	12265	5786	11571	17357	18183	56	111	167	175
9-1/4"	5.0	9.9	14.9	15.6	6170	12339	18509	19391	7382	14763	22145	23199	115	231	346	363
9-1/2"	5.1	10.2	15.3	16.0	6487	12974	19461	20388	7581	15162	22743	23826	125	250	375	393
11-1/4"	6.1	12.1	18.1	19.0	8914	17829	26743	28016	8978	17955	26933	28215	208	415	623	653
11-7/8"	6.4	12.7	19.1	20.0	9868	19736	29604	31014	9476	18953	28429	29783	244	488	733	768

NOTES

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

FASTENERS:

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

FACTORED REACTION RESISTANCE (LBS)

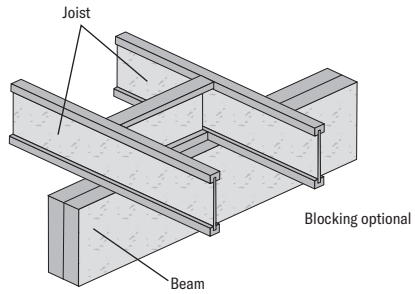
	Bearing Length																					
Width	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"	7"	7-1/2"	8"	8-1/2"	9"	9-1/2"	10"	10-1/2"	11"	11-1/2"	12"
1-3/4"	2860	3820	4770	5730	6680	7640	8590	9550	10510	11460	12420	13370	14330	15280	16240	17190	18150	19110	20060	21020	21970	22930
3-1/2"	5730	7640	9550	11460	13370	15280	17190	19110	21020	22930	24840	26750	28660	30570	32480	34390	36300	38220	40130	42040	43950	45860
5-1/4"	8590	11460	14330	17190	20060	22930	25790	28660	31530	34390	37260	40130	42990	45860	48730	51590	54460	57330	60190	63060	65920	68790
5-1/2"	9000	12010	15010	18010	21020	24020	27020	30030	33030	36030	39030	42040	45040	48040	51050	54050	57050	60060	63060	66060	69060	72070

NOTES

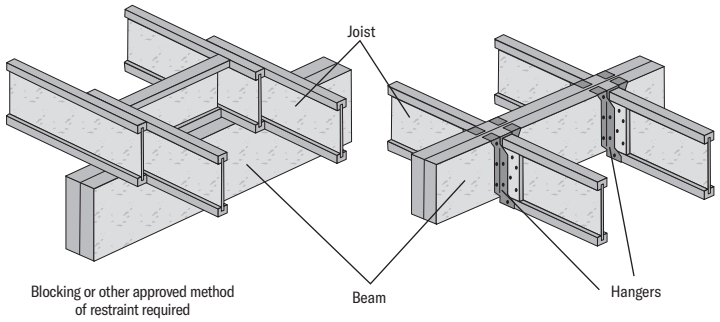
1. Tabulated values are based on the factored compression resistance, perpendicular-to-grain, of the LSL. This is suitable for headers bearing on steel or the end-grain of studs.
2. Verify that the support for the header is structurally adequate to carry the reaction. The compressive resistance, parallel-to-grain,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

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

CONTINUOUS FLOOR JOISTS



SIMPLE-SPAN FLOOR JOISTS

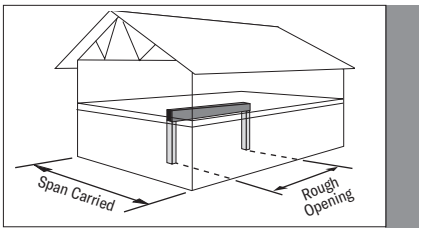


LSL 1.35E Floor Header Quick Reference Tables

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"**



CONTINUOUS FLOOR JOISTS (SPECIFIED 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"	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"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**	**7-1/4"**
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
5'-2"	3-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**	**7-1/4"**	**7-1/4"**
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"
5'-8"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**	**7-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
6'-2"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**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"**	**9-1/4"**	**9-1/4"**	**9-1/4"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"
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"**	**9-1/2"**	**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"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**
7'-8"	3-1/2"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
	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"**	**9-1/4"**	**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"	9-1/4"	9-1/4"	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"**	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/2"**	**11-1/4"**	**11-1/4"**
9'-2"	3-1/2"	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**

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

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

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 requried where **bold**. The bearing length is based on the compressive resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance 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 connectors. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

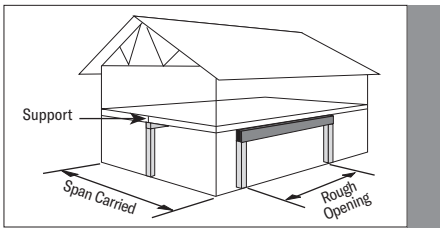
LSL 1.35E Combined Header Quick Reference Tables

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"**



SPECIFIED LOADS
ROOF: 20 PSF LIVE, 15 PSF DEAD
FLOOR: 40 PSF LIVE, 15 PSF DEAD

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

SPECIFIED LOADS
ROOF: 30 PSF SNOW, 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"	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"
3'-8"	3-1/2"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"
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"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
4'-8"	3-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
5'-2"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**	**9-1/4"**	**9-1/4"**
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
5'-8"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**
	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
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"**
	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"
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"**	**9-1/2"**	**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"	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"**	**9-1/2"**	**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"	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"**	**9-1/2"**	**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"	9-1/4"	9-1/4"	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"	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	**11-7/8"**	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/2"**	**11-1/4"**
8'-8"	3-1/2"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
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"	9-1/2"	9-1/2"	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 resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 4 for additional information.
3. Deflections are limited to L/360 live/snow 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 connectors. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.35E Combined Header Quick Reference Tables

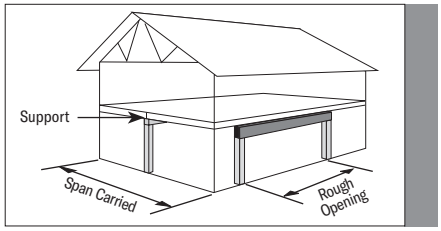
TO USE:

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.



SPECIFIED LOADS
ROOF: 40 PSF SNOW, 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"	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"
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"	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"
4'-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"**
	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"
4'-8"	**3-1/2"**	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**	**7-1/4"**	**9-1/4"**
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"
5'-2"	**3-1/2"**	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
5'-8"	**3-1/2"**	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**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"
6'-2"	**3-1/2"**	7-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/2"**	**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"	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"**	**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"**
7'-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"**	**11-1/4"**	**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"**
7'-8"	**3-1/2"**	**9-1/4"**	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**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"**	**9-1/2"**	**11-1/4"**
8'-2"	**3-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
8'-8"	**3-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-	-	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	**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"**	**11-7/8"**	-	-	-	-	-	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**

SPECIFIED LOADS
ROOF: 50 PSF SNOW, 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"	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"
3'-8"	**3-1/2"**	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	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"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**	**7-1/4"**	**7-1/4"**
	5-1/2"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"
4'-8"	**3-1/2"**	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	**7-1/4"**	**7-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	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'-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"
5'-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"**	**9-1/2"**	**11-1/4"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"
6'-2"	**3-1/2"**	9-1/4"	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	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"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**
	5-1/2"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**	**9-1/4"**
7'-2"	**3-1/2"**	**9-1/4"**	**9-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**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"**	**9-1/2"**	**11-1/4"**
7'-8"	**3-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
8'-2"	**3-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-	-	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**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"**	**11-7/8"**	-	-	-	-	-	-	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/2"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**
9'-2"	**3-1/2"**	**11-7/8"**	-	-	-	-	-	-	-	-	-	-
	5-1/2"	9-1/2"	11-1/4"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-

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 resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 4 for additional information.
3. Deflections are limited to L/360 live/snow 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 connectors. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.35E Roof Header Quick Reference Tables

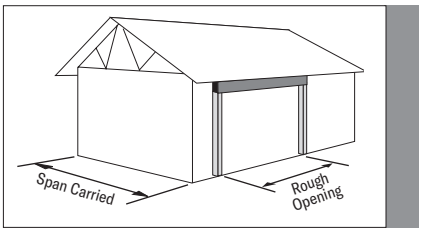
TO USE:

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.



SPECIFIED LOADS
ROOF: 20 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"	4-3/8"	4-3/8"	4-3/8"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"
4'-2"	3-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"
4'-8"	3-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"
5'-2"	3-1/2"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"
5'-8"	3-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
6'-2"	3-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
6'-8"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
7'-2"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	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'-8"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
8'-2"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
8'-8"	3-1/2"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"
9'-2"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	9-1/2"
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"

SPECIFIED LOADS
ROOF: 30 PSF SNOW, 15 PSF DEAD

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

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 resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 4 for additional information.
3. Deflections are limited to L/360 live/snow load and L/240 total load.
4. Loads assume a 2' maximum overhang on the roof.
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 connectors. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

LSL 1.35E Roof Header Quick Reference Tables

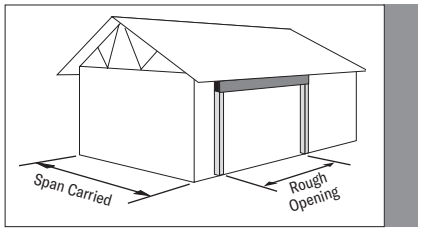
TO USE:

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 40 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.



SPECIFIED LOADS
ROOF: 40 PSF SNOW, 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"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"
4'-2"	3-1/2"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"
4'-8"	3-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
5'-2"	3-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"
5'-8"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
6'-2"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
6'-8"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
7'-2"	3-1/2"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**	**9-1/2"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"
7'-8"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
8'-2"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	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"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
8'-8"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
9'-2"	3-1/2"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	**11-7/8"**
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"

SPECIFIED LOADS
ROOF: 50 PSF SNOW, 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"	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"	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'-2"	3-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
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"
	5-1/2"	4-3/8"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
5'-2"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
5'-8"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**
	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
6'-2"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/4"**	**9-1/4"**	**9-1/4"**
	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"
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"**	**9-1/2"**	**9-1/2"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
7'-2"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	**9-1/4"**	**9-1/2"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	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"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**
	5-1/2"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
8'-2"	3-1/2"	9-1/4"	9-1/4"	9-1/2"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**
	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"	9-1/2"	9-1/2"
8'-8"	3-1/2"	9-1/2"	11-1/4"	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-1/4"**	**11-7/8"**	**11-7/8"**	-	-
	5-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	**11-1/4"**
9'-2"	3-1/2"	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"	9-1/2"	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 resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 4 for additional information.
3. Deflections are limited to L/360 live/snow load and L/240 total load.
4. Loads assume a 2' maximum overhang on the roof.
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 connectors. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

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

TO USE:

1. Select the span required.
2. Compare the factored design total load to the Factored Total Resistance column.
3. Compare the unfactored design total load to the Total Load Deflection Resistance.
4. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit.
5. Select a product that satisfies all three conditions.

EXAMPLE:

For a 10' header span, select a 3-1/2" header that satisfies an L/360 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 180 plf

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 480) + (1.25 x 180) = 945 plf
Unfactored Total Load = 480 + 180 = 660 plf
Unfactored Live Load = 480 plf

SOLUTION:

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

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
3'	1106	1474	2206	2678	1984	2644	3962	4120	3804	5072		6161	6366			7861	3'
4'	506	676	1010	1504	946	1260	1886	2314	1928	2572	3850	3892	3444	4592		5892	4'
5'	270	360	536	960	514	686	1024	1478	1088	1452	2170	2487	2028	2704		3936	5'
6'	160	214	316	665	308	412	612	1024	666	890	1326	1724	1278	1704	2546	2729	6'
7'	102	136	200	487	198	264	392	750	436	580	864	1264	850	1134	1690	2002	7'
8'	68	92	132	371	134	180	264	573	298	398	590	965	590	788	1172	1530	8'
9'	48	64	92	292	96	128	184	451	212	284	418	761	426	568	842	1206	9'
10'	34	46	66	235	70	94	134	364	156	210	306	614	316	422	624	974	10'
11'	-	-	-	-	52	70	100	299	118	158	230	506	240	322	472	803	11'
12'	-	-	-	-	40	54	76	250	92	122	176	423	188	250	366	673	12'
13'	-	-	-	-	32	42	58	212	72	96	138	359	148	198	288	571	13'
14'	-	-	-	-	-	-	-	-	58	78	110	308	120	160	230	491	14'
15'	-	-	-	-	-	-	-	-	48	64	88	267	98	130	186	426	15'
16'	-	-	-	-	-	-	-	-	38	52	70	234	80	108	152	373	16'
17'	-	-	-	-	-	-	-	-	32	44	58	206	68	90	126	329	17'
18'	-	-	-	-	-	-	-	-	-	-	-	-	56	76	104	292	18'

Span	3-1/2" x 9-1/2"				3-1/2" x 11-1/4"				3-1/2" x 11-7/8"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
3'	6712			8073	9228			9560				10092	3'
4'	3658	4878		6052	5278	7038		7166	5900			7565	4'
5'	2166	2888		4138	3234	4314		5690	3658	4878		6048	5'
6'	1370	1826	2728	2870	2096	2796		3946	2392	3188		4369	6'
7'	914	1218	1816	2105	1422	1898	2834	2895	1634	2178		3206	7'
8'	636	848	1262	1609	1004	1338	1996	2213	1158	1544	2302	2451	8'
9'	458	612	908	1268	732	976	1452	1745	846	1130	1680	1933	9'
10'	342	456	672	1025	548	730	1084	1411	636	848	1260	1563	10'
11'	260	348	510	845	420	560	828	1163	488	652	964	1288	11'
12'	202	270	396	708	328	438	646	975	382	510	754	1080	12'
13'	160	214	312	601	262	350	512	828	306	408	598	918	13'
14'	130	172	248	516	212	282	412	712	246	330	482	789	14'
15'	106	142	202	448	174	232	334	618	202	270	392	685	15'
16'	88	116	164	392	144	192	276	542	168	224	324	600	16'
17'	72	98	136	346	120	160	228	478	140	188	270	530	17'
18'	62	82	114	307	102	136	192	425	120	160	226	471	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. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/480 or L/360 as noted in the table. Vibration has not been considered.
5. Total Deflection Resistance is limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 4.

