Synergy between
ENGINEERING & SUSTAINABILITY

VMG LIGNUM



MADE FOR U.S. MARKET

VMG LIGNUM LVL

2.0E & 1.4E Grades

vmg-lignum.eu

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START HERE

FIND THE RIGHT TABLE

This guide organizes the published VMG LIGNUM LVL engineering data by application and load duration. Select the loading condition, then review the applicable grade, ply count, thickness and clear span.

01 | DESIGN BASIS

Allowable load notes, design values, support conditions and beam orientation. See pages 3–4.

02 | FLOOR LOADS

100% load duration. Floor live-load deflection criterion: L/360. See pages 5–7.

03 | ROOF LOADS

115% load duration. Snow-load deflection criterion: L/240. See pages 8–10.

SNOW LOADS

125% load duration. Roof tables continue in the complete publication.

04 | WALL FRAMING

IMPORTANT

The original tabulated values and technical notes govern. This ten-page sample demonstrates the proposed editorial system; it is not a replacement for the complete engineering publication

VMG LIGNUM LVL –

PRODUCT HANDLING AND STORAGE GUIDELINES



VMG Lignum LVL, like all engineered wood products, must be transported, handled and stored correctly to maintain its structural performance, dimensional stability and product quality.

01 | DELIVERY INSPECTION

Upon delivery, all products must be inspected before unloading or as soon as practically possible.

- Inspect all packages for quantity, identification and visible transport damage.
- Verify that product stamps, labels and package information match the delivery documents.
- Record any visible damage, missing units or delivery discrepancies on the transport documents.
- If visible damage is detected, it should be reported to VMG Lignum construction without delay.
- Damaged or questionable products should not be used for structural applications before further assessment.

02 | TRANSPORTATION AND UNLOADING

VMG Lignum LVL must be protected from damage and moisture during transport, unloading and handling.

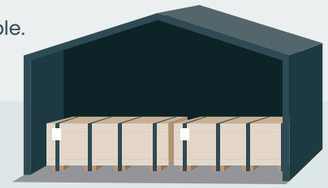
- Protect LVL from rain, snow, standing water and splash water during transport and unloading.
- Use covered transport or suitable weatherproof protection whenever possible.
- Use approved lifting slings or forklift equipment suitable for the package weight and dimensions.
- Chains or steel cables must not come into direct contact with the product.
- Use sufficiently wide forklift forks to avoid damage to edges and surfaces.
- Do not push, drag, drop, impact or excessively bend LVL elements during handling.
- When lifting multiple packs, ensure that the equipment is stable and suitable for the total load.



03 | STORAGE REQUIREMENTS

Correct storage is essential to maintain the dimensional stability and quality of VMG Lignum LVL.

- Store products flat on a level, dry and load-bearing surface.
- Do not store LVL directly on the ground.
- Keep packages at least 300 mm above ground on suitable bearers.
- Protect products from direct contact with water, snow and prolonged sunlight exposure.
- Use bearers, battens or spacers to support packages evenly.
- Align bearers and spacers vertically between stacked packs to prevent twisting, bending or deformation.
- Keep packaging intact until installation whenever possible.
- Do not store heavy materials on top of LVL packages.



04 | VENTILATION AND WEATHER PROTECTION

Stored LVL must be protected from weather while allowing sufficient air circulation.

- Ensure adequate ventilation around stored products.
- When stored outdoors temporarily, cover packages with a waterproof protective cover.
- Protective covers must allow air circulation to reduce the risk of condensation.
- If products are wrapped, open the underside of the packaging where appropriate to allow moisture to escape.
- For longer outdoor storage, inspect the condition of the protective cover and the products regularly.
- Replace or repair damaged covers immediately.

05 | HANDLING ON SITE



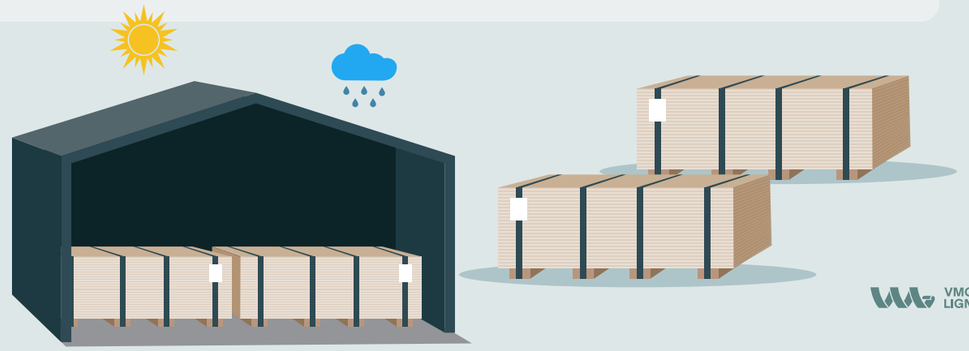
VMG Lignum LVL should be handled with care at all stages of use.

- Wear suitable gloves when handling individual parts.
- Avoid damage to edges, corners and surfaces.
- Do not drag or drop individual LVL pieces.
- Do not walk on unstable, wet or slippery packaging.
- Use conventional woodworking tools for cutting, drilling and fastening.
- Follow project-specific structural design and installation requirements.

06 | MOISTURE EXPOSURE

Excessive moisture exposure may affect the appearance, dimensions and performance of LVL products.

- If products become wet, move them to a dry and well-ventilated area.
- Allow wet products to dry before installation.
- Avoid rapid or uneven drying conditions.
- Excessive moisture exposure may cause swelling, dimensional changes, staining or mould growth. Any mould present on the product must be removed immediately by sanding or by
- applying an appropriate fungicidal treatment before installation.
- Do not install damaged, deformed or structurally compromised products.
- If there is any doubt about product suitability, contact VMG Lignum before use.



MAXIMUM ALLOWABLE LOADS

Design assumptions and limitations

MAXIMUM ALLOWABLE UNIFORM LOAD TABLE NOTES

1. Allowable load tables are for single or multiple span beams with uniformly distributed loads based on the reference design values listed in ESR-5621 Table 1 (below). Clear spans are tabulated. The design span assumed in the table calculations is the clear span plus half the required bearing length on each end.
2. For multiple span beams, use the largest clear span. Other spans along the multiple span beam must be at least half of the largest span.
3. Continuous lateral restraint must be provided at the top edge of the beam. For multiple span beams, the bottom of the beam is assumed to be sufficiently braced to assume no reduction in strength for lateral stability. Lateral restraint is required at the supports to prevent rotation of the beam.
4. The Floor L/360 values on the 100% load duration tables are maximum live loads to meet the span based live load deflection criteria. Snow or Roof L/240 values on the 115% or 125% load duration tables are similar. The Total Load values are the maximum total allowable stress design (ASD) load for bending, shear, and total load deflection. Total load values have been reduced to account for the self-weight of the beam. A total load deflection limit of L/240 has been assumed for floor loads and L/180 for roof/snow load. Creep has not been considered.
5. The Req Brg values are the minimum required end/interior bearing lengths. Interior bearing is only applicable at interior supports along continuous, multiple span beams. Required bearing is based on 425 psi compression perpendicular to grain strength of a Spruce-Pine-Fir (SPF) wood plate with a bearing area factor, Cb, assuming the plate end is more than 3" away from the beam. For LVL grade 2.0E bearing on steel or other substrates where required bearing length is controlled by the LVL compression perpendicular to grain strength, the bearing lengths are shown in addition to the SPF plate bearing requirements. For the LVL grade 1.4E, the required bearing length does not change for substrates other than a SPF wood plate.
6. Ten year load duration (CD = 1.0) is assumed for floors with occupancy live loads, two month duration (CD = 1.15) is assumed for roofs with snow load, and seven day duration (CD = 1.25) is assumed for roof live load.
7. Dry conditions and sustained temperatures below 100°F have been assumed.
8. Table uniform load cells with no value (--) are less than 10 plf.

