



LP LVL 2400F_b-1.7E Technical Guide

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This LP LVL guide must be used in conjunction with the Engineered Wood Product Guide.

Product Specifications & Design Values

DESIGN VALUES (ALLOWABLE STRESS DESIGN - PSI)					
Grade	BENDING F_b *	MOE (x 10 ⁶)	COMPRESSION F_c (parallel to grain)	COMPRESSION F_{cp} (perpendicular to grain)	SHEAR F_v
2400F _b -1.7E	2400	1.7	2350	750	285

NOTES:

* F_b is for 12" depth (d).
 For depths greater than 12", adjust F_b by $(12/d)^{1/7}$.
 For depths less than 12", adjust F_b by $(12/d)^{1/9}$.
 For depths less than 5-1/2", adjust F_b by 1.09.

The values above are for normal load duration (100%). Bending (F_b), Compression Parallel-to-Grain (F_c) and Shear (F_v) may be adjusted according to code. MOE (E) and Compression Perpendicular-to-Grain (F_{cp}) shall NOT be adjusted.

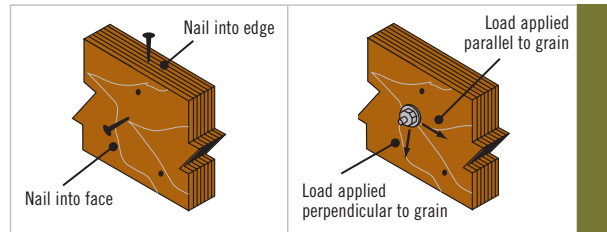
SECTION PROPERTIES AND ALLOWABLE CAPACITIES																
Depth	Weight (lb/ft)				Allowable Moment (lb-ft)				Allowable Shear (lb)				Moment of Inertia (in ⁴)			
	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"
9-1/2"	4.8	9.5	14.3	19.0	5,403	10,806	16,209	21,612	3,159	6,318	9,476	12,635	125	250	375	500
11-7/8"	5.9	11.9	17.8	23.8	8,235	16,470	24,706	32,941	3,948	7,897	11,845	15,794	244	488	733	977
14"	7.0	14.0	21.0	28.0	11,184	22,368	33,552	44,737	4,655	9,310	13,965	18,620	400	800	1201	1601
16"	8.0	16.0	24.0	32.0	14,332	28,664	42,996	57,328	5,320	10,640	15,960	21,280	597	1195	1792	2389

MODIFICATION FACTORS:

The Allowable Moment (M) and Shear (V) above are for normal load duration (100%) and may be adjusted according to code.

FASTENER VALUES:

Refer to the current ICC ES evaluation report, ESR-1254, for information on the equivalent specific gravity for design of nail and bolt connections. ICC ES evaluation reports can be obtained online at www.icc-es.org.



BEARING LENGTH AND MAXIMUM REACTION CHART

How to use bearing charts:

1. Determine the thickness required for the LP LVL beam and calculate the maximum reaction.
2. Select the appropriate table for 1-ply (1-3/4"), 2-ply (3-1/2") or 3-ply (5-1/4").
3. Select a bearing length with a maximum reaction that meets or exceeds your calculated value.
4. Make sure the support is structurally adequate to carry the reaction.

Example: 3-1/2" LP LVL with a reaction of 9,500 lbs.

Solution: Select a 4" bearing length with a maximum reaction of 10,500 lbs.

MAXIMUM REACTION (LBS.)		Bearing Length (in)																				
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"	1968	2625	3281	3937	4593	5250	5906	6562	7218	7875	8531	9187	9843	10500	11156	11812	12468	13125	13781	14437	15093	15750
3-1/2"	3937	5250	6562	7875	9187	10500	11812	13125	14437	15750	17062	18375	19687	21000	22312	23625	24937	26250	27562	28875	30187	31500
5-1/4"	5906	7875	9843	11812	13781	15750	17718	19687	21656	23625	25593	27562	29531	31500	33468	35437	37406	39375	41343	43312	45281	47250
7"	7875	10500	13125	15750	18375	21000	23625	26250	28875	31500	34125	36750	39375	42000	44625	47250	49875	52500	55125	57750	60375	63000

NOTES:

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

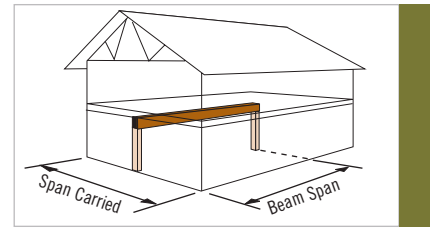
Floor Beam Quick Reference Tables

To use these charts:

1. Select the correct table for the beam application you need.
2. Choose the required beam span in the left column.
3. Select the span carried on the top line.
4. Read the beam size or choice of beam sizes from table.