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
4. The tabulated resistances in the tables are for a single ply of 3-1/2" LSL.
5. Do not use a product where designated "-" without further analysis by a design professional.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

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

* Deflections rounded to the nearest 1/16".

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

TO USE:

1. Select the span required. For headers with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof pitch adjustment factor from the table at the bottom of this page.
2. Compare the factored design total load to the Factored Total Resistance column.
3. Compare the unfactored design total load to the Total Load Deflection Resistance.
4. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit. For a live load deflection limit of L/480, compare the unfactored design live load to the L/480 Live Load Deflection Resistance from the Uniform Floor Load Resistance Tables.
5. Select a product that satisfies all three conditions.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 8' horizontal header span with a pitch of 4:12, select a 3-1/2" header that satisfies an L/360 Snow Load deflection limit for the following specified loads: Snow Load = 720 plf; Dead Load = 400 plf

CALCULATE HEADER SPAN: 8' x 1.054 = 8.43' ⟶ **Use 9'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 720) + (1.25 x 400) = 1580 plf
Unfactored Total Load = 0.9 x 720 + 400 = 1048 plf
Unfactored Snow Load = 0.9 x 720 = 648 plf

SOLUTION:

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

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
3'	1474	2212		2678	2644	3968		4120	5072			6161				7861	3'
4'	676	1014	1348	1504	1260	1892		2314	2572	3858		3892	4592			5892	4'
5'	360	540	716	960	686	1030	1368	1478	1452	2178		2487	2704			3936	5'
6'	214	320	422	665	412	618	818	1024	890	1334		1724	1704	2556		2729	6'
7'	136	204	268	487	264	398	524	750	580	872	1154	1264	1134	1702		2002	7'
8'	92	138	180	371	180	270	354	573	398	598	790	965	788	1182		1530	8'
9'	64	98	124	292	128	192	248	451	284	426	562	761	568	852	1128	1206	9'
10'	46	70	90	235	94	140	180	364	210	314	412	614	422	634	834	974	10'
11'	36	54	66	193	70	106	134	299	158	238	310	506	322	482	634	803	11'
12'	-	-	-	-	54	82	102	250	122	184	238	423	250	376	492	673	12'
13'	-	-	-	-	42	64	80	212	96	146	186	359	198	298	388	571	13'
14'	-	-	-	-	34	52	62	182	78	118	148	308	160	240	310	491	14'
15'	-	-	-	-	-	-	-	-	64	96	120	267	130	196	252	426	15'
16'	-	-	-	-	-	-	-	-	52	78	98	234	108	162	206	373	16'
17'	-	-	-	-	-	-	-	-	44	66	80	206	90	136	170	329	17'
18'	-	-	-	-	-	-	-	-	36	56	66	184	76	114	142	292	18'

Span	3-1/2" x 9-1/2"				3-1/2" x 11-1/4"				3-1/2" x 11-7/8"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
3'				8073				9560				10092	3'
4'	4878			6052	7038			7166				7565	4'
5'	2888			4138	4314			5690	4878			6048	5'
6'	1826	2740		2870	2796			3946	3188			4369	6'
7'	1218	1828		2105	1898	2846		2895	2178			3206	7'
8'	848	1272		1609	1338	2008		2213	1544	2316		2451	8'
9'	612	918	1214	1268	976	1464		1745	1130	1694		1933	9'
10'	456	684	900	1025	730	1096		1411	848	1272		1563	10'
11'	348	522	684	845	560	842	1110	1163	652	978		1288	11'
12'	270	406	530	708	438	658	866	975	510	766	1010	1080	12'
13'	214	322	420	601	350	524	686	828	408	612	802	918	13'
14'	172	260	336	516	282	424	552	712	330	494	646	789	14'
15'	142	212	272	448	232	348	450	618	270	406	528	685	15'
16'	116	176	224	392	192	288	372	542	224	336	436	600	16'
17'	98	146	186	346	160	242	310	478	188	282	364	530	17'
18'	82	124	154	307	136	204	260	425	160	240	306	471	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. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/240 as noted in the table. Vibration has not been considered.
5. Total Deflection Resistance is limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 4.

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. For headers with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate pitch adjustment factor from the table above.
4. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
5. The tabulated resistances in the tables are for a single ply of 3-1/2" LSL.
6. Do not use a product where designated "-" without further analysis by a design professional.

PITCH ADJUSTMENT

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

LSL 1.55E Product Specifications & Design Values

SPECIFIED STRENGTHS & STIFFNESS (PSI)

Grade	Bending f_b[4]	Modulus of Elasticity E[5] (x 10^6)	Shear f_v	Compression	
				f_c (Parallel To Grain)	f_{cp} (Perpendicular To Grain)
1.55E	4360	1.55	760	3470	1595

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 average moisture content in lumber will not exceed a yearly average of 15% or exceed 19% at any time.
2. The specified strengths and stiffness are for standard load duration. Specified strengths shall be adjusted according to code. Stiffness shall not be adjusted.
3. The specified strengths and stiffness are for members supporting loads applied parallel to the wide face ("edge" or "beam" orientation).
4. The specified Bending strength, f_b, is tabulated for 12" depth. For depths other than 12", multiply f_b by $(12/depth)^{0.120}$. For depths less than 3-1/2", multiply f_b by 1.159.
5. Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{270wL^4}{Ebd^3} + \frac{28.8wL^2}{Ebd}$

Where: Δ = deflection (in), w = uniform load (plf), L = design span (ft), E = modulus of elasticity (from table), b = width (in), d = depth (in)

Equations for other conditions can be found in engineering references.

SECTION PROPERTIES AND FACTORED RESISTANCES

Depth	Weight (lb/ft)				Moment (lb-ft)				Shear (lb)				Moment of Inertia (in^4)			
	1-1/2"	1-3/4"	3-1/2"	5-1/4"	1-1/2"	1-3/4"	3-1/2"	5-1/4"	1-1/2"	1-3/4"	3-1/2"	5-1/4"	1-1/2"	1-3/4"	3-1/2"	5-1/4"
5-1/2"	2.7	3.1	6.2	9.3	2716	3168	6336	9505	3762	4389	8778	13167	21	24	49	73
7-1/4"	3.5	4.1	8.2	12.2	4565	5326	10651	15977	4959	5786	11571	17357	48	56	111	167
9-1/4"	4.5	5.2	10.4	15.6	7217	8419	16839	25258	6327	7382	14763	22145	99	115	231	346
9-1/2"	4.6	5.4	10.7	16.0	7588	8852	17705	26557	6498	7581	15162	22743	107	125	250	375
11-1/4"	5.4	6.3	12.6	18.9	10427	12165	24329	36494	7695	8978	17955	26933	178	208	415	623
11-7/8"	5.7	6.7	13.3	20.0	11543	13466	26933	40399	8123	9476	18953	28429	209	244	488	733
14"	6.8	7.9	15.7	23.5	15729	18351	36702	55053	9576	11172	22344	33516	343	400	800	1201
16"	7.7	9.0	17.9	26.9	20218	23587	47175	70762	10944	12768	25536	38304	512	597	1195	1792
18"	8.7	10.1	20.2	30.3	25229	29434	58868	88302	12312	14364	28728	43092	729	851	1701	2552

NOTES

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

FASTENERS:

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

FACTORED REACTION RESISTANCE (LBS)

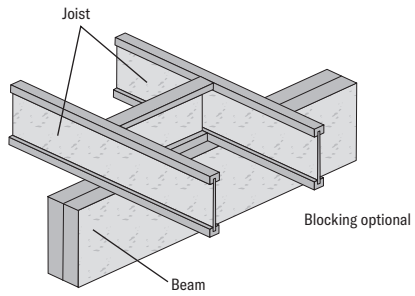
	Bearing Length																						
Width	**1-1/2"**	**2"**	**2-1/2"**	**3"**	**3-1/2"**	**4"**	**4-1/2"**	**5"**	**5-1/2"**	**6"**	**6-1/2"**	**7"**	**7-1/2"**	**8"**	**8-1/2"**	**9"**	**9-1/2"**	**10"**	**10-1/2"**	**11"**	**11-1/2"**	**12"**
1-1/2"	2870	3820	4780	5740	6690	7650	8610	9570	10520	11480	12440	13390	14350	15310	16260	17220	18180	19140	20090	21050	22010	22960
1-3/4"	3340	4460	5580	6690	7810	8930	10040	11160	12280	13390	14510	15630	16740	17860	18980	20090	21210	22330	23440	24560	25670	26790
3-1/2"	6690	8930	11160	13390	15630	17860	20090	22330	24560	26790	29020	31260	33490	35720	37960	40190	42420	44660	46890	49120	51350	53590
5-1/4"	10040	13390	16740	20090	23440	26790	30140	33490	36840	40190	43540	46890	50240	53590	56940	60290	63640	66990	70330	73680	77030	80380

NOTES:

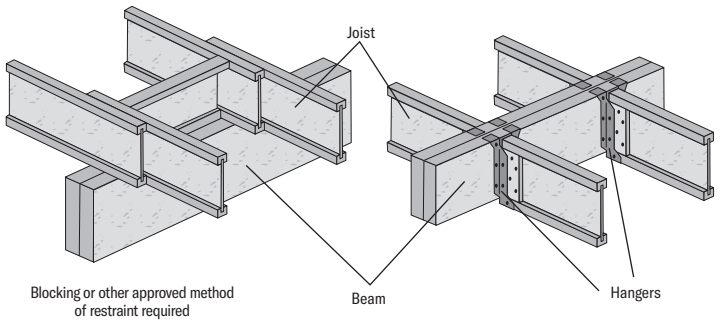
1. Tabulated values are based on the factored compression resistance, perpendicular-to-grain, of the LSL. This is suitable for beams bearing on steel or the end-grain of studs.
2. Verify that the support for the beam is structurally adequate to carry the reaction. The compressive resistance, parallel-to-grain,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

1.55E FLOOR BEAM QUICK REFERENCE DETAILS (see page 13 for tables)

CONTINUOUS FLOOR JOISTS



SIMPLE-SPAN FLOOR JOISTS



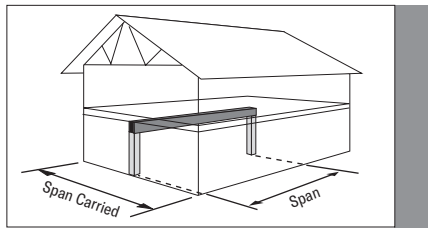
LSL 1.55E Floor Beam Quick Reference Tables

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 (SPECIFIED FLOOR LOADS: 40 PSF LIVE, 15 PSF DEAD)

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

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

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

NOTES:

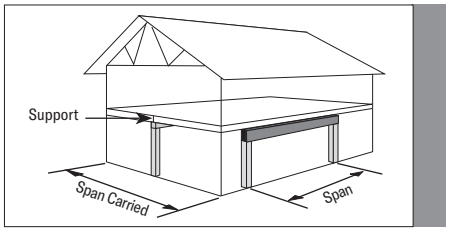
1. Use the Continuous Floor Joists table where the floor joists are continuous (multiple span) over the beam. Use the Simple-Span Floor Joists table where the floor joists frame into the side of or end on top of the beam.
2. Span is center-to-center of supports and is valid for simple and equal, continuous 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 resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance 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"**



SPECIFIED LOADS
ROOF: 20 PSF LIVE, 15 PSF DEAD
FLOOR: 40 PSF LIVE, 15 PSF DEAD

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

SPECIFIED LOADS
ROOF: 30 PSF SNOW, 15 PSF DEAD
FLOOR: 40 PSF LIVE, 15 PSF DEAD

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

NOTES:

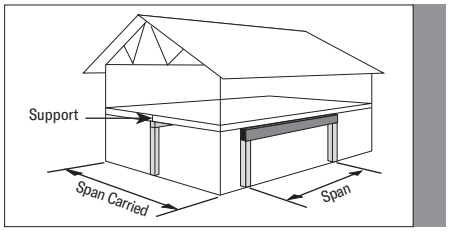
1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" are limited to 3" (two trimmers) on each end. The bearing length is based on the compressive resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 12 for additional information.
3. Deflections are limited to L/360 live/snow 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"**



SPECIFIED LOADS
ROOF: 40 PSF SNOW, 15 PSF DEAD
FLOOR: 40 PSF LIVE, 15 PSF DEAD

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

SPECIFIED LOADS
ROOF: 50 PSF SNOW, 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"	9-1/4"	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"
8'-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"
	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"
9'-6"	3-1/2"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	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"	11-7/8"	11-7/8"	11-7/8"
10'-0"	3-1/2"	11-7/8"	11-7/8"	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"
12'-0"	3-1/2"	14"	16"	16"	16"	16"	**16"**	**18"**	**18"**	**18"**	**18"**	**18"**
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"
14'-0"	3-1/2"	16"	18"	**18"**	**18"**	**18"**	-	-	-	-	-	-
	5-1/4"	14"	16"	16"	16"	16"	16"	18"	18"	18"	**18"**	**18"**
16'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	18"	18"	18"	18"	18"	-	-	-	-	-
16'-6"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	18"	18"	18"	-	-	-	-	-	-	-
18'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	-	-	-	-	-	-	-	-	-	-
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" are limited to 3" (two trimmers) on each end. The bearing length is based on the compressive resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 12 for additional information.
3. Deflections are limited to L/360 live/snow load and L/240 total load.
4. Loads include 100 plf for an exterior wall and assume a 2' maximum overhang on the roof and an interior support at mid-span of the floor joists.
5. Beam width can be either a single piece of LSL or built up from multiple plies that are nailed, bolted or connected with other approved fasteners. Refer to pages 34-35 for connection details.
6. Do not use where marked "-".