HOW TO USE THE TABLES

HOW TO USE MAXIMUM ALLOWABLE UNIFORM LOAD TABLES

1. Determine bearing condition at the supports. The clear span is the distance between the interior edges of the supports.
2. Calculate the applied uniform live/roof/snow load and total load on the beam using the appropriate ASD load combination (e.g., 1.0D + 1.0L). Determine the applicable live/roof/snow deflection criteria.
3. Use the span table for the appropriate live load type (floor, roof, or snow) and select a beam with tabulated maximum allowable loads that exceed the applied live load and total load. Confirm the available bearing length meets the tabulated minimum required bearing. The beam must satisfy all maximum uniform load requirements and have the minimum required bearing length to be adequate.

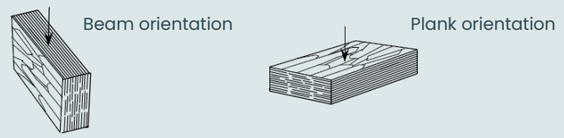


Figure 1 – an illustration of beam and plank orientation as noted in table1

Table 1-reference design values for VMG LIGNUM LVL[1,2]

BEAM ORIENTATION[3]					PLANK ORIENTATION[3]					AXIAL	
Modulus of elasticity		Bending[7,8] F_b (psi)	Shear F_v (psi)	Compression Perp-to-Grain $F_{c\perp}$[10] (psi)	Modulus of elasticity		Bending F_b (psi)	Shear F_v (psi)	Compression Perp-to-Grain $F_{c\perp}$[10] (psi)	Compression F_c (psi)	Tension F_t[9] (psi)
E_{true}[4] (x10[6] psi)	$E_{apparent}$[5,6] (x10[6] psi)				E_{true}[4] (x10[6] psi)	$E_{apparent}$[5,6] (x10[6] psi)					
1.4	1.3	1.850	250	550	1.4	1.3	2.200	150	300	2.300	1.600
2.0	1.9	3.050	350	700	2.0	1.9	3.300	150	380	3.000	2.700

For SI: 1 inch = 25.4 mm, 1 psi = 6894.8 Pa

[1] The tabulated values are design values for normal duration of load and must be adjusted by the applicable adjustment factors in accordance with Section 8.3 of the 2024 and 2018 NDS. Modulus of elasticity and compression perpendicular-to-grain must not be adjusted for duration of load.

[2] The tabulated values are limited to dry interior conditions where the average moisture content in lumber is less than 16 percent.

[3] Refer to Figure 1 for LVL orientations.

[4] Reference E_{true} values are the shear-free modulus of elasticity, which do not include the effects of the shear deformation. When calculating the total deflection, both bending and shear deformations must be included. Equations for various span and load conditions are available in engineering references.

[5] Reference $E_{apparent}$ values are the apparent modulus of elasticity, which include the effects of shear deformation. When calculating the total deflection, standard engineering formulae for the pure bending deflection is sufficient.

[6] Reference modulus of elasticity, E_{min}, used for beam stability calculations, must be calculated using the tabulated $E_{apparent}$ in accordance with Appendix D of the 2024 and 2018 NDS. The COV_E may be taken as 0.10 when calculating E_{min}.

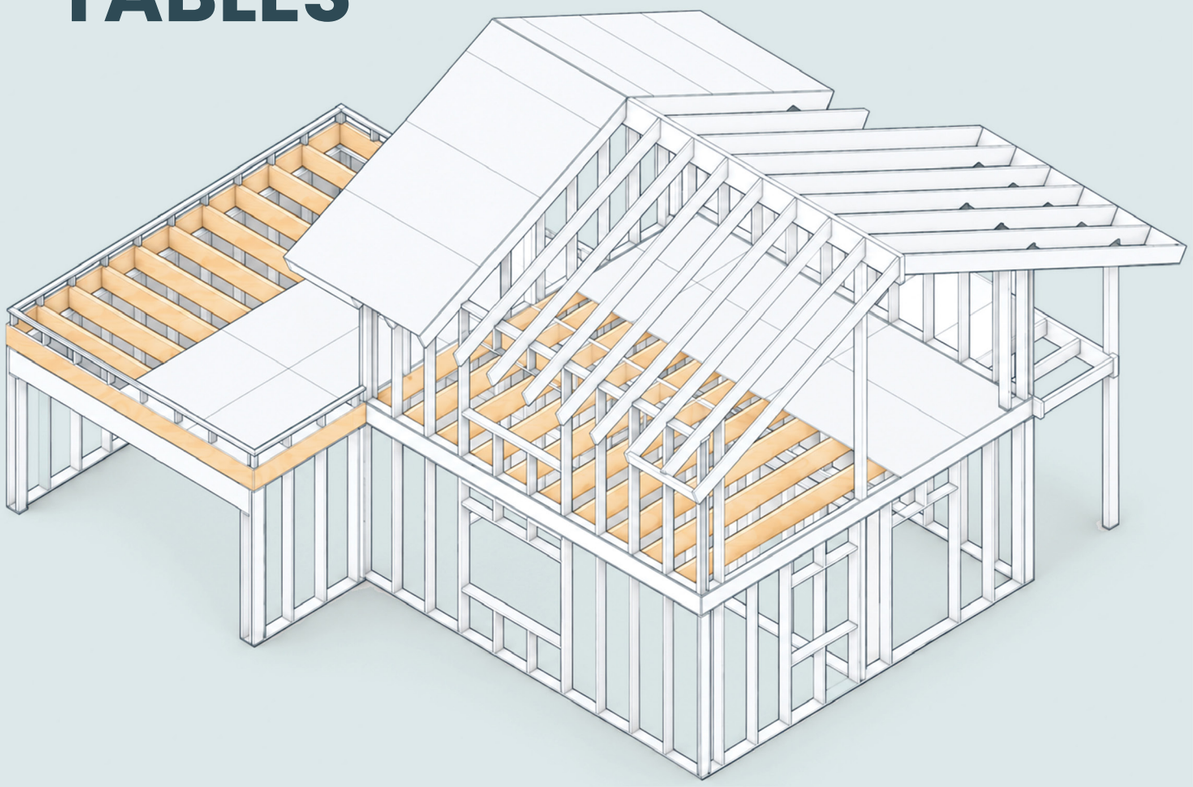
[7] Reference bending design value in the beam orientation, F_b, may be increased by 4% when the member qualifies as a repetitive member, in accordance with Section 8.3.7 of the 2024 and 2018 NDS.

[8] Reference bending design value in beam orientation is based on a reference depth of 12 inches. For other depths, the allowable bending stress, F_b, must be adjusted by multiplying F_b by $(12/d)^{0.15}$, where d is depth member in inches. For depths 3½ inches or less, multiply F_b by 1.203.