Example: A 14'-0" span beam carries 15'-0" simple span joists on each side.

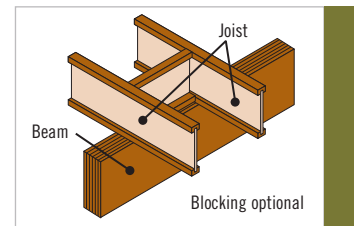
Solution: Using table below, 30'-0" span carried, select either 3-1/2" x 16" or 5-1/4" x 14".



FOR FLOOR JOISTS THAT ARE CONTINUOUS (ONE PIECE) (40 PSF LIVE, 15 PSF DEAD, 100%)												
Beam Span (ft)	Beam Width	Span Carried By Beam (ft)										
		20	22	24	26	28	30	32	34	36	38	40
6'	3-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
8'	3-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
10'	3-1/2"	9-1/2"	9-1/2"	9-1/2"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	11-7/8"
12'	3-1/2"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	16"
	5-1/4"	9-1/2"	9-1/2"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"
14'	3-1/2"	14"	14"	14"	14"	16"	16"	16"	16"	16"	-	-
	5-1/4"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"
16'	3-1/2"	14"	16"	16"	16"	-	-	-	-	-	-	-
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"
18'	3-1/2"	16"	-	-	-	-	-	-	-	-	-	-
	5-1/4"	14"	14"	16"	16"	16"	16"	16"	16"	-	-	-

For floor joists that are continuous over the beam:

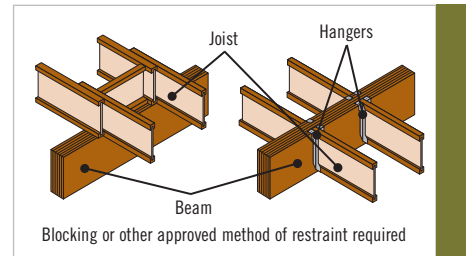
- Floor joist spans are approximately equal on each side of beam.
- Beam Span is valid for simple span beams and continuous, equal span beams.
- 3" bearing length is required at end supports.
- 6" bearing length is required at interior supports EXCEPT 7-1/2" bearing is required where **bold**.



FOR FLOOR JOISTS THAT ARE NOT CONTINUOUS (40 PSF LIVE, 15 PSF DEAD, 100%)												
Beam Span (ft)	Beam Width	Span Carried By Beam (ft)										
		20	22	24	26	28	30	32	34	36	38	40
6'	3-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
8'	3-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
10'	3-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	11-7/8"	11-7/8"	11-7/8"	11-7/8"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
12'	3-1/2"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	14"	14"	14"	14"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"
14'	3-1/2"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	16"	16"	16"
	5-1/4"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	14"	14"
16'	3-1/2"	14"	14"	14"	16"	16"	16"	16"	16"	-	-	-
	5-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"	14"	14"
18'	3-1/2"	16"	16"	16"	16"	-	-	-	-	-	-	-
	5-1/4"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"	16"

For floor joists that are NOT continuous over the beam:

- Floor joists either lap or butt on top of beam, or frame into beam with hangers.
- Beam Span is valid for simple span beams and continuous, equal span beams.
- 3" bearing length is required at end supports.
- 6" bearing length is required at interior supports EXCEPT 7-1/2" bearing is required where **bold**.



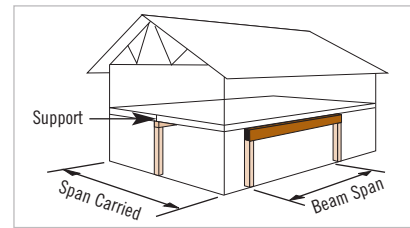
GENERAL NOTES:

1. Deflection criteria for quick reference tables: roofs: L/240 deflection limit for live load and L/180 for total load
floors: L/360 deflection limit for live load and L/240 for total load.
2. A deflection criteria of L/240 indicates the maximum deflection allowed for a 10'-0" span beam is $10 \times 12 / 240 = 1/2"$.
3. Deeper beams or an additional ply will increase beam stiffness and reduce deflection.
4. Beam Width can be either a single piece of LVL or built up from individual plies of LVL that are nailed and/or bolted together. Refer to page 13 of the Engineered Wood Product Guide for connection details.
5. Floor live loads have been reduced in accordance with the 2000/2003 IBC (ICC) section 1607.9.2, 1997 UBC (ICBO) section 1607.5, 1999 NBC (BOCA) section 1606.7 and 1999 SBC (SBCCI) section 1604.2.