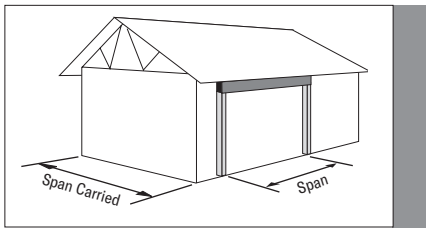
LSL 1.55E Roof Beam Quick Reference Tables

TO USE:

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

EXAMPLE: A beam with a 16'-6" span supports a 36'-0" span carried for a 30 psf Roof Snow Load.

SOLUTION: Using the correct table for the roof load with 36'-0" span carried, select either **3-1/2" x 18"** or **5-1/4" x 16"**



SPECIFIED LOADS
ROOF: 20 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"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/4"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
8'-0"	**3-1/2"**	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/4"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
9'-6"	**3-1/2"**	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
10'-0"	**3-1/2"**	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
12'-0"	**3-1/2"**	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
14'-0"	**3-1/2"**	11-1/4"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"
	5-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"
16'-0"	**3-1/2"**	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"
	5-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"
16'-6"	**3-1/2"**	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"
	5-1/4"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"
18'-0"	**3-1/2"**	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"
18'-6"	**3-1/2"**	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	-
	5-1/4"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"
20'-0"	**3-1/2"**	16"	18"	18"	18"	18"	18"	-	-	-	-	-
	5-1/4"	14"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
22'-0"	**3-1/2"**	18"	18"	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	18"	18"	18"	18"	18"	18"	-	-
24'-0"	**3-1/2"**	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	18"	18"	18"	-	-	-	-	-	-	-

SPECIFIED LOADS
ROOF: 30 PSF SNOW, 15 PSF DEAD

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

NOTES:

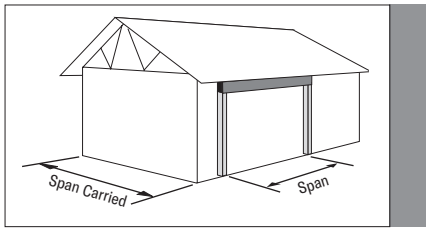
1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" are limited to 3" (two trimmers) on each end. The bearing length is based on the compressive resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 12 for additional information.
3. Deflections are limited to L/360 live/snow 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 36'-0" span carried for a 50 psf Roof Snow Load.
SOLUTION: Using the correct table for the roof load with 36'-0" span carried, select a **5-1/4" x 18"**
NOTE: A 3-1/2" beam does not work.



SPECIFIED LOADS
ROOF: 40 PSF SNOW, 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"	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"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
9'-6"	3-1/2"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	9-1/2"	11-1/4"
10'-0"	3-1/2"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
12'-0"	3-1/2"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"
	5-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"	14"	14"
14'-0"	3-1/2"	14"	14"	14"	16"	16"	16"	16"	16"	16"	18"	18"
	5-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"
16'-0"	3-1/2"	16"	16"	16"	18"	18"	18"	18"	18"	-	-	-
	5-1/4"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"
16'-6"	3-1/2"	16"	18"	18"	18"	18"	18"	-	-	-	-	-
	5-1/4"	14"	14"	16"	16"	16"	16"	16"	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'-6"	3-1/2"	18"	18"	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	18"	18"	18"	18"	18"	-	-	-
20'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	18"	18"	18"	-	-	-	-	-	-	-
22'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	-	-	-	-	-	-	-	-	-	-
24'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	-	-	-	-	-	-	-	-	-	-	-

SPECIFIED LOADS
ROOF: 50 PSF SNOW, 15 PSF DEAD

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

NOTES:

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

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

TO USE:

1. Select the span required.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3" width or by 3 to verify a 4-1/2" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit.
6. Select a product that satisfies all three conditions.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 180 plf

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 480) + (1.25 x 180) = 945 plf
Unfactored Total Load = 480 + 180 = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 945/2 = 473 plf
Unfactored Total Load per ply = 660/2 = 330 plf
Unfactored Live Load per ply = 480/2 = 240 plf

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

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 945/3 = 315 plf
Unfactored Total Load per ply = 660/3 = 220 plf
Unfactored Live Load per ply = 480/3 = 160 plf

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

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	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/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	253	338	504	865	536	714	1068	1456	998	1331	1992	2019	1066	1421		2073	1592	2123		2455	5'
6'	152	202	301	600	328	438	653	1010	629	839	1253	1598	674	898	1343	1680	1032	1376		2045	6'
7'	97	130	193	440	214	286	425	740	418	558	832	1172	449	599	894	1233	700	934	1395	1695	7'
8'	66	88	130	336	147	196	291	566	291	388	577	896	313	417	621	942	494	659	983	1296	8'
9'	47	62	91	264	105	140	206	446	210	280	415	707	226	301	447	743	360	480	715	1023	9'
9'-6"	40	53	77	237	90	120	176	400	180	240	356	634	194	259	384	666	310	414	616	917	9'-6"
10'	34	46	66	213	77	103	151	360	156	208	307	571	168	224	331	601	270	360	534	827	10'
11'	-	-	-	-	58	78	114	297	119	158	233	471	128	171	252	495	207	276	408	682	11'
12'	-	-	-	-	45	60	87	249	92	123	180	395	100	133	195	415	162	216	318	572	12'
13'	-	-	-	-	36	48	68	211	73	98	142	336	79	105	154	353	129	172	252	486	13'
14'	-	-	-	-	-	-	-	-	59	79	114	289	64	85	123	304	104	139	203	418	14'
15'	-	-	-	-	-	-	-	-	48	64	92	251	52	69	100	264	85	114	165	363	15'
16'	-	-	-	-	-	-	-	-	40	53	75	219	43	57	82	231	71	94	136	319	16'
16'-6"	-	-	-	-	-	-	-	-	36	48	68	206	39	52	74	217	65	86	124	299	16'-6"
17'	-	-	-	-	-	-	-	-	33	44	62	194	36	48	67	204	59	79	113	281	17'
18'	-	-	-	-	-	-	-	-	-	-	-	-	30	40	56	181	50	67	95	250	18'
18'-6"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	62	87	236	18'-6"
19'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	57	80	224	19'
20'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	49	68	201	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	1800	2400		2592	2573			3055				3331				3330	5'
6'	1177	1569		2158	1730	2306		2545	2321			2817				2816	6'
7'	804	1072	1602	1849	1207	1609		2180	1650	2201		2440	2146			2439	7'
8'	570	760	1134	1435	869	1159	1732	1906	1207	1609		2152	1592	2123		2150	8'
9'	417	556	828	1132	644	858	1281	1545	904	1206	1801	1924	1207	1609		1923	9'
9'-6"	360	480	714	1016	559	745	1111	1385	789	1052	1571	1782	1058	1411		1826	9'-6"
10'	313	417	620	916	488	651	970	1249	692	923	1377	1607	933	1244		1739	10'
11'	240	321	475	756	378	504	749	1031	540	720	1073	1327	733	978	1458	1586	11'
12'	188	251	371	634	298	398	590	865	428	571	849	1113	585	781	1162	1390	12'
13'	150	200	295	539	239	319	471	736	345	460	683	947	474	632	939	1183	13'
14'	122	162	238	464	194	259	382	633	282	376	556	815	388	518	768	1018	14'
15'	100	133	194	403	160	213	313	550	232	310	457	709	322	429	635	886	15'
16'	83	110	160	353	133	177	259	483	194	259	381	622	270	360	531	777	16'
16'-6"	76	101	146	332	122	162	237	453	178	237	348	584	248	330	487	730	16'-6"
17'	69	92	133	312	112	149	217	427	163	218	319	550	228	304	447	687	17'
18'	59	78	112	277	95	126	183	379	139	185	270	489	194	259	380	612	18'
18'-6"	54	72	103	262	87	117	168	359	128	171	249	463	180	240	351	578	18'-6"
19'	50	67	94	248	81	108	155	340	119	159	231	438	167	222	325	548	19'
20'	43	57	80	223	70	93	133	306	103	137	198	394	144	192	279	493	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. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/480 as noted in the table. Vibration has not been considered.
5. Total Deflection Resistance is limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

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

* Deflections rounded to the nearest 1/16".

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
4. For 1-1/2" thick LSL, depths of 14" 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 tabulated resistances in the tables are for a single ply of 1-1/2" LSL. For a 3" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 4-1/2" wide member, divide the design loads by 3.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

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

TO USE:

1. Select the span required.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3-1/2" width or by 3 to verify a 5-1/4" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit.
6. Select a product that satisfies all three conditions.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 180 plf

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 480) + (1.25 x 180) = 945 plf
Unfactored Total Load = 480 + 180 = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 945/2 = 473 plf
Unfactored Total Load per ply = 660/2 = 330 plf
Unfactored Live Load per ply = 480/2 = 240 plf
Use 2 plies 1-3/4" x 16"

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 945/3 = 315 plf
Unfactored Total Load per ply = 660/3 = 220 plf
Unfactored Live Load per ply = 480/3 = 160 plf
Use 3 plies 1-3/4" x 14"

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	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/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	296	394	588	1009	625	833	1246	1699	1164	1553	2324	2355	1243	1658		2419	1857	2476		2864	5'
6'	177	236	351	700	383	511	762	1178	734	978	1462	1864	786	1048	1567	1960	1204	1605		2386	6'
7'	114	152	225	513	250	333	496	864	488	651	971	1368	524	699	1043	1438	817	1089	1628	1978	7'
8'	77	103	152	392	171	229	339	660	339	453	674	1045	365	487	725	1099	576	769	1147	1512	8'
9'	55	73	107	309	122	163	241	520	245	326	484	825	264	352	522	867	420	560	834	1193	9'
9'-6"	47	62	90	276	105	140	205	467	210	280	415	739	226	302	448	778	362	483	719	1070	9'-6"
10'	40	53	77	249	90	120	177	420	182	242	358	667	196	261	387	701	315	420	623	965	10'
11'	30	40	57	205	68	91	133	347	138	185	272	550	149	199	294	578	241	322	476	796	11'
12'	-	-	-	-	53	71	102	290	108	144	210	461	116	155	228	485	189	252	371	667	12'
13'	-	-	-	-	42	56	80	247	85	114	166	392	92	123	179	412	150	200	294	567	13'
14'	-	-	-	-	33	45	63	212	69	92	133	337	74	99	144	354	121	162	237	488	14'
15'	-	-	-	-	-	-	-	-	56	75	107	292	61	81	116	308	99	133	193	424	15'
16'	-	-	-	-	-	-	-	-	46	62	88	256	50	67	95	269	82	110	159	372	16'
16'-6"	-	-	-	-	-	-	-	-	42	57	80	240	46	61	87	253	75	101	145	349	16'-6"
17'	-	-	-	-	-	-	-	-	39	52	73	226	42	56	79	238	69	92	132	328	17'
18'	-	-	-	-	-	-	-	-	33	44	60	201	35	47	66	211	58	78	111	292	18'
18'-6"	-	-	-	-	-	-	-	-	30	40	55	190	33	44	60	200	54	72	102	276	18'-6"
19'	-	-	-	-	-	-	-	-	-	-	-	-	30	40	55	189	50	67	93	261	19'
20'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	57	79	235	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	2100	2800		3024	3002			3565				3886				3885	5'
6'	1373	1831		2518	2018	2691		2969	2708			3286				3285	6'
7'	938	1250	1869	2157	1408	1877		2543	1925	2567		2847	2504			2845	7'
8'	665	886	1323	1674	1014	1352	2021	2224	1408	1877		2510	1857	2476		2509	8'
9'	486	648	966	1321	751	1001	1494	1802	1055	1407	2101	2245	1408	1877		2243	9'
9'-6"	420	560	834	1185	652	870	1297	1616	921	1228	1832	2079	1235	1647		2131	9'-6"
10'	365	487	724	1069	570	760	1131	1458	808	1077	1606	1875	1088	1451		2029	10'
11'	281	374	555	882	441	588	874	1203	630	840	1251	1548	855	1141	1701	1851	11'
12'	220	293	433	739	348	464	688	1009	500	667	991	1299	683	911	1356	1622	12'
13'	175	234	344	629	279	372	550	858	403	537	796	1105	553	738	1096	1380	13'
14'	142	189	277	541	226	302	445	739	329	438	648	951	453	605	897	1188	14'
15'	116	155	226	470	186	249	365	642	271	362	534	827	376	501	741	1033	15'
16'	96	129	187	412	155	207	302	563	226	302	444	725	315	420	619	907	16'
16'-6"	88	118	170	387	142	189	276	529	208	277	406	681	289	385	568	852	16'-6"
17'	81	108	155	364	130	174	253	498	191	255	373	641	266	355	522	802	17'
18'	68	91	130	324	111	148	213	443	162	216	316	571	226	302	443	714	18'
18'-6"	63	84	120	306	102	136	196	419	150	200	291	540	210	280	409	675	18'-6"
19'	58	78	110	290	94	126	181	396	139	185	269	511	194	259	379	639	19'
20'	50	67	94	261	81	109	155	357	120	160	231	460	168	224	326	576	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. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/480 as noted in the table. Vibration has not been considered.
5. Total Deflection Resistance is limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

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

* Deflections rounded to the nearest 1/16".