[9] Reference tension design values, F_t, are assigned for a standard length of 36 inches. For lengths longer than 36 inches, multiply F_t by $(36/L)^{0.09}$, where L is the length in inches. For lengths less than 36 inches, use the reference tension design value given in the table above.

[10] The bearing area factor, C_b, is permitted to be applied to the reference compression perpendicular-to-grain design values, $F_{c\perp}$, in accordance with the 2024 and 2018 NDS.

FLOOR LOAD TABLES



100% LOAD DURATION

Floor load tables provide maximum allowable uniformly distributed loads for LVL members, including floor live-load deflection and total load checks.

FLOOR L/360

Maximum floor live load based on the span-related live-load deflection criterion.

TOTAL LOAD + BEARING

Verify total allowable load and required bearing lengths using the table notes.

FLOOR LOADS

2.0E LVL | 1 PLY | 1.5 IN

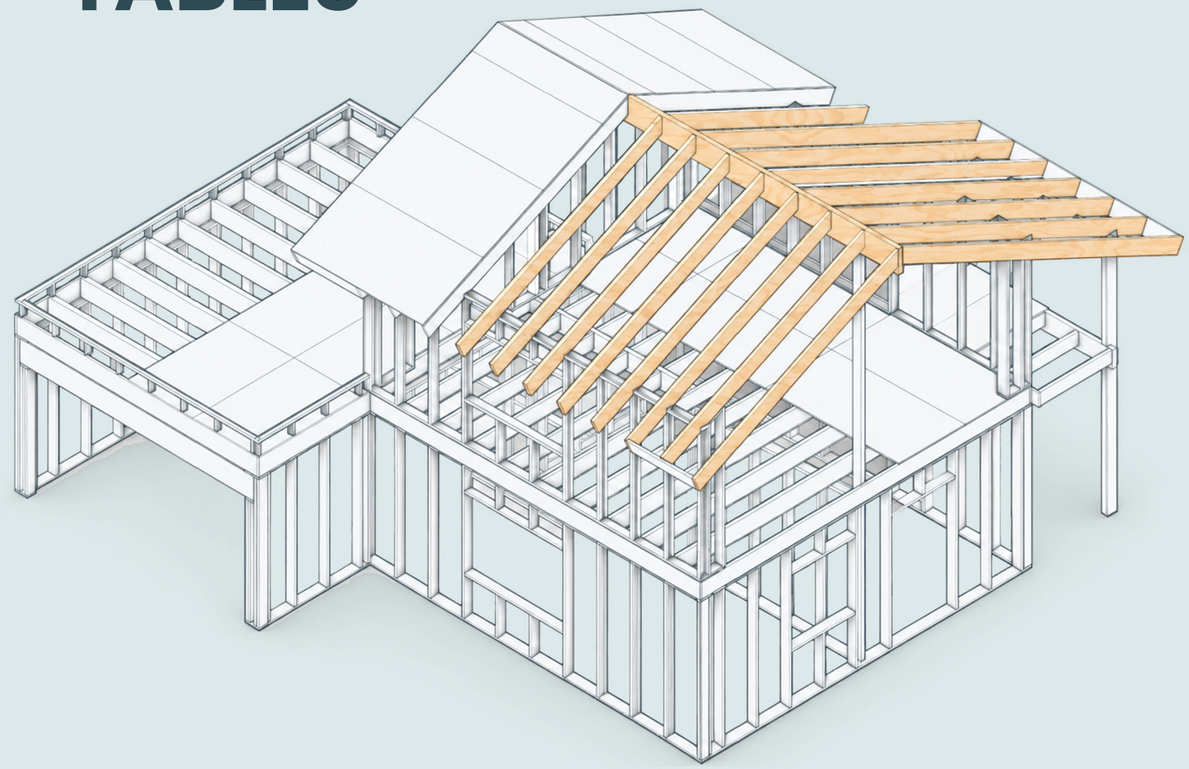
Clear span (ft)		VMG LIGNUM 2.0E LVL, 1 Ply, 1.5" Thickness												
		Depth (in)												
		3.5	5.5	7.25	9.25	9.5	11.25	11.875	14	16	18	20	22	24
4	Floor L/360	223	772	1503	2149	2225	2272	2272	2271	2270	2270	2269	2268	2267
	Total Load	333	962	1503	2149	2225	2272	2272	2271	2270	2270	2269	2268	2267
	Req Brg (in) SPF	1.5 / 2.3	2.8 / 7	4.5 / 11.3	7 / 17.5	7.4 / 18.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.7	2.1 / 5.3	3.4 / 8.5	5.3 / 13.3	5.6 / 14	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
5	Floor L/360	117	420	896	1505	1567	1908	1908	1907	1906	1905	1905	1904	1903
	Total Load	174	628	1020	1505	1567	1908	1908	1907	1906	1905	1905	1904	1903
	Req Brg (in) SPF	1.5 / 1.5	2.2 / 5.5	3.7 / 9.3	5.7 / 14.3	6 / 15	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.7 / 4.2	2.8 / 7	4.3 / 10.8	4.6 / 11.4	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
6	Floor L/360	69	255	547	1062	1142	1502	1631	1643	1642	1642	1641	1640	1639
	Total Load	102	380	733	1100	1150	1502	1631	1643	1642	1642	1641	1640	1639
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 3.8	3.1 / 7.8	4.8 / 12	5 / 12.5	6.8 / 17	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 2.8	2.4 / 5.9	3.6 / 9.1	3.8 / 9.5	5.2 / 12.9	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
7	Floor L/360	44	164	358	704	757	1156	1258	1443	1443	1442	1441	1440	1439
	Total Load	64	243	534	835	874	1156	1258	1443	1443	1442	1441	1440	1439
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 3	2.5 / 6.3	4.1 / 10.3	4.3 / 10.8	5.8 / 14.5	6.5 / 16.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 2.3	1.9 / 4.7	3.1 / 7.8	3.3 / 8.2	4.4 / 11	4.9 / 12.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
8	Floor L/360	29	111	246	487	524	838	968	1287	1286	1285	1284	1284	1283
	Total Load	42	165	366	653	683	911	995	1287	1286	1285	1284	1284	1283
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 2.3	2 / 5	3.6 / 9	3.8 / 9.5	5.1 / 12.8	5.7 / 14.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.7	1.5 / 3.8	2.7 / 6.8	2.9 / 7.2	3.9 / 9.7	4.3 / 10.8	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
9	Floor L/360	21	79	176	350	377	606	706	1058	1160	1159	1158	1157	1157
	Total Load	29	116	261	521	548	733	805	1058	1160	1159	1158	1157	1157
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.8	1.6 / 4	3.2 / 8	3.4 / 8.5	4.6 / 11.5	5 / 12.5	6.8 / 17	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 3	2.4 / 6.1	2.6 / 6.5	3.5 / 8.7	3.8 / 9.5	5.2 / 12.9	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
10	Floor L/360	15	58	130	261	282	453	528	832	1056	1055	1055	1054	1053
	Total Load	21	84	192	388	418	603	662	876	1056	1055	1055	1054	1053
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 3.3	2.6 / 6.5	2.8 / 7	4.1 / 10.3	4.5 / 11.3	6.1 / 15.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	2 / 4.9	2.1 / 5.3	3.1 / 7.8	3.4 / 8.5	4.6 / 11.6	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
11	Floor L/360	11	43	98	199	215	346	404	640	921	969	968	967	966
	Total Load	16	63	145	295	318	503	553	735	921	969	968	967	966
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.8	2.2 / 5.5	2.4 / 6	3.8 / 9.5	4.1 / 10.3	5.6 / 14	7.1 / 17.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 2.1	1.7 / 4.2	1.8 / 4.6	2.9 / 7.2	3.1 / 7.8	4.3 / 10.6	5.4 / 13.5	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
12	Floor L/360	--	34	76	155	168	271	315	503	729	895	894	893	893
	Total Load	--	48	111	229	247	402	468	625	785	895	894	893	893
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.8 / 4.5	2 / 5	3.3 / 8.3	3.8 / 9.5	5.1 / 12.8	6.6 / 16.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 3.4	1.5 / 3.8	2.5 / 6.3	2.9 / 7.2	3.9 / 9.7	5 / 12.5	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
13	Floor L/360	--	26	60	123	133	216	252	402	585	811	831	830	829
	Total Load	--	37	87	181	196	320	373	537	677	828	831	830	829
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.6 / 4	1.7 / 4.3	2.8 / 7	3.3 / 8.3	4.7 / 11.8	6.1 / 15.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3	1.5 / 3.2	2.1 / 5.3	2.5 / 6.3	3.6 / 8.9	4.6 / 11.6	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
14	Floor L/360	--	21	48	99	107	175	204	326	476	662	776	775	774
	Total Load	--	30	70	145	157	258	302	466	589	722	776	775	774
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 3.5	1.5 / 3.8	2.4 / 6	2.8 / 7	4.4 / 11	5.6 / 14	7 / 17.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.7	1.5 / 2.8	1.8 / 4.6	2.1 / 5.3	3.3 / 8.3	4.3 / 10.6	5.3 / 13.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2

