LP LVL 2650F_b-1.9E Technical Guide

This LP LVL guide (formerly Gang-Lam LVL) must be used in conjunction with the Engineered Wood Product Guide.

LP® LVL

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
2650F_b-1.9E	2650	1.9	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 valid for the following LVL species:

LVL – Southern Yellow Pine

LVL W – Douglas Fir-Larch or Western Hemlock, separately or mixed

LVL L – Lodgepole Pine

LVL LW – Lodgepole Pine and Douglas Fir mixed

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

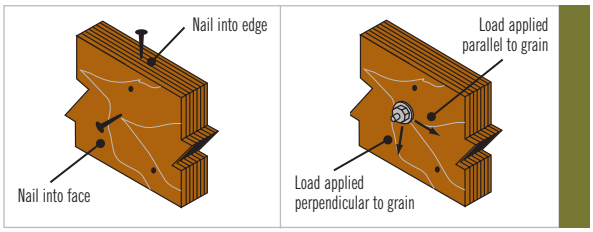
Depth	Weight (lb/ft)			Allowable Moment (lb-ft)			Allowable Shear (lb)			Moment of Inertia (in^4)		
	1-3/4"	3-1/2"	5-1/4"	1-3/4"	3-1/2"	5-1/4"	1-3/4"	3-1/2"	5-1/4"	1-3/4"	3-1/2"	5-1/4"
7-1/4"	3.6	7.3	10.9	3580	7161	10741	2411	4821	7232	55	111	167
9-1/2"	4.8	9.5	14.3	5966	11932	17898	3159	6318	9476	125	250	375
11-7/8"	5.9	11.9	17.8	9093	18187	27280	3948	7897	11845	244	488	733
14"	7.0	14.0	21.0	12349	24699	37048	4655	9310	13965	400	800	1201
16"	8.0	16.0	24.0	15825	31650	47475	5320	10640	15960	597	1195	1792
18"	9.0	18.0	27.0	19694	39389	59083	5985	11970	17955	851	1701	2552

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 (ICC-ES Report ESR-1254) for species-specific information on the equivalent specific gravity for design of nail and bolt connections. ICC ES evaluation reports can be obtained online at www.iccsafe.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

NOTES:

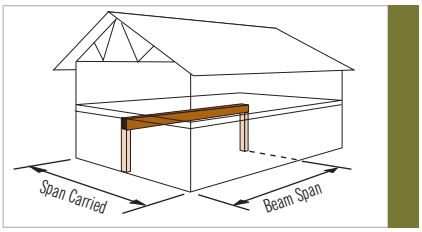
1. Tabulated values are based on the allowable compression stress, perpendicular to grain, of the LVL. This is suitable for beams bearing on steel or the end grain of studs.
2. Make sure the support is structurally adequate to carry the reaction. Compressive strength parallel to grain of studs may require 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.

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 14" or 5-1/4" x 11-7/8".

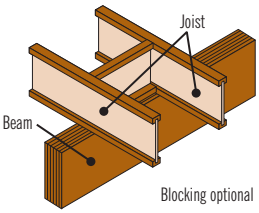


FOR FLOOR JOISTS THAT ARE CONTINUOUS (ONE PIECE) (40 PSF LIVE, 15 PSF DEAD, 100%)

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

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**.

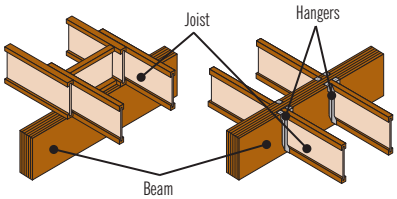


FOR FLOOR JOISTS THAT ARE NOT CONTINUOUS (40 PSF LIVE, 15 PSF DEAD, 100%)

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

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**.



Blocking or other approved method of restraint required

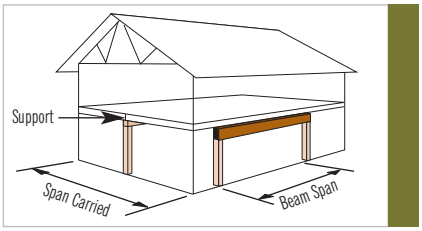
GENERAL NOTES:

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 x 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 plf 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.



ROOF: 20 PSF LIVE, 15 PSF DEAD
115% SNOW - 125% NON-SNOW
FLOOR: 40 PSF LIVE, 15 DEAD

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"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
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"
	5-1/4"	7-1/4"	7-1/4"	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	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	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"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
14	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"
16	3-1/2"	14"	16"	16"	16"	**16"**	**16"**	**18"**	**18"**	**18"**	**18"**	-
	5-1/4"	14"	14"	14"	14"	14"	14"	14"	14"	16"	16"	16"