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
4. For 1-3/4" thick LSL, 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 tabulated resistances in the tables are for a single ply of 1-3/4" LSL. For a 3-1/2" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 5-1/4" wide member, divide the design loads by 3.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

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

TO USE:

1. Select the span required. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof pitch adjustment factor from the table at the bottom of this page.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3" width or by 3 to verify a 4-1/2" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit. For a live load deflection limit of L/480, compare the unfactored design live load to the L/480 Live Load Deflection Resistance from the Uniform Floor Load Resistance Tables.
6. Select a product that satisfies all three conditions.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 8' 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 specified loads: Snow Load = 720 plf; Dead Load = 400 plf

CALCULATE BEAM SPAN: 8' x 1.054 = 8.43' ⟶ **Use 9'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 720) + (1.25 x 400) = 1580 plf
Unfactored Total Load = 0.9 x 720 + 400 = 1048 plf
Unfactored Snow Load = 0.9 x 720 = 648 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 1580/2 = 790 plf
Unfactored Total Load per ply = 1048/2 = 524 plf
Unfactored Live Load per ply = 648/2 = 324 plf
Use 2 plies 1-1/2" x 11-1/4"

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 1580/3 = 527 plf
Unfactored Total Load per ply = 1048/3 = 350 plf
Unfactored Live Load per ply = 648/3 = 216 plf
Use 3 plies 1-1/2" x 9-1/4"

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'	338	507	673	865	714	1072	1425	1456	1331	1997		2019	1421			2073	2123			2455	5'
6'	202	304	403	600	438	657	872	1010	839	1258		1598	898	1348		1680	1376			2045	6'
7'	130	195	258	440	286	429	568	740	558	837	1112	1172	599	899	1194	1233	934	1401		1695	7'
8'	88	133	174	336	196	294	389	566	388	582	772	896	417	626	830	942	659	988		1296	8'
9'	62	94	123	264	140	210	277	446	280	420	555	707	301	452	598	743	480	720	955	1023	9'
9'-6"	53	80	104	237	120	180	236	400	240	360	476	634	259	389	513	666	414	621	823	917	9'-6"
10'	46	69	89	213	103	155	203	360	208	312	411	571	224	336	444	601	360	540	714	827	10'
11'	34	52	67	176	78	117	153	297	158	238	312	471	171	256	337	495	276	414	546	682	11'
12'	-	-	-	-	60	91	118	249	123	185	242	395	133	200	262	415	216	324	426	572	12'
13'	-	-	-	-	48	72	92	211	98	147	191	336	105	158	207	353	172	258	338	486	13'
14'	-	-	-	-	38	58	73	181	79	118	153	289	85	128	166	304	139	209	273	418	14'
15'	-	-	-	-	31	47	59	157	64	97	124	251	69	104	135	264	114	171	222	363	15'
16'	-	-	-	-	-	-	-	-	53	80	102	219	57	86	111	231	94	142	183	319	16'
16'-6"	-	-	-	-	-	-	-	-	48	73	93	206	52	79	101	217	86	130	167	299	16'-6"
17'	-	-	-	-	-	-	-	-	44	67	85	194	48	72	92	204	79	119	153	281	17'
18'	-	-	-	-	-	-	-	-	37	56	71	172	40	61	77	181	67	100	128	250	18'
18'-6"	-	-	-	-	-	-	-	-	34	52	65	163	37	56	70	171	62	93	118	236	18'-6"
19'	-	-	-	-	-	-	-	-	32	48	59	154	34	52	65	162	57	86	109	224	19'
20'	-	-	-	-	-	-	-	-	-	-	-	-	30	45	55	146	49	74	93	201	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'	2400			2592				3055				3331				3330	5'
6'	1569			2158	2306			2545				2817				2816	6'
7'	1072	1608		1849	1609			2180	2201			2440				2439	7'
8'	760	1140		1435	1159	1739		1906	1609			2152	2123			2150	8'
9'	556	834	1106	1132	858	1288		1545	1206	1809		1924	1609			1923	9'
9'-6"	480	720	955	1016	745	1118		1385	1052	1579		1782	1411			1826	9'-6"
10'	417	626	829	916	651	977		1249	923	1385		1607	1244			1739	10'
11'	321	481	636	756	504	756	1002	1031	720	1081		1327	978	1467		1586	11'
12'	251	377	497	634	398	597	789	865	571	857		1113	781	1171		1390	12'
13'	200	301	395	539	319	478	631	736	460	691	913	947	632	948		1183	13'
14'	162	244	319	464	259	389	511	633	376	564	744	815	518	777		1018	14'
15'	133	200	261	403	213	320	420	550	310	465	613	709	429	644	850	886	15'
16'	110	166	215	353	177	266	348	483	259	389	510	622	360	540	711	777	16'
16'-6"	101	152	196	332	162	244	318	453	237	356	467	584	330	496	652	730	16'-6"
17'	92	139	180	312	149	224	292	427	218	327	429	550	304	456	599	687	17'
18'	78	118	151	277	126	190	246	379	185	278	363	489	259	389	509	612	18'
18'-6"	72	109	139	262	117	175	227	359	171	257	335	463	240	360	471	578	18'-6"
19'	67	100	128	248	108	162	210	340	159	239	310	438	222	334	436	548	19'
20'	57	86	109	223	93	140	180	306	137	206	267	394	192	288	376	493	20'

PITCH ADJUSTMENT

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

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/240 as noted in the table.
5. Total Deflection Resistance is limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate pitch adjustment factor from the table above.
4. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
5. For 1-1/2" thick LSL, depths of 14" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
6. The tabulated resistances in the tables are for a single ply of 1-1/2" LSL. For a 3" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 4-1/2" wide member, divide the design loads by 3.
7. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
8. Do not use a product where designated "-" without further analysis by a design professional.

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

TO USE:

1. Select the span required. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof pitch adjustment factor from the table at the bottom of this page.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3-1/2" width or by 3 to verify a 5-1/4" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit. For a live load deflection limit of L/480, compare the unfactored design live load to the L/480 Live Load Deflection Resistance from the Uniform Floor Load Resistance Tables.
6. Select a product that satisfies all three conditions.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 8' horizontal 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 specified loads: Snow Load = 720 plf; Dead Load = 400 plf

CALCULATE BEAM SPAN: 8' x 1.054 = 8.43' ⟶ **Use 9'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 720) + (1.25 x 400) = 1580 plf
Unfactored Total Load = 0.9 x 720 + 400 = 1048 plf
Unfactored Snow Load = 0.9 x 720 = 648 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 1580/2 = 790 plf
Unfactored Total Load per ply = 1048/2 = 524 plf
Unfactored Live Load per ply = 648/2 = 324 plf
Use 2 plies 1-3/4" x 9-1/4"

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 1580/3 = 527 plf
Unfactored Total Load per ply = 1048/3 = 350 plf
Unfactored Live Load per ply = 648/3 = 216 plf
Use 3 plies 1-3/4" x 9-1/4"

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'	394	592	786	1009	833	1250	1663	1699	1553	2329		2355	1658			2419	2476			2864	5'
6'	236	355	470	700	511	766	1018	1178	978	1468		1864	1048	1573		1960	1605			2386	6'
7'	152	228	301	513	333	500	663	864	651	977	1297	1368	699	1049	1393	1438	1089	1634		1978	7'
8'	103	155	203	392	229	343	454	660	453	679	900	1045	487	731	969	1099	769	1153		1512	8'
9'	73	110	143	309	163	245	323	520	326	490	648	825	352	528	698	867	560	840	1114	1193	9'
9'-6"	62	94	122	276	140	210	276	467	280	421	556	739	302	453	599	778	483	725	960	1070	9'-6"
10'	53	80	104	249	120	181	237	420	242	364	480	667	261	392	518	701	420	630	833	965	10'
11'	40	61	78	206	91	137	179	347	185	277	364	550	199	299	394	578	322	483	637	796	11'
12'	31	47	59	172	71	106	137	290	144	216	283	461	155	233	305	485	252	378	497	667	12'
13'	-	-	-	-	56	84	108	247	114	171	223	392	123	185	241	412	200	301	395	567	13'
14'	-	-	-	-	45	67	86	212	92	138	179	337	99	149	193	354	162	243	318	488	14'
15'	-	-	-	-	36	55	69	184	75	113	145	292	81	122	157	308	133	199	259	424	15'
16'	-	-	-	-	30	45	56	161	62	93	119	256	67	101	129	269	110	165	214	372	16'
16'-6"	-	-	-	-	-	-	-	-	57	85	108	240	61	92	117	253	101	151	195	349	16'-6"
17'	-	-	-	-	-	-	-	-	52	78	99	226	56	84	107	238	92	139	178	328	17'
18'	-	-	-	-	-	-	-	-	44	66	83	201	47	71	90	211	78	117	150	292	18'
18'-6"	-	-	-	-	-	-	-	-	40	61	76	190	44	66	82	200	72	108	138	276	18'-6"
19'	-	-	-	-	-	-	-	-	37	56	69	180	40	61	76	189	67	100	127	261	19'
20'	-	-	-	-	-	-	-	-	32	48	59	161	35	52	64	170	57	86	108	235	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'	2800			3024				3565				3886				3885	5'
6'	1831			2518	2691			2969				3286				3285	6'
7'	1250	1876		2157	1877			2543	2567			2847				2845	7'
8'	886	1330		1674	1352	2029		2224	1877			2510	2476			2509	8'
9'	648	973	1290	1321	1001	1502		1802	1407	2110		2245	1877			2243	9'
9'-6"	560	840	1114	1185	870	1305		1616	1228	1842		2079	1647			2131	9'-6"
10'	487	731	967	1069	760	1140		1458	1077	1616		1875	1451	2177		2029	10'
11'	374	562	742	882	588	883	1169	1203	840	1261		1548	1141	1711		1851	11'
12'	293	440	580	739	464	696	920	1009	667	1000		1299	911	1367		1622	12'
13'	234	351	461	629	372	558	736	858	537	806	1065	1105	738	1107		1380	13'
14'	189	284	372	541	302	453	597	739	438	658	868	951	605	907		1188	14'
15'	155	233	304	470	249	373	490	642	362	543	715	827	501	752	992	1033	15'
16'	129	193	251	412	207	311	406	563	302	453	595	725	420	630	829	907	16'
16'-6"	118	177	229	387	189	284	371	529	277	416	545	681	385	578	761	852	16'-6"
17'	108	162	210	364	174	261	340	498	255	382	500	641	355	532	699	802	17'
18'	91	137	176	324	148	222	287	443	216	325	424	571	302	453	594	714	18'
18'-6"	84	127	162	306	136	205	265	419	200	300	391	540	280	420	549	675	18'-6"
19'	78	117	150	290	126	189	245	396	185	278	362	511	259	389	509	639	19'
20'	67	101	128	261	109	163	210	357	160	240	311	460	224	337	438	576	20'

PITCH ADJUSTMENT

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

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/240 as noted in the table.
5. Total Deflection Resistance is limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 12.

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate pitch adjustment factor from the table above.
4. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
5. For 1-3/4" thick LSL, depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
6. The tabulated resistances in the tables are for a single ply of 1-3/4" LSL. For a 3-1/2" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 5-1/4" wide member, divide the design loads by 3.
7. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
8. Do not use a product where designated "-" without further analysis by a design professional.

LSL 1.75E Product Specifications & Design Values

SPECIFIED STRENGTHS & STIFFNESS (PSI)

Grade	Bending f_b[4]	Modulus of Elasticity E[5] (x 10^6)	Shear f_v	Compression	
				f_c (Parallel To Grain)	f_{cp} (Perpendicular To Grain)
1.75E	4620	1.75	760	3910	1730

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 average moisture content in lumber will not exceed a yearly average of 15% or exceed 19% at any time.
2. The specified strengths and stiffness are for standard load duration. Specified strengths shall be adjusted according to code. Stiffness shall not be adjusted.
3. The specified strengths and stiffness are for members supporting loads applied parallel to the wide face ("edge" or "beam" orientation).
4. The specified Bending strength, f_b, is tabulated for 12" depth. For depths other than 12", multiply f_b by $(12/depth)^{0.120}$. For depths less than 3-1/2", multiply f_b by 1.159.
5. Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{270wL^4}{Ebd^3} + \frac{28.8wL^2}{Ebd}$

Where: Δ = deflection (in), w = uniform load (plf), L = design span (ft), E = modulus of elasticity (from table), b = width (in), d = depth (in)

Equations for other conditions can be found in engineering references.