FLOOR LOADS

2.0E LVL | 1 PLY | 1.5 IN

Clear span (ft)		VMG LIGNUM 2.0E LVL, 1 Ply, 1.5” Thickness												
		Depth (in)												
		3.5	5.5	7.25	9.25	9.5	11.25	11.875	14	16	18	20	22	24
15	Floor L/360	--	17	39	81	87	143	168	268	391	547	728	727	726
	Total Load	--	24	56	118	127	211	247	396	516	635	728	727	726
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3	1.5 / 3.3	2.1 / 5.3	2.5 / 6.3	4 / 10	5.3 / 13.3	6.5 / 16.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 2.5	1.6 / 4	1.9 / 4.7	3 / 7.6	4 / 10.1	4.9 / 12.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
16	Floor L/360	--	14	32	67	72	119	139	223	326	456	614	684	683
	Total Load	--	19	46	97	105	174	204	329	457	562	674	684	683
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.8	1.5 / 3	1.9 / 4.8	2.2 / 5.5	3.5 / 8.8	4.9 / 12.3	6.1 / 15.3	7.4 / 18.5	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.1	1.5 / 2.3	1.5 / 3.6	1.7 / 4.2	2.7 / 6.6	3.7 / 9.3	4.6 / 11.6	5.6 / 14	5.7 / 14.2	5.7 / 14.2
17	Floor L/360	--	12	27	56	61	99	116	188	274	384	518	646	645
	Total Load	--	16	38	80	87	145	170	276	405	500	601	646	645
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 2.5	1.7 / 4.3	2 / 5	3.1 / 7.8	4.6 / 11.5	5.8 / 14.5	7 / 17.5	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 1.9	1.5 / 3.2	1.5 / 3.8	2.4 / 5.9	3.5 / 8.7	4.4 / 11	5.3 / 13.3	5.7 / 14.2	5.7 / 14.2
18	Floor L/360	--	10	23	47	51	84	99	159	233	327	441	580	611
	Total Load	--	13	31	67	73	122	143	233	344	448	539	612	611
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 2.3	1.5 / 3.8	1.7 / 4.3	2.8 / 7	4.2 / 10.5	5.4 / 13.5	6.6 / 16.5	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 1.7	1.5 / 2.8	1.5 / 3.2	2.1 / 5.3	3.2 / 8	4.1 / 10.2	5 / 12.5	5.7 / 14.2	5.7 / 14.2
19	Floor L/360	--	--	19	40	44	72	84	136	200	280	378	496	581
	Total Load	--	--	26	57	62	103	121	199	294	403	486	575	581
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.5 / 2	1.5 / 3.3	1.6 / 4	2.5 / 6.3	3.7 / 9.3	5.2 / 13	6.3 / 15.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 3	1.9 / 4.7	2.8 / 7	3.9 / 9.9	4.8 / 12	5.7 / 14.2	5.7 / 14.2
20	Floor L/360	--	--	17	35	37	62	72	117	173	242	327	429	553
	Total Load	--	--	22	48	52	88	104	170	253	355	440	521	553
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 2	1.5 / 3	1.5 / 3.5	2.3 / 5.8	3.4 / 8.5	4.8 / 12	6 / 15	7.1 / 17.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 2.7	1.7 / 4.4	2.6 / 6.5	3.6 / 9.1	4.6 / 11.4	5.4 / 13.5	5.7 / 14.2
22	Floor L/360	--	--	13	26	28	47	55	89	131	184	249	327	420
	Total Load	--	--	16	35	38	65	77	128	190	269	365	433	505
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 3	1.9 / 4.8	2.8 / 7	4 / 10	5.4 / 13.5	6.5 / 16.3	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 2.3	1.5 / 3.6	2.1 / 5.3	3 / 7.6	4.1 / 10.2	4.9 / 12.3	5.7 / 14.2
24	Floor L/360	--	--	--	20	22	36	42	69	102	143	194	255	328
	Total Load	--	--	--	26	29	49	59	97	146	208	283	366	427
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 2.5	1.6 / 4	2.4 / 6	3.4 / 8.5	4.6 / 11.5	5.9 / 14.8	6.9 / 17.3
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 1.9	1.5 / 3	1.8 / 4.6	2.6 / 6.5	3.5 / 8.7	4.5 / 11.2	5.2 / 13.1
26	Floor L/360	--	--	--	16	17	28	33	54	80	114	154	203	260
	Total Load	--	--	--	20	22	38	45	76	114	163	224	296	365
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 2.3	1.5 / 3.5	2 / 5	2.9 / 7.3	3.9 / 9.8	5.2 / 13	6.4 / 16
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 2.7	1.5 / 3.8	2.2 / 5.5	3 / 7.4	3.9 / 9.9	4.9 / 12.1
28	Floor L/360	--	--	--	13	14	23	27	44	65	91	124	164	210
	Total Load	--	--	--	15	17	30	35	60	91	130	179	237	306
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 2	1.5 / 3	1.8 / 4.5	2.5 / 6.3	3.4 / 8.5	4.5 / 11.3	5.8 / 14.5
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 3.4	1.9 / 4.7	2.6 / 6.5	3.4 / 8.5	4.4 / 11
30	Floor L/360	--	--	--	10	11	18	22	35	53	75	102	134	173
	Total Load	--	--	--	12	13	23	28	48	73	105	145	193	250
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 2.8	1.6 / 4	2.2 / 5.5	3 / 7.5	3.9 / 9.8	5.1 / 12.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.1	1.5 / 3	1.7 / 4.2	2.3 / 5.7	3 / 7.4	3.9 / 9.7

ROOF LOAD TABLES



125% LOAD DURATION / PLF

Roof live-load tables organized by LVL grade, ply configuration and member depth. Review design assumptions and bearing requirements before selecting a member.