ROOF: 25 PSF LIVE, 15 PSF DEAD
115% SNOW
FLOOR: 40 PSF LIVE, 15 DEAD

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"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
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"
	5-1/4"	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	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"	9-1/4"	9-1/2"	9-1/2"
12	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"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-1/4"	11-7/8"
14	3-1/2"	14"	14"	14"	14"	14"	**16"**	**16"**	**16"**	**16"**	**16"**	**18"**
	5-1/4"	11-1/4"	11-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	14"
16	3-1/2"	16"	16"	**16"**	**16"**	**18"**	**18"**	**18"**	**18"**	**18"**	-	-
	5-1/4"	14"	14"	14"	14"	14"	14"	16"	16"	16"	16"	16"

ROOF: 30 PSF LIVE, 15 PSF DEAD
115% SNOW
FLOOR: 40 PSF LIVE, 15 DEAD

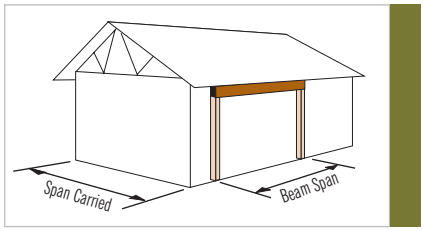
Beam Span (ft)	Beam Width	Span Carried By Beam (ft)										
		20	22	24	26	28	30	32	34	36	38	40
6	3-1/2"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
	5-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"	7-1/4"
8	3-1/2"	7-1/4"	9-1/4"	9-1/4"	9-1/4"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

ROOF: 40 PSF LIVE, 15 PSF DEAD
115% SNOW
FLOOR: 40 PSF LIVE, 15 DEAD

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"	7-1/4"	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"	7-1/4"	7-1/4"	7-1/4"	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	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"	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	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"**	**14"**	**14"**	**14"**
	5-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/4"	9-1/2"	9-1/2"	11-1/4"	11-1/4"	11-1/4"	11-1/4"
12	3-1/2"	11-7/8"	11-7/8"	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"	11-1/4"	11-7/8"	11-7/8"	11-7/8"	14"	14"
14	3-1/2"	14"	14"	**16"**	**16"**	**16"**	**16"**	**18"**	**18"**	**18"**	**18"**	-
	5-1/4"	11-7/8"	11-7/8"	14"	14"	14"	14"	14"	14"	**14"**	**16"**	**16"**
16	3-1/2"	**16"**	**16"**	**18"**	**18"**	**18"**	-	-	-	-	-	-
	5-1/4"	14"	14"	14"	16"	16"	16"	**16"**	**16"**	**18"**	**18"**	**18"**

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.



ROOF: 20 PSF LIVE
15 PSF DEAD
115% SNOW OR 125% NON-SNOW

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

ROOF: 25 PSF LIVE
15 PSF DEAD
115% SNOW

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

ROOF: 30 PSF LIVE
15 PSF DEAD
115% SNOW

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

ROOF: 40 PSF LIVE
15 PSF DEAD
115% SNOW

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

SOLUTION:

Try 2-ply 1-3/4" x 11-7/8", which can carry:

- Live load 2 x 250 = 500 > 480 PLF ✔ OK
- Total load 2 x 365 = 730 > 660 PLF ✔ OK

ALLOWABLE FLOOR LOADS (PLF) 100%

Span (ft)	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"		
	Live Load		Total	Live Load		Total	Live Load		Total	Live Load		Total
	L/480	L/360	Load	L/480	L/360	Load	L/480	L/360	Load	L/480	L/360	Load
6	543	724	762			1027			1062			1324
7	342	456	580	710		848	769		876			1082
8	229	305	443	475	634	704	515	687	740	856		915
9	160	214	318	334	445	555	362	482	584	601		792
10	117	156	231	243	324	449	263	351	472	438	584	651
11	88	117	172	183	244	361	198	264	389	329	439	537
12	67	90	132	141	188	277	152	203	300	253	338	450
13	53	71	103	110	147	217	120	160	235	199	266	383
14	42	57	81	88	118	172	96	128	187	159	213	313
15	34	46	65	72	96	139	78	104	151	129	173	254
16	-	-	-	59	79	114	64	85	124	107	142	208
17	-	-	-	49	66	94	53	71	102	89	118	172
18	-	-	-	41	55	78	45	60	85	75	100	144
19	-	-	-	35	47	66	38	51	72	63	85	122
20	-	-	-	30	40	56	32	43	61	54	73	103
21	-	-	-	-	-	-	-	-	-	47	63	89
22	-	-	-	-	-	-	-	-	-	41	54	76
23	-	-	-	-	-	-	-	-	-	36	48	66
24	-	-	-	-	-	-	-	-	-	31	42	57