SECTION PROPERTIES AND FACTORED RESISTANCES

Depth	Weight (lb/ft)				Moment (lb-ft)				Shear (lb)				Moment of Inertia (in^4)			
	1-1/2"	1-3/4"	3-1/2"	5-1/4"	1-1/2"	1-3/4"	3-1/2"	5-1/4"	1-1/2"	1-3/4"	3-1/2"	5-1/4"	1-1/2"	1-3/4"	3-1/2"	5-1/4"
5-1/2"	2.8	3.3	6.5	9.7	2878	3357	6714	10072	3762	4389	8778	13167	21	24	49	73
7-1/4"	3.7	4.3	8.5	12.7	4837	5643	11286	16930	4959	5786	11571	17357	48	56	111	167
9-1/4"	4.7	5.4	10.8	16.2	7647	8922	17843	26765	6327	7382	14763	22145	99	115	231	346
9-1/2"	4.8	5.6	11.1	16.7	8040	9380	18760	28141	6498	7581	15162	22743	107	125	250	375
11-1/4"	5.7	6.6	13.2	19.7	11049	12890	25780	38670	7695	8978	17955	26933	178	208	415	623
11-7/8"	6.0	7.0	13.9	20.8	12231	14269	28539	42808	8123	9476	18953	28429	209	244	488	733
14"	7.0	8.2	16.4	24.5	16667	19445	38890	58336	9576	11172	22344	33516	343	400	800	1201
16"	8.0	9.4	18.7	28.0	21424	24994	49988	74982	10944	12768	25536	38304	512	597	1195	1792
18"	9.0	10.5	21.0	31.5	26734	31189	62378	93568	12312	14364	28728	43092	729	851	1701	2552

NOTES

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

FASTENERS:

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

FACTORED REACTION RESISTANCE (LBS)

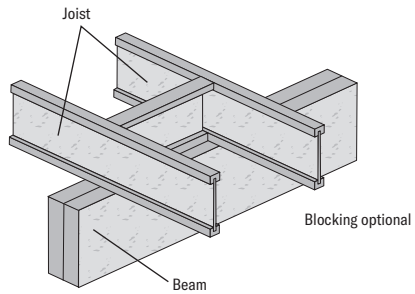
	Bearing Length																					
Width	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"	7"	7-1/2"	8"	8-1/2"	9"	9-1/2"	10"	10-1/2"	11"	11-1/2"	12"
1-1/2"	3110	4150	5190	6220	7260	8300	9340	10380	11410	12450	13490	14530	15570	16600	17640	18680	19720	20760	21790	22830	23870	24910
1-3/4"	3630	4840	6050	7260	8470	9680	10890	12110	13320	14530	15740	16950	18160	19370	20580	21790	23000	24220	25430	26640	27850	29060
3-1/2"	7260	9680	12110	14530	16950	19370	21790	24220	26640	29060	31480	33900	36330	38750	41170	43590	46010	48440	50860	53280	55700	58120
5-1/4"	10890	14530	18160	21790	25430	29060	32690	36330	39960	43590	47220	50860	54490	58120	61760	65390	69020	72660	76290	79920	83550	87190

NOTES:

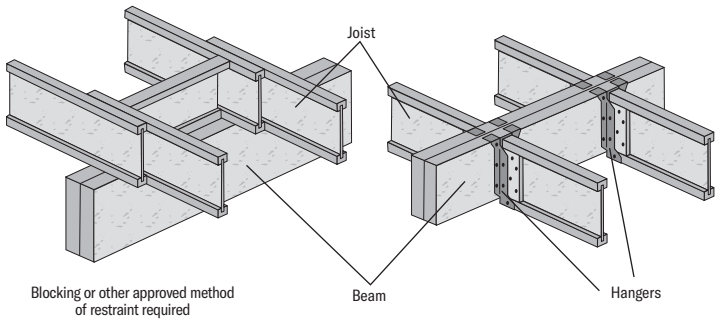
1. Tabulated values are based on the factored compression resistance, perpendicular-to-grain, of the LSL. This is suitable for beams bearing on steel or the end-grain of studs.
2. Verify that the support for the beam is structurally adequate to carry the reaction. The compressive resistance, parallel-to-grain,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

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

CONTINUOUS FLOOR JOISTS



SIMPLE-SPAN FLOOR JOISTS



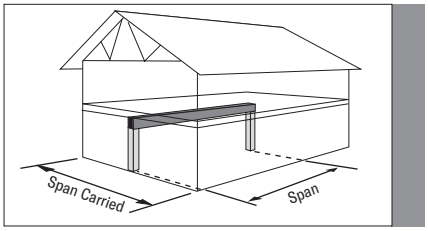
LSL 1.75E Floor Beam Quick Reference Tables

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.
3. Select the span carried by the beam across the top of the table.
4. Read the beam size or choice of beam sizes from the table.

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

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



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

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

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"	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"
8'-0"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"
10'-0"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
	5-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
12'-0"	3-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
14'-0"	3-1/2"	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"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"
16'-0"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	16"	16"	**18"**
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	14"	14"
18'-0"	3-1/2"	16"	16"	16"	18"	18"	18"	18"	18"	**18"**	**18"**	**18"**
	5-1/4"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	16"
20'-0"	3-1/2"	18"	18"	18"	18"	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"
22'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	18"	18"	18"	18"	18"	18"	18"	-	-	-
24'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	18"	18"	-	-	-	-	-	-	-	-

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 resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance 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 "-".

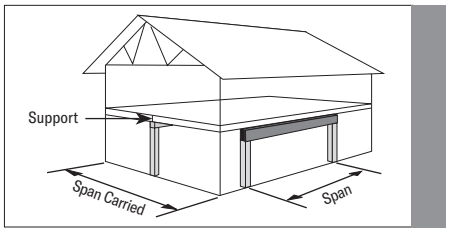
LSL 1.75E Combined Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam.
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"**



SPECIFIED LOADS
ROOF: 20 PSF LIVE, 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"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/4"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
8'-0"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	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"	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"
	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"
10'-0"	3-1/2"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	9-1/2"	11-1/4"	11-1/4"
12'-0"	3-1/2"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	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"
14'-0"	3-1/2"	14"	14"	14"	14"	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"
16'-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'-6"	3-1/2"	16"	16"	16"	18"	18"	18"	18"	18"	-	-	-
	5-1/4"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"
18'-0"	3-1/2"	18"	18"	18"	18"	-	-	-	-	-	-	-
	5-1/4"	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"	18"	18"	18"	18"	18"	18"	-
20'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	18"	18"	18"	18"	18"	-	-	-	-	-
22'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	-	-	-	-	-	-	-	-	-	-
24'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	-	-	-	-	-	-	-	-	-	-	-

SPECIFIED LOADS
ROOF: 30 PSF SNOW, 15 PSF DEAD
FLOOR: 40 PSF LIVE, 15 PSF DEAD

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

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" are limited to 3" (two trimmers) on each end. The bearing length is based on the compressive resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 22 for additional information.
3. Deflections are limited to L/360 live/snow 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 "-".

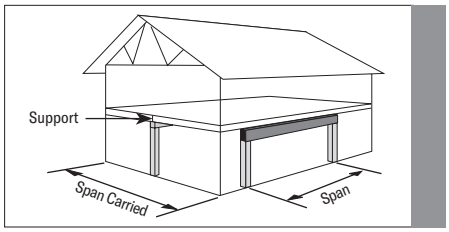
LSL 1.75E Combined Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam.
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 11-1/4"** or **5-1/4" x 11-1/4."**



SPECIFIED LOADS
ROOF: 40 PSF SNOW, 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"
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"	9-1/2"	11-1/4"	11-1/4"	11-1/4"
	5-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
9'-6"	3-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	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"
10'-0"	3-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
12'-0"	3-1/2"	14"	14"	14"	14"	14"	14"	16"	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'-0"	3-1/2"	16"	16"	16"	16"	16"	**18"**	**18"**	**18"**	**18"**	-	-
	5-1/4"	14"	14"	14"	14"	14"	14"	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"
16'-6"	3-1/2"	18"	18"	18"	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	-
18'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	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"	-	-	-	-	-	-	-	-	-	-	-

SPECIFIED LOADS
ROOF: 50 PSF SNOW, 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"	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"	9-1/2"	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'-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"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
10'-0"	3-1/2"	11-1/4"	11-1/4"	11-1/4"	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"	11-7/8"	11-7/8"
12'-0"	3-1/2"	14"	14"	14"	14"	16"	16"	**16"**	**16"**	**16"**	**18"**	**18"**
	5-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"
14'-0"	3-1/2"	16"	16"	16"	18"	**18"**	**18"**	**18"**	-	-	-	-
	5-1/4"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"	18"
16'-0"	3-1/2"	18"	18"	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	18"	18"	18"	18"	**18"**	-	-
16'-6"	3-1/2"	18"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	18"	18"	18"	18"	18"	18"	-	-	-
18'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	18"	18"	18"	-	-	-	-	-	-	-
18'-6"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	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:

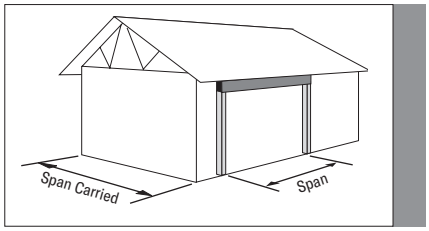
1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" are limited to 3" (two trimmers) on each end. The bearing length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

LSL 1.75E Roof Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam.
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 36'-0" span carried for a 30 psf Roof Snow Load.
SOLUTION: Using the correct table for the roof load with 36'-0" span carried, select either **3-1/2" x 16"** or **5-1/4" x 14"**



SPECIFIED LOADS
ROOF: 20 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"	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"
8'-0"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"
	5-1/4"	5-1/2"	5-1/2"	5-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
9'-6"	3-1/2"	7-1/4"	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"	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"	9-1/4"
	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"
12'-0"	3-1/2"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	9-1/2"
14'-0"	3-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"
	5-1/4"	9-1/4"	9-1/2"	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"
16'-0"	3-1/2"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"
	5-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"
16'-6"	3-1/2"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"
	5-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"
18'-0"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"
18'-6"	3-1/2"	14"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"
20'-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"
22'-0"	3-1/2"	18"	18"	18"	18"	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"
24'-0"	3-1/2"	18"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	18"	18"	18"	18"	18"	18"	-	-	-	-

SPECIFIED LOADS
ROOF: 30 PSF SNOW, 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"
	5-1/4"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"	5-1/2"
8'-0"	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
9'-6"	3-1/2"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	9-1/2"
	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"
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"	9-1/2"	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"
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"
	5-1/4"	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"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	14"
	5-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"	14"	14"
16'-0"	3-1/2"	14"	14"	14"	14"	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"
16'-6"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	16"	18"	18"
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"
18'-0"	3-1/2"	16"	16"	16"	16"	18"	18"	18"	18"	18"	18"	18"
	5-1/4"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"
18'-6"	3-1/2"	16"	16"	16"	18"	18"	18"	18"	18"	18"	-	-
	5-1/4"	14"	14"	14"	16"	16"	16"	16"	16"	16"	16"	16"
20'-0"	3-1/2"	18"	18"	18"	18"	18"	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"	18"
22'-0"	3-1/2"	18"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	18"	18"	18"	18"	18"	-	-	-	-
24'-0"	3-1/2"	-	-	-	-	-	-	-	-	-	-	-
	5-1/4"	18"	18"	18"	-	-	-	-	-	-	-	-

NOTES:

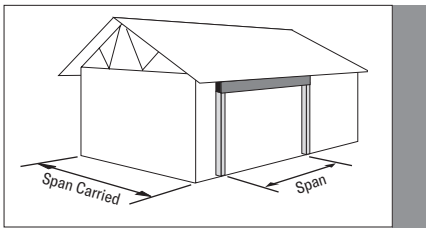
1. Span is center-to-center of supports and is valid for simple beam spans only.
2. End supports require 3" bearing except 4-1/2" is required where **bold**. The end supports for the standard garage door spans of 9'-6", 16'-6" and 18'-6" are limited to 3" (two trimmers) on each end. The bearing length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

LSL 1.75E Roof Beam Quick Reference Tables

TO USE:

1. Select the correct table for the roof loads needed.
2. Choose the required center-to-center span for the beam.
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 36'-0" span carried for a 50 psf Roof Snow Load.
SOLUTION: Using the correct table for the roof load with 36'-0" span carried, select a **5-1/4" x 18"**
NOTE: A 3-1/2" beam does not work.



SPECIFIED LOADS
ROOF: 40 PSF SNOW, 15 PSF DEAD

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

SPECIFIED LOADS
ROOF: 50 PSF SNOW, 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"	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"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"
9'-6"	3-1/2"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"
10'-0"	3-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	11-7/8"	11-7/8"
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
12'-0"	3-1/2"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	16"	16"
	5-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"
14'-0"	3-1/2"	14"	14"	16"	16"	16"	16"	16"	16"	18"	18"	**18"**
	5-1/4"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"
16'-0"	3-1/2"	16"	16"	18"	18"	18"	18"	18"	-	-	-	-
	5-1/4"	14"	14"	14"	16"	16"	16"	16"	16"	16"	18"	18"
16'-6"	3-1/2"	16"	18"	18"	18"	18"	18"	-	-	-	-	-
	5-1/4"	14"	16"	16"	16"	16"	16"	16"	18"	18"	18"	18"
18'-0"	3-1/2"	18"	18"	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	16"	18"	18"	18"	18"	18"	18"	-	-
18'-6"	3-1/2"	18"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	16"	16"	18"	18"	18"	18"	18"	-	-	-	-
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" are limited to 3" (two trimmers) on each end. The bearing length is based on the compressive resistance, perpendicular-to-grain, of the LSL. See the Factored Reaction Resistance table on page 22 for additional information.
3. Deflections are limited to L/360 live/snow load and L/240 total load.
4. Loads 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 Uniform Floor Load (PLF) Tables: 1-1/2"

TO USE:

1. Select the span required.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3" width or by 3 to verify a 4-1/2" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit.
6. Select a product that satisfies all three conditions.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 180 plf

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 480) + (1.25 x 180) = 945 plf
Unfactored Total Load = 480 + 180 = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 945/2 = 473 plf
Unfactored Total Load per ply = 660/2 = 330 plf
Unfactored Live Load per ply = 480/2 = 240 plf

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

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 945/3 = 315 plf
Unfactored Total Load per ply = 660/3 = 220 plf
Unfactored Live Load per ply = 480/3 = 160 plf