Combined Header Quick Reference Tables

For combined roof and floor loads:

- For simple span headers only (headers with a support at each end).
- Roof loads include a 2' overhang.
- Loads include 100 pcf wall load.
- Interior support at mid-span of floor joists is required.
- Minimum bearing length is 3", 4-1/2" bearing length is required where **bold**.
- Read notes and instructions for quick reference tables on page 3.



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

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

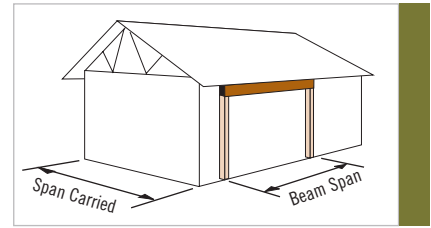
Beam Span (ft)	Beam Width	Span Carried By Beam (ft)											
		20	22	24	26	28	30	32	34	36	38	40	
6'	3-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
	5-1/4"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
8'	3-1/2"	9-1/2"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

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

Roof Header Quick Reference Tables

For roof loads:

- For simple span headers only (headers with a support at each end).
- Roof loads include a 2' overhang.
- Minimum bearing length is 3", 4-1/2" bearing length is required where **bold**.
- Read notes and instructions for quick reference tables on page 3.



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

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

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

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

Uniform Floor Load (PLF) Tables

How to use maximum uniform load tables:

1. Select the correct table for the beam application you need.
2. Choose the required beam span in the left column.
3. Select a beam depth from the tables that satisfies both the live and total load plf on the beam.
4. Check the bearing requirements as shown on page 2.

EXAMPLE:

Floor live load 480 PLF, L/360 deflection limit.
 Floor total load 660 PLF, L/240 deflection limit.
 Beam span 16'-0".

SOLUTION:

- Try 2-ply 1-3/4" x 14", which can carry:
- Live load $2 \times 246 = 492 > 480$ PLF ✓ OK
 - Total load $2 \times 342 = 684 > 660$ PLF ✓ OK

ALLOWABLE FLOOR LOADS (PLF) 100%												
Span (ft)	1-3/4" x 9-1/2"			1-3/4" x 11-7/8"			1-3/4" x 14"			1-3/4" x 16"		
	Live Load		Total Load	Live Load		Total Load	Live Load		Total Load	Live Load		Total Load
	L/480	L/360		L/480	L/360		L/480	L/360		L/480	L/360	
6			1062			1424			1794			2193
7	688		876			1160			1443			1741
8	461	615	670	900		978			1207			1442
9	323	431	528	632		807	1036		1037			1231
10	236	314	427	461	615	652	755		887			1074
11	177	236	350	346	462	538	567		732	847		939
12	136	182	268	266	355	451	437	583	614	652		788
13	107	143	210	209	279	383	344	458	522	513		670
14	86	114	167	168	224	330	275	367	449	411	548	576
15	69	93	135	136	182	267	223	298	390	334	445	501
16	57	76	110	112	150	219	184	246	342	275	367	439
17	48	64	91	93	125	181	153	205	300	229	306	388
18	40	53	76	79	105	152	129	172	252	193	257	345
19	34	45	64	67	89	128	110	146	213	164	219	309
20	-	-	-	57	76	109	94	125	181	141	188	274
21	-	-	-	49	66	93	81	108	156	121	162	235
22	-	-	-	43	57	80	70	94	134	105	141	203
23	-	-	-	37	50	69	62	82	117	92	123	177
24	-	-	-	33	44	60	54	72	102	81	108	155
25	-	-	-	-	-	-	48	64	89	72	96	136
26	-	-	-	-	-	-	43	57	79	64	85	120
27	-	-	-	-	-	-	38	51	69	57	76	106
28	-	-	-	-	-	-	34	45	61	51	68	94
29	-	-	-	-	-	-	30	41	54	46	61	84
30	-	-	-	-	-	-	-	-	-	41	55	75

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".

NOTES:

1. Span is defined as center-to-center of bearings and is valid for simple span and equal, multiple span conditions.
2. These loads assume full lateral bracing of the compression edge. Full support is considered to be a maximum unbraced length of 24".
3. The designer must check the Total Load column AND the appropriate Live Load column, either the L/480 or L/360 deflection limit. Live Load values that are blank are governed by Total Load. Do not use a product where designated "-" without further analysis by a professional engineer.
4. The Total Load columns are limited to a deflection of L/240 under Total Load and do not include the effects of long term loading (creep).
5. The Total Load columns have been adjusted to account for the self-weight of the beam.
6. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 2.
7. Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing spaced at most every 24" along the length of the beam. (Example: The marriage beam for each half of a manufactured home before the units are joined.)
8. The values in the table are for a single ply of 1-3/4" LVL. Double the values for 2-ply or 3-1/2" thickness. (Or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam.) Triple the values for 3-ply or 5-1/4" thickness. (Or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam.) Quadruple the values for 4-ply or 7" thickness. (Or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam.)
9. Values have NOT been evaluated for vibration.