TECHNICAL REFERENCE

ROOF LOADS

2.0E LVL | 1 PLY | 1.5 IN

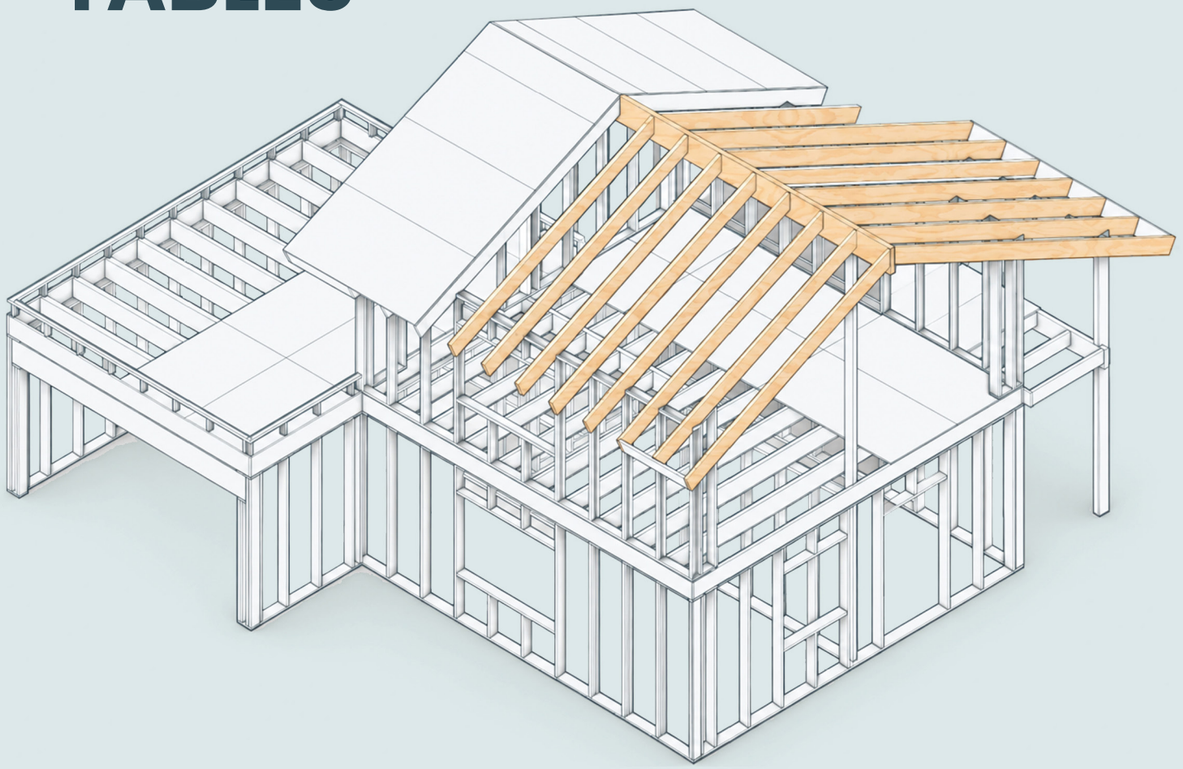
Clear span (ft)		VMG LIGNUM 2.0E LVL, 1 Ply, 1.5" Thickness												
		Depth (in)												
		3.5	5.5	7.25	9.25	9.5	11.25	11.875	14	16	18	20	22	24
4	Roof L/240	328	1117	1803	2273	2273	2272	2272	2271	2270	2270	2269	2268	2267
	Total Load	436	1176	1803	2273	2273	2272	2272	2271	2270	2270	2269	2268	2267
	Req Brg (in) SPF	1.5 / 3	3.4 / 8.5	5.6 / 14	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 2.3	2.6 / 6.5	4.3 / 10.6	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
5	Roof L/240	174	613	1244	1804	1879	1908	1908	1907	1906	1905	1905	1904	1903
	Total Load	231	787	1244	1804	1879	1908	1908	1907	1906	1905	1905	1904	1903
	Req Brg (in) SPF	1.5 / 2	2.8 / 7	4.5 / 11.3	7.1 / 17.8	7.4 / 18.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	2.1 / 5.3	3.4 / 8.5	5.4 / 13.5	5.6 / 14	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
6	Roof L/240	102	374	798	1338	1395	1644	1644	1643	1642	1642	1641	1640	1639
	Total Load	135	497	900	1338	1395	1644	1644	1643	1642	1642	1641	1640	1639
	Req Brg (in) SPF	1.5 / 1.5	2 / 5	3.8 / 9.5	5.9 / 14.8	6.2 / 15.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 3.8	2.9 / 7.2	4.5 / 11.2	4.7 / 11.8	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
7	Roof L/240	65	243	522	1020	1066	1398	1444	1443	1443	1442	1441	1440	1439
	Total Load	85	322	678	1022	1066	1398	1444	1443	1443	1442	1441	1440	1439
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 3.8	3.3 / 8.3	5.1 / 12.8	5.4 / 13.5	7.3 / 18.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 2.8	2.5 / 6.3	3.9 / 9.7	4.1 / 10.2	5.5 / 13.9	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
8	Roof L/240	44	165	363	711	766	1111	1211	1287	1286	1285	1284	1284	1283
	Total Load	57	218	481	802	840	1111	1211	1287	1286	1285	1284	1284	1283
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 3	2.6 / 6.5	4.5 / 11.3	4.7 / 11.8	6.4 / 16	7.1 / 17.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 2.3	2 / 4.9	3.4 / 8.5	3.6 / 8.9	4.9 / 12.1	5.4 / 13.5	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
9	Roof L/240	31	117	260	514	554	883	984	1161	1160	1159	1158	1157	1157
	Total Load	40	154	344	645	676	900	984	1161	1160	1159	1158	1157	1157
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 2.3	2.1 / 5.3	4 / 10	4.2 / 10.5	5.7 / 14.3	6.3 / 15.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.7	1.6 / 4	3 / 7.6	3.2 / 8	4.3 / 10.8	4.8 / 12	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
10	Roof L/240	23	86	193	384	413	663	769	1057	1056	1055	1055	1054	1053
	Total Load	29	113	254	509	547	743	813	1057	1056	1055	1055	1054	1053
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 2	1.7 / 4.3	3.4 / 8.5	3.7 / 9.3	5.1 / 12.8	5.7 / 14.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 3.2	2.6 / 6.5	2.8 / 7	3.9 / 9.7	4.3 / 10.8	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
11	Roof L/240	17	65	146	294	317	508	591	901	969	969	968	967	966
	Total Load	21	84	192	388	419	621	682	901	969	969	968	967	966
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.8	1.5 / 3.5	2.9 / 7.3	3.1 / 7.8	4.7 / 11.8	5.2 / 13	7 / 17.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 2.7	2.2 / 5.5	2.4 / 5.9	3.6 / 8.9	3.9 / 9.9	5.3 / 13.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
12	Roof L/240	13	50	114	230	248	398	464	736	896	895	894	893	893
	Total Load	16	65	149	303	327	526	580	769	896	895	894	893	893
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 3	2.4 / 6	2.6 / 6.5	4.3 / 10.8	4.7 / 11.8	6.4 / 16	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.8 / 4.6	2 / 4.9	3.3 / 8.2	3.6 / 8.9	4.9 / 12.1	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
13	Roof L/240	10	40	90	183	197	319	371	590	832	832	831	830	829
	Total Load	12	51	117	240	259	421	490	663	832	832	831	830	829
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	2.1 / 5.3	2.3 / 5.8	3.7 / 9.3	4.3 / 10.8	5.9 / 14.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.6 / 4	1.7 / 4.4	2.8 / 7	3.3 / 8.2	4.5 / 11.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
14	Roof L/240	--	32	72	147	159	259	302	479	697	777	776	775	774
	Total Load	--	40	93	193	208	341	398	577	726	777	776	775	774
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.8 / 4.5	2 / 5	3.2 / 8	3.7 / 9.3	5.5 / 13.8	7 / 17.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 3.4	1.5 / 3.8	2.4 / 6.1	2.8 / 7	4.2 / 10.4	5.3 / 13.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2