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

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	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/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	286	382	570	917	605	806	1206	1543	1127	1503		2018	1203	1604		2073	1797	2397		2455	5'
6'	171	229	340	636	371	494	738	1070	710	947	1416	1681	761	1014	1517	1726	1165	1553		2044	6'
7'	110	147	218	466	242	323	481	785	472	630	940	1242	507	677	1010	1306	791	1054	1576	1751	7'
8'	75	100	147	356	166	221	329	600	328	438	653	950	353	471	702	999	558	744	1110	1374	8'
9'	53	71	103	280	118	158	234	473	237	316	469	749	255	340	506	788	406	542	808	1084	9'
9'-6"	45	60	88	251	101	135	199	424	203	271	402	672	219	292	434	706	351	468	696	972	9'-6"
10'	39	52	75	226	87	116	171	382	176	235	347	605	190	253	375	637	304	406	604	876	10'
11'	-	-	-	-	66	88	129	315	134	179	264	499	145	193	285	525	233	311	462	723	11'
12'	-	-	-	-	51	68	99	264	104	139	204	419	113	150	221	440	183	244	360	606	12'
13'	-	-	-	-	40	54	77	224	83	110	161	356	89	119	174	374	145	194	286	515	13'
14'	-	-	-	-	32	43	62	192	66	89	129	306	72	96	140	322	117	157	230	443	14'
15'	-	-	-	-	-	-	-	-	54	73	104	266	59	78	113	279	96	128	187	385	15'
16'	-	-	-	-	-	-	-	-	45	60	86	233	49	65	93	245	80	107	154	338	16'
16'-6"	-	-	-	-	-	-	-	-	41	55	78	218	44	59	84	230	73	97	141	317	16'-6"
17'	-	-	-	-	-	-	-	-	37	50	71	205	41	54	77	216	67	89	128	298	17'
18'	-	-	-	-	-	-	-	-	32	42	59	183	34	46	64	192	56	75	108	265	18'
18'-6"	-	-	-	-	-	-	-	-	-	-	-	-	32	42	59	181	52	70	99	251	18'-6"
19'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	64	91	237	19'
20'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	55	78	213	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	2032			2591	2905			3055				3492				3612	5'
6'	1329	1772		2158	1953			2544	2620			2908				3054	6'
7'	907	1210	1809	1849	1362	1817		2180	1863	2485		2491	2423			2646	7'
8'	643	858	1281	1521	981	1309		1906	1362	1817		2178	1797			2333	8'
9'	470	627	935	1200	727	969	1447	1637	1021	1361		1935	1362	1817		2086	9'
9'-6"	406	542	807	1076	631	842	1256	1468	891	1188	1774	1833	1195	1594		1981	9'-6"
10'	353	471	701	971	551	735	1096	1324	782	1042	1556	1703	1053	1404		1886	10'
11'	271	362	538	801	427	569	847	1093	610	813	1212	1406	828	1104	1647	1721	11'
12'	213	284	420	672	337	449	667	917	484	645	960	1180	661	882	1314	1473	12'
13'	170	226	334	571	270	360	533	780	390	520	772	1004	535	714	1062	1254	13'
14'	137	183	269	491	219	292	432	671	318	424	628	864	439	585	869	1079	14'
15'	113	150	220	427	180	241	354	583	263	350	518	751	364	485	719	939	15'
16'	93	125	181	374	150	200	294	512	219	292	431	659	304	406	600	824	16'
16'-6"	85	114	165	351	137	183	268	481	201	268	394	619	280	373	551	774	16'-6"
17'	78	104	151	331	126	168	246	452	185	246	362	583	257	343	506	728	17'
18'	66	88	127	294	107	143	207	402	157	209	306	518	219	292	430	648	18'
18'-6"	61	82	117	278	99	132	191	380	145	194	283	490	203	271	397	613	18'-6"
19'	56	75	107	263	91	122	176	360	134	179	261	464	188	251	368	581	19'
20'	49	65	92	237	79	105	151	324	116	155	224	418	163	217	317	523	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. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/480 as noted in the table. Vibration has not been considered.
5. Total Deflection Resistance is limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

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

* Deflections rounded to the nearest 1/16".

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
4. For 1-1/2" thick LSL, depths of 14" 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 tabulated resistances in the tables are for a single ply of 1-1/2" LSL. For a 3" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 4-1/2" wide member, divide the design loads by 3.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

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

TO USE:

1. Select the span required.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3-1/2" width or by 3 to verify a 5-1/4" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit.
6. Select a product that satisfies all three conditions.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/360 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 180 plf

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 480) + (1.25 x 180) = 945 plf
Unfactored Total Load = 480 + 180 = 660 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 945/2 = 473 plf
Unfactored Total Load per ply = 660/2 = 330 plf
Unfactored Live Load per ply = 480/2 = 240 plf

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

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 945/3 = 315 plf
Unfactored Total Load per ply = 660/3 = 220 plf
Unfactored Live Load per ply = 480/3 = 160 plf

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

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	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/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	334	445	665	1070	706	941	1408	1800	1315	1753		2355	1404	1872		2418	2097	2796		2864	5'
6'	200	267	397	742	432	577	861	1248	828	1105	1652	1961	888	1184	1770	2014	1359	1812		2385	6'
7'	129	172	254	544	282	376	561	916	551	735	1097	1449	592	789	1179	1524	922	1230	1839	2043	7'
8'	87	116	172	415	194	258	383	700	383	511	761	1108	412	550	819	1165	651	868	1295	1603	8'
9'	62	82	121	327	138	184	273	552	276	368	547	874	298	397	590	919	474	632	942	1264	9'
9'-6"	53	70	103	293	118	158	233	494	237	316	470	784	256	341	506	824	409	546	812	1134	9'-6"
10'	45	60	88	264	102	136	200	446	205	274	405	706	221	295	438	743	355	474	704	1023	10'
11'	34	46	65	217	77	103	150	367	156	209	308	583	169	225	332	613	272	363	539	844	11'
12'	-	-	-	-	60	80	116	308	122	162	238	488	131	175	258	514	213	284	420	707	12'
13'	-	-	-	-	47	63	90	261	96	129	188	415	104	139	203	437	170	226	333	601	13'
14'	-	-	-	-	38	51	72	225	78	104	150	357	84	112	163	375	137	183	268	517	14'
15'	-	-	-	-	31	41	58	195	63	85	122	310	69	92	132	326	112	150	219	450	15'
16'	-	-	-	-	-	-	-	-	52	70	100	272	57	76	108	286	93	124	180	394	16'
16'-6"	-	-	-	-	-	-	-	-	48	64	91	255	52	69	99	268	85	114	164	370	16'-6"
17'	-	-	-	-	-	-	-	-	44	59	83	240	47	63	90	252	78	104	150	348	17'
18'	-	-	-	-	-	-	-	-	37	49	69	213	40	53	75	224	66	88	126	310	18'
18'-6"	-	-	-	-	-	-	-	-	34	46	63	201	37	49	69	212	61	81	116	293	18'-6"
19'	-	-	-	-	-	-	-	-	31	42	58	190	34	46	63	200	56	75	106	277	19'
20'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	65	91	249	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
5'	2371			3023	3389			3564				4074				4214	5'
6'	1550	2067		2518	2278			2968	3057			3393				3563	6'
7'	1059	1412	2111	2157	1590	2120		2543	2174	2899		2906	2827			3087	7'
8'	750	1001	1494	1775	1145	1527		2224	1590	2120		2541	2097			2722	8'
9'	549	732	1091	1400	848	1131	1688	1910	1191	1588		2258	1590	2120		2434	9'
9'-6"	474	632	942	1256	736	982	1465	1713	1040	1386	2070	2138	1394	1859		2311	9'-6"
10'	412	550	818	1132	643	858	1278	1545	912	1216	1815	1987	1229	1638		2201	10'
11'	317	423	627	934	498	664	988	1275	711	949	1414	1640	966	1288	1922	2008	11'
12'	248	331	490	784	393	524	778	1070	565	753	1120	1376	771	1029	1533	1719	12'
13'	198	264	390	666	315	420	622	910	455	606	900	1171	624	833	1239	1463	13'
14'	160	214	314	573	256	341	504	783	371	495	733	1008	512	683	1014	1259	14'
15'	131	175	256	498	210	281	413	681	306	409	604	877	424	566	839	1095	15'
16'	109	145	212	437	175	234	343	597	256	341	503	769	355	474	700	961	16'
16'-6"	100	133	193	410	160	214	313	561	234	313	460	722	326	435	642	903	16'-6"
17'	91	122	176	386	147	196	287	528	216	288	422	680	300	400	590	850	17'
18'	77	103	148	343	125	167	242	469	183	244	358	605	256	341	501	756	18'
18'-6"	71	95	136	324	115	154	223	444	169	226	330	572	237	316	463	715	18'-6"
19'	66	88	125	307	107	142	206	420	157	209	305	542	220	293	429	678	19'
20'	57	76	107	276	92	123	176	378	135	181	262	488	190	253	370	610	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. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/480 as noted in the table. Vibration has not been considered.
5. Total Deflection Resistance is limited to L/240. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

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

* Deflections rounded to the nearest 1/16".

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
4. For 1-3/4" thick LSL, 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 tabulated resistances in the tables are for a single ply of 1-3/4" LSL. For a 3-1/2" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 5-1/4" wide member, divide the design loads by 3.
6. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
7. Do not use a product where designated "-" without further analysis by a design professional.

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

TO USE:

1. Select the span required. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof pitch adjustment factor from the table at the bottom of this page.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3" width or by 3 to verify a 4-1/2" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit. For a live load deflection limit of L/480, compare the unfactored design live load to the L/480 Live Load Deflection Resistance from the Uniform Floor Load Resistance Tables.
6. Select a product that satisfies all three conditions.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 8' 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 specified loads: Snow Load = 720 plf; Dead Load = 400 plf

CALCULATE BEAM SPAN: 8' x 1.054 = 8.43' ⟶ **Use 9'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 720) + (1.25 x 400) = 1580 plf
Unfactored Total Load = 0.9 x 720 + 400 = 1048 plf
Unfactored Snow Load = 0.9 x 720 = 648 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 1580/2 = 790 plf
Unfactored Total Load per ply = 1048/2 = 524 plf
Unfactored Live Load per ply = 648/2 = 324 plf
Use 2 plies 1-1/2" x 11-1/4"

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 1580/3 = 527 plf
Unfactored Total Load per ply = 1048/3 = 350 plf
Unfactored Live Load per ply = 648/3 = 216 plf
Use 3 plies 1-1/2" x 9-1/4"

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'	382	573	761	917	806	1210		1543	1503			2018	1604			2073	2397			2455	5'
6'	229	343	455	636	494	742	985	1070	947	1420		1681	1014	1522		1726	1553			2044	6'
7'	147	221	292	466	323	484	642	785	630	945		1242	677	1015		1306	1054	1582		1751	7'
8'	100	150	197	356	221	332	439	600	438	657	872	950	471	707	938	999	744	1116		1374	8'
9'	71	106	139	280	158	237	313	473	316	474	627	749	340	510	676	788	542	813	1079	1084	9'
9'-6"	60	91	118	251	135	203	267	424	271	407	538	672	292	439	580	706	468	702	930	972	9'-6"
10'	52	78	101	226	116	175	230	382	235	352	465	605	253	380	502	637	406	609	807	876	10'
11'	39	59	76	186	88	133	173	315	179	268	353	499	193	290	381	525	311	467	618	723	11'
12'	30	45	58	156	68	103	133	264	139	209	274	419	150	226	296	440	244	366	482	606	12'
13'	-	-	-	-	54	81	105	224	110	166	216	356	119	179	234	374	194	291	383	515	13'
14'	-	-	-	-	43	65	83	192	89	133	174	306	96	144	188	322	157	235	309	443	14'
15'	-	-	-	-	35	53	67	167	73	109	141	266	78	118	153	279	128	193	252	385	15'
16'	-	-	-	-	-	-	-	-	60	90	116	233	65	98	126	245	107	160	208	338	16'
16'-6"	-	-	-	-	-	-	-	-	55	82	105	218	59	89	114	230	97	146	190	317	16'-6"
17'	-	-	-	-	-	-	-	-	50	75	96	205	54	82	104	216	89	134	173	298	17'
18'	-	-	-	-	-	-	-	-	42	64	80	183	46	69	87	192	75	113	146	265	18'
18'-6"	-	-	-	-	-	-	-	-	39	59	74	172	42	64	80	181	70	105	134	251	18'-6"
19'	-	-	-	-	-	-	-	-	36	54	68	163	39	59	74	172	64	97	124	237	19'
20'	-	-	-	-	-	-	-	-	31	47	58	147	33	50	63	154	55	83	105	213	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'				2591				3055				3492				3612	5'
6'	1772			2158				2544				2908				3054	6'
7'	1210	1815		1849	1817			2180	2485			2491				2646	7'
8'	858	1287		1521	1309			1906	1817			2178				2333	8'
9'	627	941		1200	969	1454		1637	1361			1935	1817			2086	9'
9'-6"	542	813		1076	842	1263		1468	1188	1782		1833	1594			1981	9'-6"
10'	471	707	937	971	735	1103		1324	1042	1564		1703	1404			1886	10'
11'	362	543	719	801	569	854		1093	813	1220		1406	1104	1656		1721	11'
12'	284	426	562	672	449	674	891	917	645	968		1180	882	1323		1473	12'
13'	226	340	447	571	360	540	713	780	520	780		1004	714	1071		1254	13'
14'	183	275	361	491	292	439	578	671	424	636	841	864	585	878		1079	14'
15'	150	226	295	427	241	361	475	583	350	526	693	751	485	728		939	15'
16'	125	187	244	374	200	301	394	512	292	439	577	659	406	609	804	824	16'
16'-6"	114	171	223	351	183	275	360	481	268	402	529	619	373	560	737	774	16'-6"
17'	104	157	204	331	168	253	330	452	246	370	485	583	343	515	678	728	17'
18'	88	133	171	294	143	214	279	402	209	314	411	518	292	439	576	648	18'
18'-6"	82	123	158	278	132	198	257	380	194	291	380	490	271	406	533	613	18'-6"
19'	75	113	145	263	122	183	238	360	179	269	351	464	251	377	493	581	19'
20'	65	98	124	237	105	158	204	324	155	232	302	418	217	326	425	523	20'

PITCH ADJUSTMENT

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

DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/240 as noted in the table.
5. Total Deflection Resistance is limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate pitch adjustment factor from the table above.
4. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
5. For 1-1/2" thick LSL, depths of 14" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
6. The tabulated resistances in the tables are for a single ply of 1-1/2" LSL. For a 3" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 4-1/2" wide member, divide the design loads by 3.
7. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
8. Do not use a product where designated "-" without further analysis by a design professional.