ALLOWABLE ROOF LOADS (PLF)													
Span (ft)	1-3/4" x 9-1/2"			1-3/4" x 11-7/8"			1-3/4" x 14"			1-3/4" x 16"			
	Live Load	Total Load		Live Load	Total Load		Live Load	Total Load		Live Load	Total Load		
		Snow	Non-Snow		Snow	Non-Snow		Snow	Non-Snow		Snow	Non-Snow	
	L/240	115%	125%	L/240	115%	125%	L/240	115%	125%	L/240	115%	125%	
6		1223	1329		1638	1782		2065	2245		2523	2743	
7		1008	1097		1335	1451		1661	1806		2003	2178	
8		771	839		1126	1224		1389	1510		1660	1805	
9	647	608	662		929	1010		1193	1298		1417	1541	
10	472	492	535		751	817		1021	1111		1236	1344	
11	354	406	441		620	674		843	917		1081	1176	
12	273	340	359	533	520	565		707	769		907	987	
13	214	281	281	419	442	481		601	654		772	840	
14	172	224	224	336	380	414	550	517	563		664	723	
15	139	181	181	273	330	358	447	450	490		578	628	
16	115	149	149	225	290	294	369	394	429	550	507	551	
17	96	123	123	187	244	244	307	349	379	459	448	487	
18	80	103	103	158	204	204	259	310	338	386	398	434	
19	68	87	87	134	173	173	220	278	286	328	357	388	
20	59	73	73	115	147	147	188	244	244	282	321	350	
21	51	63	63	99	126	126	163	210	210	243	290	316	
22	-	-	-	86	109	109	141	182	182	211	264	274	
23	-	-	-	75	95	95	124	158	158	185	239	239	
24	-	-	-	66	83	83	109	138	138	163	209	209	
25	-	-	-	59	72	72	96	121	121	144	184	184	
26	-	-	-	52	64	64	86	107	107	128	163	163	
27	-	-	-	46	56	56	76	95	95	114	144	144	
28	-	-	-	-	-	-	68	84	84	102	129	129	
29	-	-	-	-	-	-	61	75	75	92	115	115	
30	-	-	-	-	-	-	55	67	67	83	103	103	

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

NOTES:

- Span is defined as center-to-center of bearings along the slope of the beam, and is valid for simple span and equal, multiple span conditions. For beams with a slope 2:12 or greater, the horizontal span must be multiplied by the appropriate slope adjustment factor from the table to the right.
- These loads assume full lateral bracing of the compression edge. Full support is considered to be a maximum unbraced length of 24".
- The designer must check the appropriate Total Load column and the Live Load L/240 column. To design for a Live Load deflection of L/360 or L/480, use the appropriate column from the Uniform Floor Load tables on page 6. Do not use a product where designated "-" without further analysis by a professional engineer.
- The Total Load columns are limited to a deflection of L/180 under Total Load and do not include the effects of long term loading (creep).
- The Total Load columns have been adjusted to account for the self-weight of the beam.
- The Total Load columns for Snow (115%) are for normal snow load designs. Check local code requirements for design snow loads and the appropriate load duration factor. Use the Total Load column from the Uniform Floor Load tables when the load duration factor is less than 115%.
- Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 2.
- Depths of 16" and greater should be used with a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing spaced at most every 24" along the length of the beam. (Example: The marriage beam for each half of a manufactured home before the units are joined.)
- The values in the table are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness. (Or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam.) Triple the values for 3-ply or 5-1/4" thickness. (Or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam.) Quadruple the values for 4-ply or 7" thickness. (Or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam.)
- Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 13 of the Engineered Wood Product Guide for connection details and limits on side-loaded members.

LP LVL 2400F_b-1.7E

LP LVL 2400F_b is available in:

- lengths up to 60'
- thicknesses of 1-3/4", 3-1/2", 5-1/4" and 7"
- available depths of 9-1/2", 11-7/8", 14" and 16"

In addition to the standard natural finish, a water-resistant coating called SiteCote™ is available for extra weather protection during construction.

Code Evaluation

LP Laminated Veneer Lumber has been evaluated for compliance with the major code evaluation services and many others. For the most current code reports contact your LP Engineered Wood Products distributor or visit www.lpcorp.com.

* Contact your local distributor for availability.

LP Engineered Wood Products are manufactured at different locations in the United States and Canada. Please verify availability with the LP Engineered Wood Products distributor in your area before specifying these products.

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

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