ROOF LOADS

2.0E LVL | 1 PLY | 1.5 IN

Clear span (ft)		VMG LIGNUM 2.0E LVL, 1 Ply, 1.5" Thickness												
		Depth (in)												
		3.5	5.5	7.25	9.25	9.5	11.25	11.875	14	16	18	20	22	24
15	Roof L/240	--	26	59	121	130	213	248	395	575	728	728	727	726
	Total Load	--	32	76	157	170	279	326	506	638	728	728	727	726
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.6 / 4	1.7 / 4.3	2.8 / 7	3.3 / 8.3	5.1 / 12.8	6.6 / 16.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3	1.5 / 3.2	2.1 / 5.3	2.5 / 6.3	3.9 / 9.7	5 / 12.5	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
16	Roof L/240	--	21	49	100	108	176	206	329	480	670	685	684	683
	Total Load	--	26	62	129	140	231	270	433	565	686	685	684	683
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 3.5	1.5 / 3.8	2.5 / 6.3	2.9 / 7.3	4.7 / 11.8	6.2 / 15.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.7	1.5 / 2.8	1.9 / 4.7	2.2 / 5.5	3.6 / 8.9	4.7 / 11.8	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
17	Roof L/240	--	18	41	83	90	148	173	277	405	565	647	646	645
	Total Load	--	22	51	108	117	193	226	364	503	618	647	646	645
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3.3	1.5 / 3.5	2.2 / 5.5	2.6 / 6.5	4.2 / 10.5	5.8 / 14.5	7.2 / 18	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 2.7	1.7 / 4.2	2 / 4.9	3.2 / 8	4.4 / 11	5.5 / 13.7	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
18	Roof L/240	--	15	34	71	76	125	147	236	344	481	613	612	611
	Total Load	--	18	43	90	98	163	191	309	451	555	613	612	611
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.8	1.5 / 3	2 / 5	2.3 / 5.8	3.7 / 9.3	5.5 / 13.8	6.8 / 17	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.1	1.5 / 2.3	1.5 / 3.8	1.7 / 4.4	2.8 / 7	4.2 / 10.4	5.2 / 12.9	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
19	Roof L/240	--	13	29	60	65	107	125	202	295	413	559	582	581
	Total Load	--	15	36	76	83	138	162	264	387	501	582	582	581
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 2.8	1.8 / 4.5	2.1 / 5.3	3.4 / 8.5	5 / 12.5	6.4 / 16	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 2.1	1.5 / 3.4	1.6 / 4	2.6 / 6.5	3.8 / 9.5	4.9 / 12.1	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
20	Roof L/240	--	11	25	52	56	92	108	174	256	357	482	554	553
	Total Load	--	12	30	65	71	118	139	227	334	453	546	554	553
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 2.5	1.6 / 4	1.9 / 4.8	3 / 7.5	4.5 / 11.3	6.1 / 15.3	7.4 / 18.5	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 1.9	1.5 / 3	1.5 / 3.6	2.3 / 5.7	3.4 / 8.5	4.6 / 11.6	5.6 / 14	5.7 / 14.2	5.7 / 14.2
22	Roof L/240	--	--	19	39	42	70	82	132	195	272	367	485	505
	Total Load	--	--	22	48	52	88	104	171	253	356	454	505	505
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.5 / 2	1.5 / 3.3	1.6 / 4	2.5 / 6.3	3.7 / 9.3	5.3 / 13.3	6.8 / 17	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 3	1.9 / 4.7	2.8 / 7	4 / 10.1	5.2 / 12.9	5.7 / 14.2	5.7 / 14.2
24	Roof L/240	--	--	15	30	32	54	63	103	151	213	287	377	464
	Total Load	--	--	16	36	40	67	79	131	195	276	375	455	464
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 1.8	1.5 / 2.8	1.5 / 3.3	2.1 / 5.3	3.2 / 8	4.5 / 11.3	6.1 / 15.3	7.4 / 18.5	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.1	1.5 / 2.5	1.6 / 4	2.4 / 6.1	3.4 / 8.5	4.6 / 11.6	5.6 / 14	5.7 / 14.2
26	Roof L/240	--	--	11	24	26	42	50	81	120	169	229	300	387
	Total Load	--	--	12	28	30	52	62	102	153	218	297	389	429
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 2.8	1.8 / 4.5	2.7 / 6.8	3.8 / 9.5	5.2 / 13	6.8 / 17	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 2.1	1.5 / 3.4	2 / 5.1	2.9 / 7.2	3.9 / 9.9	5.2 / 12.9	5.7 / 14.2
28	Roof L/240	--	--	--	19	21	34	40	65	96	136	185	243	311
	Total Load	--	--	--	22	24	41	49	81	122	174	239	315	393
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.5 / 2.5	1.6 / 4	2.3 / 5.8	3.3 / 8.3	4.5 / 11.3	5.9 / 14.8	7.4 / 18.5
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 3	1.7 / 4.4	2.5 / 6.3	3.4 / 8.5	4.5 / 11.2	5.6 / 14
30	Roof L/240	--	--	--	15	17	28	32	53	79	111	151	199	256
	Total Load	--	--	--	17	18	32	39	65	99	141	194	257	331
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 2.3	1.5 / 3.5	2 / 5	2.9 / 7.3	3.9 / 9.8	5.2 / 13	6.7 / 16.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 2.7	1.5 / 3.8	2.2 / 5.5	3 / 7.4	3.9 / 9.9	5.1 / 12.7

SNOW LOAD TABLES



115% LOAD DURATION

Snow load tables present maximum allowable uniformly distributed loads for the stated snow-load duration and the associated span and bearing conditions.

SNOW L/240

Maximum floor live load based on the span-related live-load deflection criterion.

TOTAL LOAD + BEARING

Confirm the allowable total load and the required end or interior bearing length.