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

TO USE:

1. Select the span required. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof pitch adjustment factor from the table at the bottom of this page.
2. Divide the design loads by the number of plies to verify each ply of the member. Divide the design loads by 2 to verify a 3-1/2" width or by 3 to verify a 5-1/4" width.
3. Compare the factored design total load to the Factored Total Resistance column.
4. Compare the unfactored design total load to the Total Load Deflection Resistance.
5. Compare the unfactored design live load to the Live Load Deflection Resistance for the appropriate deflection limit. For a live load deflection limit of L/480, compare the unfactored design live load to the L/480 Live Load Deflection Resistance from the Uniform Floor Load Resistance Tables.
6. Select a product that satisfies all three conditions.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 8' beam span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies a L/240 Snow Load deflection limit for the following specified loads:
Snow Load = 720 plf; Dead Load = 400 plf

CALCULATE BEAM SPAN: 8' x 1.054 = 8.43' ⟶ **Use 9'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 x 720) + (1.25 x 400) = 1580 plf
Unfactored Total Load = 0.9 x 720 + 400 = 1048 plf
Unfactored Snow Load = 0.9 x 720 = 648 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 1580/2 = 790 plf
Unfactored Total Load per ply = 1048/2 = 524 plf
Unfactored Live Load per ply = 648/2 = 324 plf

Use 2 plies 1-3/4" x 9-1/4"

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 1580/3 = 527 plf
Unfactored Total Load per ply = 1048/3 = 350 plf
Unfactored Live Load per ply = 648/3 = 216 plf

Use 3 plies 1-3/4" x 9-1/4"

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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'	445	668	888	1070	941	1412		1800	1753			2355	1872			2418	2796			2864	5'
6'	267	400	531	742	577	865	1150	1248	1105	1657		1961	1184	1776		2014	1812			2385	6'
7'	172	258	340	544	376	565	749	916	735	1103		1449	789	1184		1524	1230	1845		2043	7'
8'	116	175	230	415	258	388	513	700	511	767	1017	1108	550	825	1095	1165	868	1302		1603	8'
9'	82	124	162	327	184	277	365	552	368	553	732	874	397	596	789	919	632	949	1259	1264	9'
9'-6"	70	106	138	293	158	237	312	494	316	475	628	784	341	512	677	824	546	819	1085	1134	9'-6"
10'	60	91	118	264	136	204	268	446	274	411	543	706	295	443	585	743	474	711	942	1023	10'
11'	46	69	88	217	103	155	202	367	209	313	412	583	225	338	445	613	363	545	721	844	11'
12'	35	53	68	182	80	120	156	308	162	244	320	488	175	263	346	514	284	427	563	707	12'
13'	-	-	-	-	63	95	122	261	129	193	253	415	139	209	273	437	226	340	447	601	13'
14'	-	-	-	-	51	76	97	225	104	156	203	357	112	168	219	375	183	275	360	517	14'
15'	-	-	-	-	41	62	79	195	85	127	165	310	92	138	178	326	150	225	294	450	15'
16'	-	-	-	-	34	51	64	171	70	105	135	272	76	114	147	286	124	187	243	394	16'
16'-6"	-	-	-	-	31	47	58	160	64	96	123	255	69	104	133	268	114	171	221	370	16'-6"
17'	-	-	-	-	-	-	-	-	59	88	112	240	63	95	122	252	104	157	202	348	17'
18'	-	-	-	-	-	-	-	-	49	74	94	213	53	80	102	224	88	132	170	310	18'
18'-6"	-	-	-	-	-	-	-	-	46	69	86	201	49	74	94	212	81	122	157	293	18'-6"
19'	-	-	-	-	-	-	-	-	42	63	79	190	46	69	86	200	75	113	144	277	19'
20'	-	-	-	-	-	-	-	-	36	54	67	171	39	59	73	180	65	97	123	249	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
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		Live/Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
5'				3023				3564				4074				4214	5'
6'	2067			2518				2968				3393				3563	6'
7'	1412	2118		2157	2120			2543	2899			2906				3087	7'
8'	1001	1501		1775	1527			2224	2120			2541				2722	8'
9'	732	1098		1400	1131	1696		1910	1588			2258	2120			2434	9'
9'-6"	632	949		1256	982	1473		1713	1386	2080		2138	1859			2311	9'-6"
10'	550	825	1093	1132	858	1287		1545	1216	1824		1987	1638			2201	10'
11'	423	634	839	934	664	996		1275	949	1423		1640	1288	1932		2008	11'
12'	331	497	656	784	524	786	1040	1070	753	1130		1376	1029	1543		1719	12'
13'	264	396	522	666	420	630	832	910	606	910		1171	833	1249		1463	13'
14'	214	321	421	573	341	512	675	783	495	743	981	1008	683	1024		1259	14'
15'	175	263	344	498	281	421	554	681	409	613	809	877	566	849		1095	15'
16'	145	218	285	437	234	351	460	597	341	512	673	769	474	711	938	961	16'
16'-6"	133	200	260	410	214	321	420	561	313	469	617	722	435	653	860	903	16'-6"
17'	122	183	238	386	196	295	385	528	288	432	566	680	400	601	791	850	17'
18'	103	155	200	343	167	250	326	469	244	367	480	605	341	512	672	756	18'
18'-6"	95	143	184	324	154	231	300	444	226	339	443	572	316	474	622	715	18'-6"
19'	88	132	170	307	142	214	277	420	209	314	410	542	293	440	576	678	19'
20'	76	114	145	276	123	184	238	378	181	271	353	488	253	380	496	610	20'

PITCH ADJUSTMENT

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

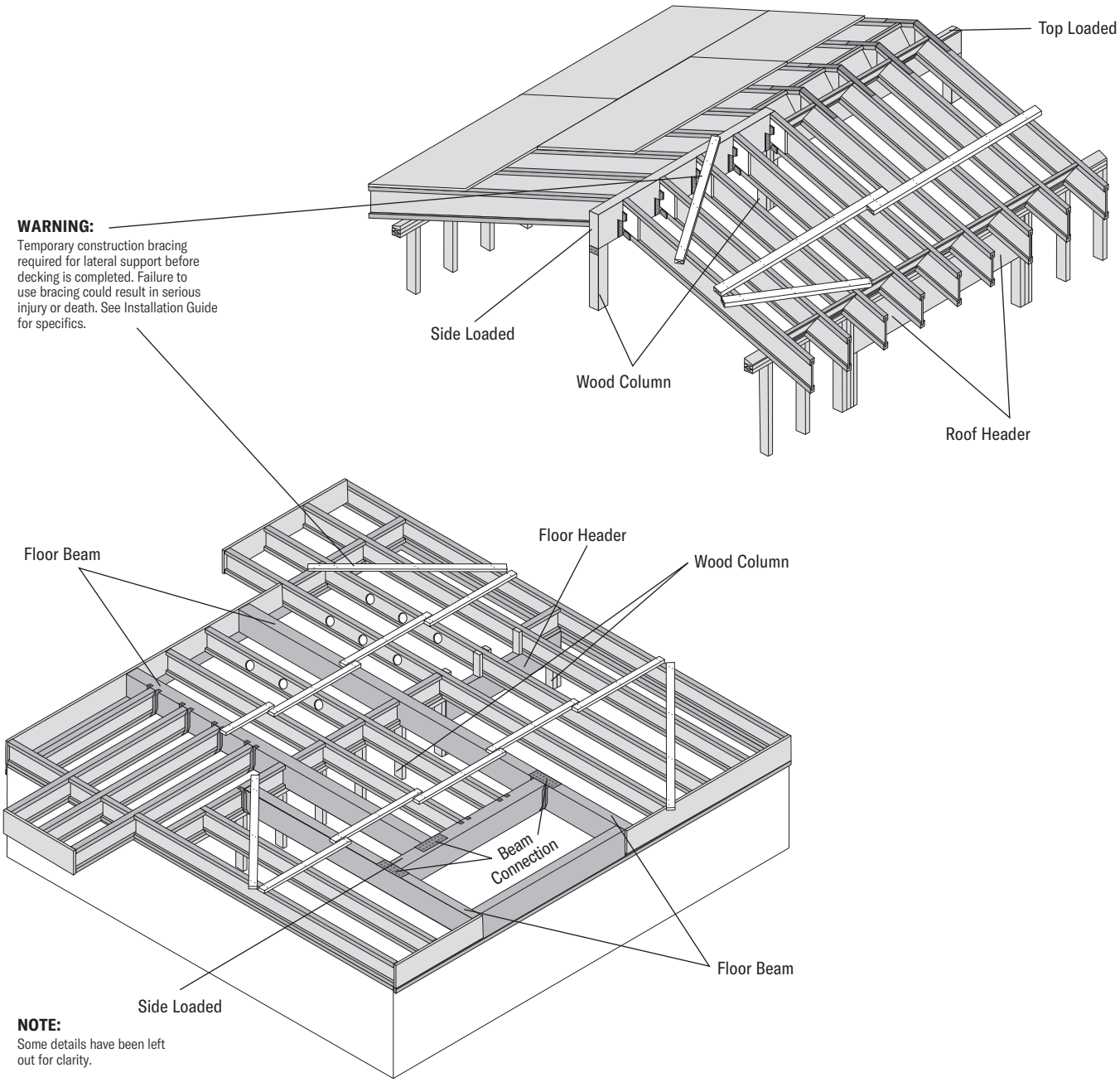
DESIGN ASSUMPTIONS:

1. Span is the center-to-center distance of the supports, along the sloped length of the member and is valid for simple or equal, continuous span applications.
2. The values in the tables are for uniform loads only.
3. Factored Total Resistance is for standard (100%) duration and is adjusted to account for the self-weight of the member. The specified dead load shall not exceed the specified live load.
4. Live Load Deflection Resistance is limited to L/360 or L/240 as noted in the table.
5. Total Deflection Resistance is limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a design professional.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 22.

ADDITIONAL NOTES:

1. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
2. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
3. For beams with a pitch of 2:12 or greater, the horizontal span shall be multiplied by the appropriate pitch adjustment factor from the table above.
4. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
5. For 1-3/4" thick LSL, depths of 16" and greater shall be used with a minimum of two plies unless designed specifically as a single ply with proper lateral bracing, such as a marriage beam for each half of a manufactured home before the units are joined.
6. The tabulated resistances in the tables are for a single ply of 1-3/4" LSL. For a 3-1/2" wide member, divide the design loads by 2 to verify the resistance of each ply. For a 5-1/4" wide member, divide the design loads by 3.
7. The member width shall be properly built up by connecting plies of the same grade of LSL. Refer to the multiple-ply connections on pages 34-35.
8. Do not use a product where designated "-" without further analysis by a design professional.

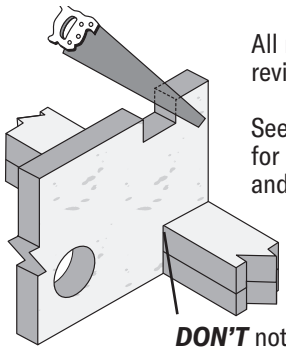
Temporary Bracing & Warnings



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.)

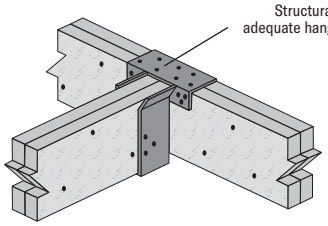


DON'T notch beam at support.

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

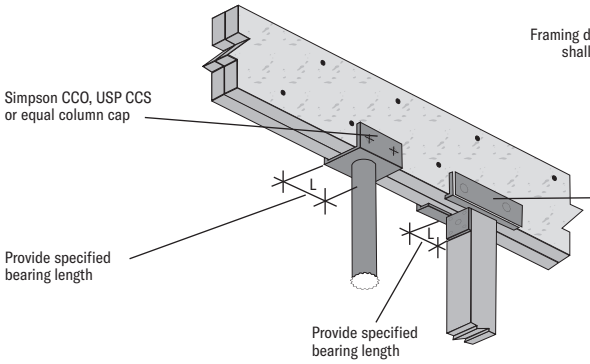
See hole detail on page 33 for allowable hole sizes and locations.