Span (ft)	1-3/4" x 11-7/8"			1-3/4" x 14"			1-3/4" x 16"			1-3/4" x 18"		
	Live Load		Total	Live Load		Total	Live Load		Total	Live Load		Total
	L/480	L/360	Load	L/480	L/360	Load	L/480	L/360	Load	L/480	L/360	Load
6			1424			1794			2193			2650
7			1160			1443			1741			2072
8			978			1207			1442			1700
9	707		845			1037			1231			1441
10	515	687	721	844		908			1074			1250
11	387	516	595	634		808	947		951			1104
12	298	397	499	488	651	679	729		854			988
13	234	312	424	384	512	577	573		741	817		894
14	187	250	365	307	410	497	459	612	637	654		794
15	152	203	299	250	333	432	373	498	554	532		691
16	125	167	245	206	274	378	307	410	486	438	584	606
17	104	139	203	171	229	334	256	342	430	365	487	536
18	88	117	170	144	193	282	216	288	382	307	410	477
19	75	100	144	123	164	239	183	245	342	261	349	427
20	64	85	122	105	140	204	157	210	307	224	299	384
21	55	74	105	91	121	175	136	181	264	193	258	348
22	48	64	90	79	105	151	118	157	228	168	224	316
23	42	56	78	69	92	131	103	138	199	147	196	286
24	37	49	68	61	81	115	91	121	174	129	173	250
25	32	43	60	54	72	101	80	107	153	114	153	220
26	-	-	-	48	64	89	71	95	135	102	136	195
27	-	-	-	42	57	78	64	85	120	91	121	173
28	-	-	-	38	51	69	57	76	106	81	109	154
29	-	-	-	34	46	62	51	68	95	73	98	138
30	-	-	-	31	41	55	46	62	85	66	88	123

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.

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".

ALLOWABLE ROOF LOADS (PLF)

Span (ft)	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"		
	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		877	954		1182	1285		1223	1329		1523	1656
7	684	668	727		976	1062		1008	1097		1245	1354
8	458	511	555		810	881		852	927		1053	1145
9	321	403	425	668	639	695	724	672	731		912	991
10	234	309	309	487	517	562	527	544	591		749	815
11	176	231	231	366	426	464	396	448	488	658	618	672
12	135	177	177	282	357	371	305	376	402	507	518	564
13	106	138	138	221	291	291	240	315	315	399	441	480
14	85	110	110	177	232	232	192	251	251	319	379	413
15	69	89	89	144	187	187	156	203	203	259	330	340
16	57	72	72	118	154	154	128	167	167	214	279	279
17	47	60	60	99	127	127	107	138	138	178	232	232
18	-	-	-	83	106	106	90	115	115	150	194	194
19	-	-	-	71	90	90	76	97	97	127	164	164
20	-	-	-	60	76	76	65	83	83	109	140	140
21	-	-	-	52	65	65	57	71	71	94	120	120
22	-	-	-	45	56	56	49	61	61	82	104	104
23	-	-	-	-	-	-	-	-	-	72	90	90
24	-	-	-	-	-	-	-	-	-	63	78	78

Span (ft)	1-3/4" x 11-7/8"			1-3/4" x 14"			1-3/4" x 16"			1-3/4" x 18"		
	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		1638	1782		2065	2245		2523	2743		3049	3315
7		1335	1451		1661	1806		2003	2178		2384	2593
8		1126	1224		1389	1510		1660	1805		1957	2128
9		973	1058		1193	1298		1417	1541		1659	1804
10		830	903		1046	1137		1236	1344		1439	1565
11		685	745		930	1012		1095	1191		1271	1382
12	596	575	625		781	850		984	1070		1138	1237
13	469	489	532		665	723		853	928		1029	1120
14	375	420	458	615	572	623		734	799		915	995
15	305	365	398	500	497	541		639	695		796	866
16	251	320	329	412	436	475		560	610		698	760
17	209	273	273	343	386	420	513	495	539		617	672
18	176	229	229	289	343	374	432	441	480		550	598
19	150	194	194	246	307	321	367	395	430	523	492	536
20	128	165	165	211	274	274	315	355	387	448	443	483
21	111	142	142	182	236	236	272	322	350	387	401	437
22	96	123	123	158	204	204	236	292	307	337	365	397
23	84	107	107	138	178	178	207	267	268	295	333	363
24	74	93	93	122	155	155	182	235	235	259	305	332
25	65	82	82	108	137	137	161	207	207	229	280	297
26	58	72	72	96	121	121	143	183	183	204	259	263
27	52	63	63	85	107	107	128	162	162	182	234	234
28	46	56	56	76	95	95	114	145	145	163	209	209
29	-	-	-	69	85	85	103	129	129	147	187	187
30	-	-	-	62	76	76	93	116	116	133	168	168

NOTES:

1. 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.
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 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.
4. 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).
5. The Total Load columns have been adjusted to account for the self-weight of the beam.
6. 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%.
7. Proper bearing must be provided. Bearing length must be checked for support reactions with the table on page 2.
8. 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.)
9. 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.)
10. 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.

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

LP LVL 2650F$_b$-1.9E

LP LVL 2650F$_b$ is available in:

- lengths up to 60'
- thicknesses of 1-1/2"* and 1-3/4"
- billet thicknesses of 3-1/2", 5-1/1/4" and 7"
- available depths of 7-1/4", 9-1/2", 11-7/8", 14", 16", 18", 20", 22" and 23-7/8".*

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 **1.800.999.9105** or e-mail **customer.support@lpcorp.com**. Visit our web site at **www.lpcorp.com**.

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