SNOW LOADS

2.0E LVL | 1 PLY | 1.5 IN

Clear span (ft)		VMG LIGNUM 2.0E LVL, 1 Ply, 1.5" Thickness												
		Depth (in)												
		3.5	5.5	7.25	9.25	9.5	11.25	11.875	14	16	18	20	22	24
4	Snow L/240	328	1090	1683	2273	2273	2272	2272	2271	2270	2270	2269	2268	2267
	Total Load	436	1090	1683	2273	2273	2272	2272	2271	2270	2270	2269	2268	2267
	Req Brg (in) SPF	1.5 / 3	3.2 / 8	5.2 / 13	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 2.3	2.4 / 6.1	3.9 / 9.9	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
5	Snow L/240	174	622	1155	1690	1760	1908	1908	1907	1906	1905	1905	1904	1903
	Total Load	231	731	1155	1690	1760	1908	1908	1907	1906	1905	1905	1904	1903
	Req Brg (in) SPF	1.5 / 2	2.5 / 6.3	4.2 / 10.5	6.5 / 16.3	6.8 / 17	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.9 / 4.7	3.2 / 8	4.9 / 12.3	5.2 / 12.9	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
6	Snow L/240	102	374	808	1243	1300	1644	1644	1643	1642	1642	1641	1640	1639
	Total Load	135	497	834	1243	1300	1644	1644	1643	1642	1642	1641	1640	1639
	Req Brg (in) SPF	1.5 / 1.5	2 / 5	3.5 / 8.8	5.5 / 13.8	5.7 / 14.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 3.8	2.7 / 6.6	4.2 / 10.4	4.3 / 10.8	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
7	Snow L/240	65	243	528	948	992	1303	1418	1443	1443	1442	1441	1440	1439
	Total Load	85	322	628	948	992	1303	1418	1443	1443	1442	1441	1440	1439
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 3.8	3 / 7.5	4.7 / 11.8	4.9 / 12.3	6.7 / 16.8	7.4 / 18.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 2.8	2.3 / 5.7	3.6 / 8.9	3.7 / 9.3	5.1 / 12.7	5.6 / 14	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
8	Snow L/240	44	165	363	720	775	1032	1127	1287	1286	1285	1284	1284	1283
	Total Load	57	218	481	744	778	1032	1127	1287	1286	1285	1284	1284	1283
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 3	2.6 / 6.5	4.1 / 10.3	4.3 / 10.8	5.9 / 14.8	6.5 / 16.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 2.3	2 / 4.9	3.1 / 7.8	3.3 / 8.2	4.5 / 11.2	4.9 / 12.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
9	Snow L/240	31	117	260	518	558	835	913	1161	1160	1159	1158	1157	1157
	Total Load	40	154	344	597	625	835	913	1161	1160	1159	1158	1157	1157
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 2.3	2.1 / 5.3	3.7 / 9.3	3.9 / 9.8	5.2 / 13	5.8 / 14.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.7	1.6 / 4	2.8 / 7	3 / 7.4	3.9 / 9.9	4.4 / 11	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
10	Snow L/240	23	86	193	385	415	670	754	992	1056	1055	1055	1054	1053
	Total Load	29	113	254	489	512	687	754	992	1056	1055	1055	1054	1053
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 2	1.7 / 4.3	3.3 / 8.3	3.5 / 8.8	4.7 / 11.8	5.2 / 13	7.1 / 17.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 3.2	2.5 / 6.3	2.7 / 6.6	3.6 / 8.9	3.9 / 9.9	5.4 / 13.5	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
11	Snow L/240	17	65	146	294	317	513	597	836	969	969	968	967	966
	Total Load	21	84	192	388	419	575	631	836	969	969	968	967	966
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.8	1.5 / 3.5	2.9 / 7.3	3.1 / 7.8	4.3 / 10.8	4.8 / 12	6.4 / 16	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 2.7	2.2 / 5.5	2.4 / 5.9	3.3 / 8.2	3.6 / 9.1	4.9 / 12.1	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
12	Snow L/240	13	50	114	230	248	401	467	712	893	895	894	893	893
	Total Load	16	65	149	303	327	487	535	712	893	895	894	893	893
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 3	2.4 / 6	2.6 / 6.5	4 / 10	4.4 / 11	5.9 / 14.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.8 / 4.6	2 / 4.9	3 / 7.6	3.3 / 8.3	4.5 / 11.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
13	Snow L/240	10	40	90	183	197	319	373	595	771	832	831	830	829
	Total Load	12	51	117	240	259	417	460	613	771	832	831	830	829
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	2.1 / 5.3	2.3 / 5.8	3.7 / 9.3	4 / 10	5.4 / 13.5	7 / 17.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.6 / 4	1.7 / 4.4	2.8 / 7	3 / 7.6	4.1 / 10.2	5.3 / 13.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
14	Snow L/240	--	32	72	147	159	259	302	482	671	777	776	775	774
	Total Load	--	40	93	193	208	341	398	533	671	777	776	775	774
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.8 / 4.5	2 / 5	3.2 / 8	3.7 / 9.3	5.1 / 12.8	6.5 / 16.3	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 3.4	1.5 / 3.8	2.4 / 6.1	2.8 / 7	3.9 / 9.7	4.9 / 12.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2