P3 BEAM CONNECTION



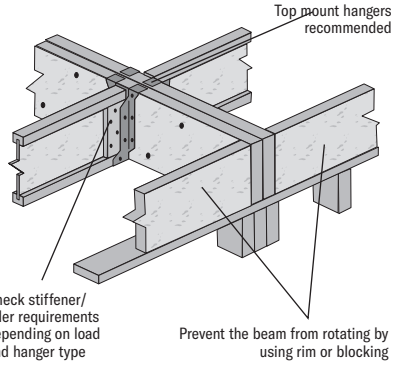
Hanger shall apply load equally to each ply or special design required

P4 STEEL COLUMN & WOOD COLUMN

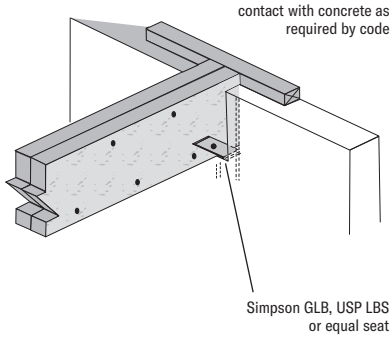


P5

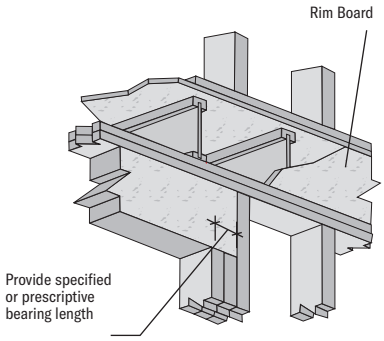
P6 FLOOR BEAM (Flush ceiling)



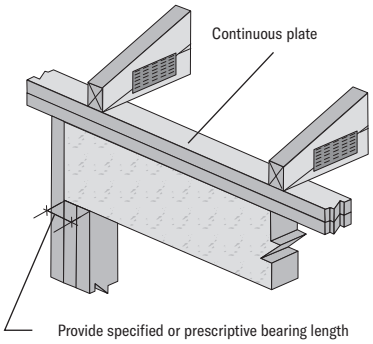
P7 CONCRETE WALL



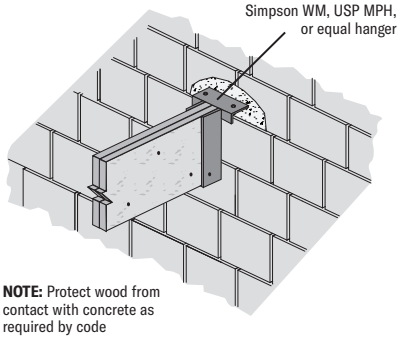
Q1 WINDOW/DOOR HEADER



Q2 WINDOW/DOOR HEADER



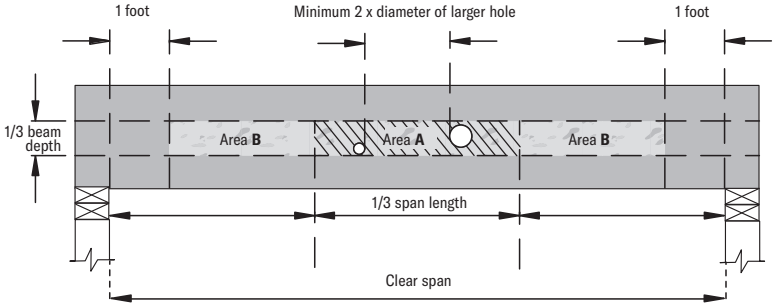
Q4 MASONRY HANGER



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

BEAM HOLE DETAILS

The prescriptive holes described below may only be used when all the conditions and notes apply.
Larger holes reduce the capacity of the LSL and are permitted only when analyzed using LP® SolidStart® Design software.

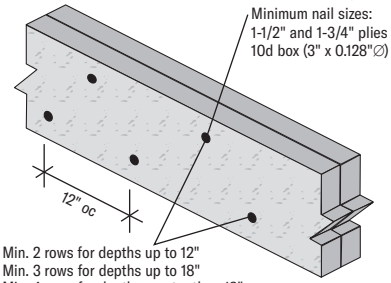


NOTES:

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 engineer/architect.
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.

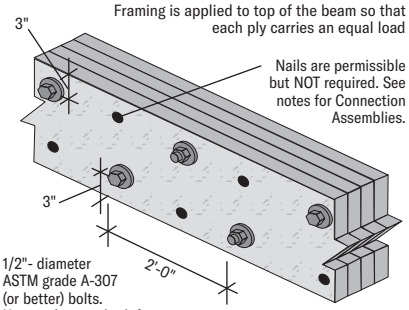
Connection of Multiple Ply Beams

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



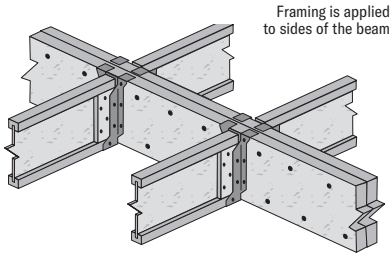
Min. 2 rows for depths up to 12"
Min. 3 rows for depths up to 18"
Min. 4 rows for depths greater than 18"
Framing is applied to top of the beam so that each ply carries an equal load

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



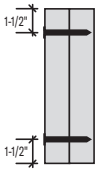
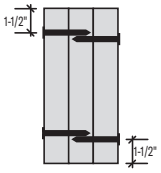
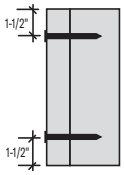
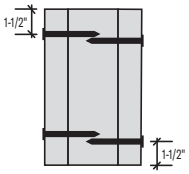
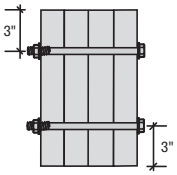
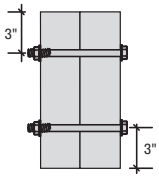
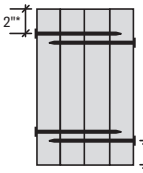
1/2"- diameter ASTM grade A-307 (or better) bolts.
Use washers on both faces.

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



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

CONNECTION ASSEMBLIES

DETAIL A	DETAIL B	DETAIL C/E	DETAIL D	DETAIL F	DETAIL G	DETAIL H
MAXIMUM 4" WIDE 2-PLY BEAMS	**MAXIMUM 6" WIDE 3-PLY BEAMS**	**MAXIMUM 7-1/4" WIDE 2-PLY BEAMS**	**MAXIMUM 9-1/4" WIDE 3-PLY BEAMS**	**MAXIMUM 7" WIDE 3- OR 4-PLY BEAMS**	**MAXIMUM 7" WIDE 2-PLY BEAMS**	**MAXIMUM 7" WIDE 2-, 3- OR 4-PLY BEAMS**
						
2" max. ply thickness	2" max. ply thickness	2" maximum side member 3-1/2" main member for C 5-1/4" main member for E	2" maximum side members 5-1/4" maximum main member			Simpson SDS 1/4" x 6" Simpson SDW 6-3/4" or equal Simpson SDW may be driven from one side.

* Minimum of 2" or the screw mfg.'s edge distance.

FACTORED UNIFORM SIDE-LOAD RESISTANCE (PLF)

Connection Detail	2 Rows of Nails at 12" oc*	3 Rows of Nails at 12" oc*	2 Rows of 1/2" Bolts at 24" oc	2 Rows of 1/2" Bolts at 12" oc
A	788	1182	780	1560
B	591	887	585	1170
C	591	887	878	1755
D	525	788	780	1560
E	525	788	869	1739
F	na	na	520	1040
G	na	na	1560	3120
H	Refer to Simpson Strong-Tie® catalog for SDS & SDW installation requirements & capacities			

NAIL SCHEDULE

Nail Length (in)	Nail Diameter (in)	Factored Lateral Resistance (lbs)	Nail Size Factor	Shank Type
3-1/2"	0.160	216	1.10	common wire
	0.152	197	1.00	spiral
3-1/4"	0.144	178	0.90	common wire
	0.122	131	0.66	spiral
	0.120	127	0.64	power-driven[13]
3"	0.144	178	0.90	common wire
	0.122	131	0.66	spiral
	0.120	127	0.64	power-driven[13]

NOTES:

1. When driving nails from each face, alternate every other nail in each row.
2. Unless specifically designed, use 3-1/2" nails for 1-3/4" thick plies. If the nails do not fully penetrate the second ply (main member), then the nails shall be driven from both faces.
3. Use 2 rows of nails for depths to 12". Use 3 rows of nails for depths greater than 12", up to 18". Use 4 rows of nails for depths greater than 18", up to 24".
4. Factored resistances are for standard load duration and shall be adjusted according to code. If the dead load exceeds the live load, the appropriate load duration factor (<1) shall be applied.
5. The Factored Uniform Side-Load Resistance values are the maximum factored 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 side-load connection from this table. The beam shall be designed to support all applied loads.
6. The Factored Uniform Side-Load Resistance for nails is based on 3-1/2" spiral nails for 1-3/4" LVL. For other nail sizes, multiply the Factored Uniform Side-Load Resistance by the Nail Size Factor from the Nail Schedule.
7. The Factored Uniform Side-Load Resistance for bolts is based on ASTM grade A-307, 1/2"Ø bolts, for loads applied perpendicular-to-grain (see Fastener Design on page 35).
8. For nails at 8" oc, multiply resistance by 1.5. For nails at 6" oc, multiply resistance by 2. For four rows of nails, double the two-row resistance.
9. For detail **A**, or when attaching the first two plies for detail **B** (and optionally for details **F** and **H** – see note 11), 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.
10. For details **C** and **E**, when side-loaded, the larger side-load shall be applied to the thicker ply (main member).
11. For details **F** and **H**, it is permissible to nail the plies together before bolting or driving Simpson SDS or SDW (or equal) screws. Nail two plies together (see note 8) then nail one additional ply to each side.
12. 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.
13. Power-driven nails shall have a yield strength equivalent to common wire nails of the same shank diameter.
14. 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.

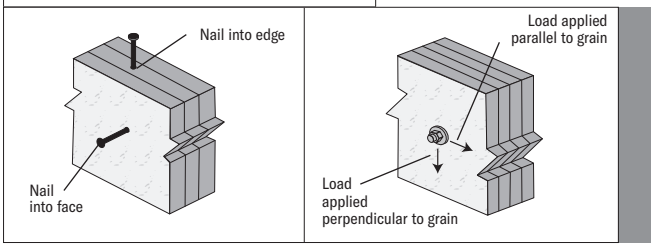
FASTENER DESIGN

Equivalent Specific Gravity					
Nail Only Withdrawal		Nails and Wood Screws Dowel Bearing		Bolts and Lag Screws	
				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:

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

FASTENER & LOAD ORIENTATION



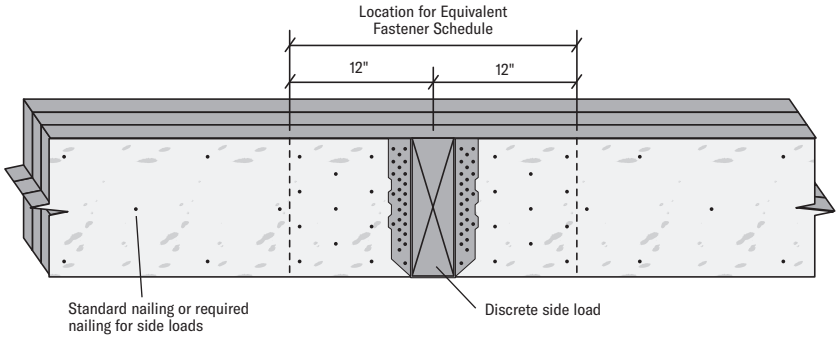
NAIL SPACING REQUIREMENTS

Material	Thickness	Fastener Orientation	Nail Size	Minimum End Distance	Minimum Nail Spacing per Row	
					Single Row	Multiple Rows
LP LSL	≥1-1/4"	Edge	2-1/2"	2"	4"	na
			3" or 3-1/4"	2"	4"	
			3-1/2"	2-1/2"	5"	
		Face	2-1/2"	7/8"	1"	1"
			3" or 3-1/4"	7/8"	1"	1"
			3-1/2"	7/8"	1-1/2"	1-1/2"

NOTES:

1. Edge distance shall be sufficient to prevent splitting, but not less than permitted in CSA O86.
2. Multiple rows of nails shall be offset at least 1/2" and staggered, and equally spaced about the centerline of the edge or face (whichever applies).
3. 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 details below.)
4. Fasteners are common wire or common spiral nails.
5. Minimum Nail Spacing for the face orientation is applicable to nails that are installed in rows that are parallel to the direction of the face grain (length) of the LSL. For nails in face installed in rows that are perpendicular to the direction of the grain (width/depth) of LSL, the minimum nail spacing for the face orientation shall be as per CSA O86.
6. For LP LSL and LP LVL with a thickness of 1-1/2" and greater, refer to CCMC evaluation report 13319-R and 11518-R for additional information.

SIDE-LOAD CONNECTION EXAMPLE



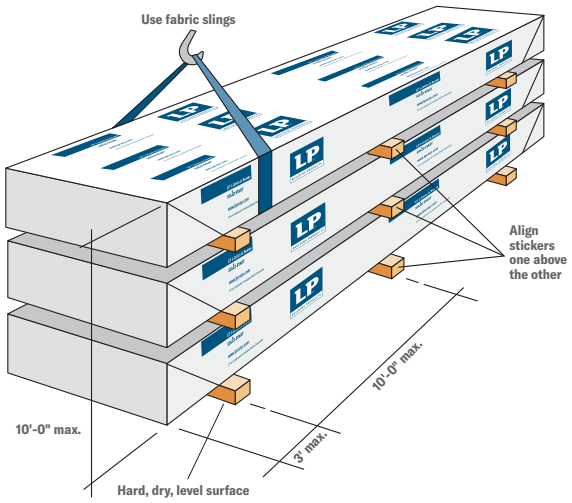
EXAMPLE: Assuming a properly designed 3-ply 14" beam, determine the equivalent connection to support a 6970 lb point load applied to the side of the beam.

SOLUTION:

1. Determine the equivalent PLF load over the 2' length by dividing the applied load by 2: 6970 lb / 2' = 3485 plf
2. 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: 3485 plf / 887 = 3.9
3. The required total number of nails is: 3.9 * 3 rows of nails @ 12" oc = 11.7 nails per foot
4. Connect the front (loaded) ply with the nailing determined in step 3: drive 12 3-1/2" nails within 12" to each side of the point load (a total of 24 nails). Verify nail spacing.
5. Connect the back ply with half the number of nails determined in step 4: drive 6 3-1/2" nails, from the back, within 12" to each side of the point load (a total of 12 nails). Verify nail spacing.
6. Connect full length of member with the standard nailing or as required for side loads.
7. 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 equilibrated moisture content does not exceed a yearly average of 15% and does not exceed 19% at any time.
- 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 1.35E, 1.55E, and 1.75E

- Standard Thickness of 1-1/2", 1-3/4", and 3-1/2".
- 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".
- Lengths up to 48". Longer lengths may be available for 1-3/4" and 3-1/2" thicknesses.

Not all grades are available in all sizes, contact your local distributor for availability.

CODE EVALUATION

Code evaluation reports can be obtained at www.lpcorp.com

CCMC 13319-R
APA PR-L280(C)

For more information on the full line of LP® SolidStart® Engineered Wood Products or the nearest distributor, visit our web site at LPCorp.com.

Phone: 1-888-820-0325
E-mail: customer.support@LPCorp.com.

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.

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LPEW0296 8/19 OS/ARGENT