SNOW LOADS

2.0E LVL | 1 PLY | 1.5 IN

Clear span (ft)		VMG LIGNUM 2.0E LVL, 1 Ply, 1.5" Thickness												
		Depth (in)												
		3.5	5.5	7.25	9.25	9.5	11.25	11.875	14	16	18	20	22	24
15	Snow L/240	--	26	59	121	130	213	248	397	581	723	728	727	726
	Total Load	--	32	76	157	170	279	326	467	590	723	728	727	726
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.6 / 4	1.7 / 4.3	2.8 / 7	3.3 / 8.3	4.7 / 11.8	6 / 15	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3	1.5 / 3.2	2.1 / 5.3	2.5 / 6.3	3.6 / 8.9	4.6 / 11.4	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
16	Snow L/240	--	21	49	100	108	176	206	330	483	641	685	684	683
	Total Load	--	26	62	129	140	231	270	412	522	641	685	684	683
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 3.5	1.5 / 3.8	2.5 / 6.3	2.9 / 7.3	4.4 / 11	5.7 / 14.3	7 / 17.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.7	1.5 / 2.8	1.9 / 4.7	2.2 / 5.5	3.3 / 8.3	4.3 / 10.8	5.3 / 13.3	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
17	Snow L/240	--	18	41	83	90	148	173	277	407	569	647	646	645
	Total Load	--	22	51	108	117	193	226	364	465	572	647	646	645
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3.3	1.5 / 3.5	2.2 / 5.5	2.6 / 6.5	4.2 / 10.5	5.3 / 13.3	6.6 / 16.5	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 2.7	1.7 / 4.2	2 / 4.9	3.2 / 8	4 / 10.1	5 / 12.5	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
18	Snow L/240	--	15	34	71	76	125	147	236	346	484	613	612	611
	Total Load	--	18	43	90	98	163	191	309	416	512	613	612	611
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.8	1.5 / 3	2 / 5	2.3 / 5.8	3.7 / 9.3	5 / 12.5	6.3 / 15.8	7.5 / 18.8	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.1	1.5 / 2.3	1.5 / 3.8	1.7 / 4.4	2.8 / 7	3.8 / 9.5	4.8 / 12	5.7 / 14.2	5.7 / 14.2	5.7 / 14.2
19	Snow L/240	--	13	29	60	65	107	125	202	296	416	556	582	581
	Total Load	--	15	36	76	83	138	162	264	375	462	556	582	581
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 2.8	1.8 / 4.5	2.1 / 5.3	3.4 / 8.5	4.8 / 12	5.9 / 14.8	7.2 / 18	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 2.1	1.5 / 3.4	1.6 / 4	2.6 / 6.5	3.6 / 9.1	4.5 / 11.2	5.5 / 13.7	5.7 / 14.2	5.7 / 14.2
20	Snow L/240	--	11	25	52	56	92	108	174	256	359	485	554	553
	Total Load	--	12	30	65	71	118	139	227	334	418	504	554	553
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 2.5	1.6 / 4	1.9 / 4.8	3 / 7.5	4.5 / 11.3	5.6 / 14	6.8 / 17	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 1.9	1.5 / 3	1.5 / 3.6	2.3 / 5.7	3.4 / 8.5	4.3 / 10.6	5.2 / 12.9	5.7 / 14.2	5.7 / 14.2
22	Snow L/240	--	--	19	39	42	70	82	132	195	273	370	486	505
	Total Load	--	--	22	48	52	88	104	171	253	347	419	496	505
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.5 / 2	1.5 / 3.3	1.6 / 4	2.5 / 6.3	3.7 / 9.3	5.1 / 12.8	6.2 / 15.5	7.4 / 18.5	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 3	1.9 / 4.7	2.8 / 7	3.9 / 9.7	4.7 / 11.8	5.6 / 14	5.7 / 14.2
24	Snow L/240	--	--	15	30	32	54	63	103	151	213	288	379	464
	Total Load	--	--	16	36	40	67	79	131	195	276	354	419	464
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 1.8	1.5 / 2.8	1.5 / 3.3	2.1 / 5.3	3.2 / 8	4.5 / 11.3	5.7 / 14.3	6.8 / 17	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.1	1.5 / 2.5	1.6 / 4	2.4 / 6.1	3.4 / 8.5	4.3 / 10.8	5.2 / 12.9	5.7 / 14.2
26	Snow L/240	--	--	11	24	26	42	50	81	120	169	229	301	387
	Total Load	--	--	12	28	30	52	62	102	153	218	297	358	419
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.5	1.5 / 2.8	1.8 / 4.5	2.7 / 6.8	3.8 / 9.5	5.2 / 13	6.3 / 15.8	7.4 / 18.5
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 2.1	1.5 / 3.4	2 / 5.1	2.9 / 7.2	3.9 / 9.9	4.8 / 12	5.6 / 14
28	Snow L/240	--	--	--	19	21	34	40	65	96	136	185	243	313
	Total Load	--	--	--	22	24	41	49	81	122	174	239	310	362
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.5 / 2.5	1.6 / 4	2.3 / 5.8	3.3 / 8.3	4.5 / 11.3	5.8 / 14.5	6.8 / 17
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.9	1.5 / 3	1.7 / 4.4	2.5 / 6.3	3.4 / 8.5	4.4 / 11	5.2 / 12.9
30	Snow L/240	--	--	--	15	17	28	32	53	79	111	151	199	256
	Total Load	--	--	--	17	18	32	39	65	99	141	194	257	316
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 2.3	1.5 / 3.5	2 / 5	2.9 / 7.3	3.9 / 9.8	5.2 / 13	6.4 / 16
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 1.7	1.5 / 2.7	1.5 / 3.8	2.2 / 5.5	3 / 7.4	3.9 / 9.9	4.9 / 12.1

WALL FRAMING & LATERAL LOADS



WALL STUDS / BEAM FACES

Allowable wall framing loads, service deflections and loads applied to either face of beams. Read all source notes and design limitations.

TECHNICAL REFERENCE

TECHNICAL REFERENCE

ALLOWABLE UNIFORM LOADS APPLIED TO EITHER FACE OF BEAM

ALLOWABLE UNIFORM LOADS APPLIED TO EITHER FACE OF BEAM NOTES

1. Allowable uniform loads in pounds per linear foot (plf) applied to either face of multi-ply beams with various ply-to-ply fastening. Tabulated allowable loads assume normal load duration.
2. Refer to screw manufacturer's various evaluation reports for spacing requirements.
3. When fastening from both sides, stagger fastener rows by half the row spacing.
4. Concentrated face loads require additional analysis when the concentrated load divided by the tabulated fastener spacing exceeds the tabulated allowable uniform load.

HOW TO USE THE ALLOWABLE UNIFORM LOADS APPLIED TO EITHER FACE OF BEAM TABLES

1. Compute the allowable stress design uniform load on the beam.
2. Ensure the calculated uniform load is less than the allowable uniform load for the desired fastening.

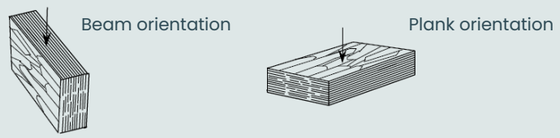


Figure 1 – an illustration of beam and plank orientation as noted in table1

Table 1-reference design values for VMG LIGNUM LVL[1,2]

BEAM ORIENTATION[3]					PLANK ORIENTATION[3]					AXIAL	
Modulus of elasticity		Bending[7,8] F_b (psi)	Shear F_v (psi)	Compression Perp-to-Grain $F_{c\perp}$[10] (psi)	Modulus of elasticity		Bending F_b (psi)	Shear F_v (psi)	Compression Perp-to-Grain $F_{c\perp}$[10] (psi)	Compression F_c (psi)	Tension F_t[9] (psi)
E_{true}[4] (x10⁶ psi)	$E_{apparent}$[5,6] (x10⁶ psi)				E_{true}[4] (x10⁶ psi)	$E_{apparent}$[5,6] (x10⁶ psi)					
1.4	1.3	1.850	250	550	1.4	1.3	2.200	150	300	2.300	1.600
2.0	1.9	3.050	350	700	2.0	1.9	3.300	150	380	3.000	2.700

For SI: 1 inch = 25.4 mm, 1 psi = 6894.8 Pa

[1] The tabulated values are design values for normal duration of load and must be adjusted by the applicable adjustment factors in accordance with Section 8.3 of the 2024 and 2018 NDS. Modulus of elasticity and compression perpendicular-to-grain must not be adjusted for duration of load.

[2] The tabulated values are limited to dry interior conditions where the average moisture content in lumber is less than 16 percent.

[3] Refer to Figure 1 for LVL orientations.

[4] Reference E_{true} values are the shear-free modulus of elasticity, which do not include the effects of the shear deformation. When calculating the total deflection, both bending and shear deformations must be included. Equations for various span and load conditions are available in engineering references.

[5] Reference $E_{apparent}$ values are the apparent modulus of elasticity, which include the effects of shear deformation. When calculating the total deflection, standard engineering formulae for the pure bending deflection is sufficient.

[6] Reference modulus of elasticity, E_{min}, used for beam stability calculations, must be calculated using the tabulated $E_{apparent}$ in accordance with Appendix D of the 2024 and 2018 NDS. The COV_E may be taken as 0.10 when calculating E_{min}.

[7] Reference bending design value in the beam orientation, F_b, may be increased by 4% when the member qualifies as a repetitive member, in accordance with Section 8.3.7 of the 2024 and 2018 NDS.

[8] Reference bending design value in beam orientation is based on a reference depth of 12 inches. For other depths, the allowable bending stress, F_b, must be adjusted by multiplying F_b by $(12/d)^{0.15}$, where d is depth member in inches. For depths 3½ inches or less, multiply F_b by 1.203.

[9] Reference tension design values, F_t, are assigned for a standard length of 36 inches. For lengths longer than 36 inches, multiply F_t by $(36/L)^{0.09}$, where L is the length in inches. For lengths less than 36 inches, use the reference tension design value given in the table above.

[10] The bearing area factor, C_b, is permitted to be applied to the reference compression perpendicular-to-grain design values, $F_{c\perp}$, in accordance with the 2024 and 2018 NDS.

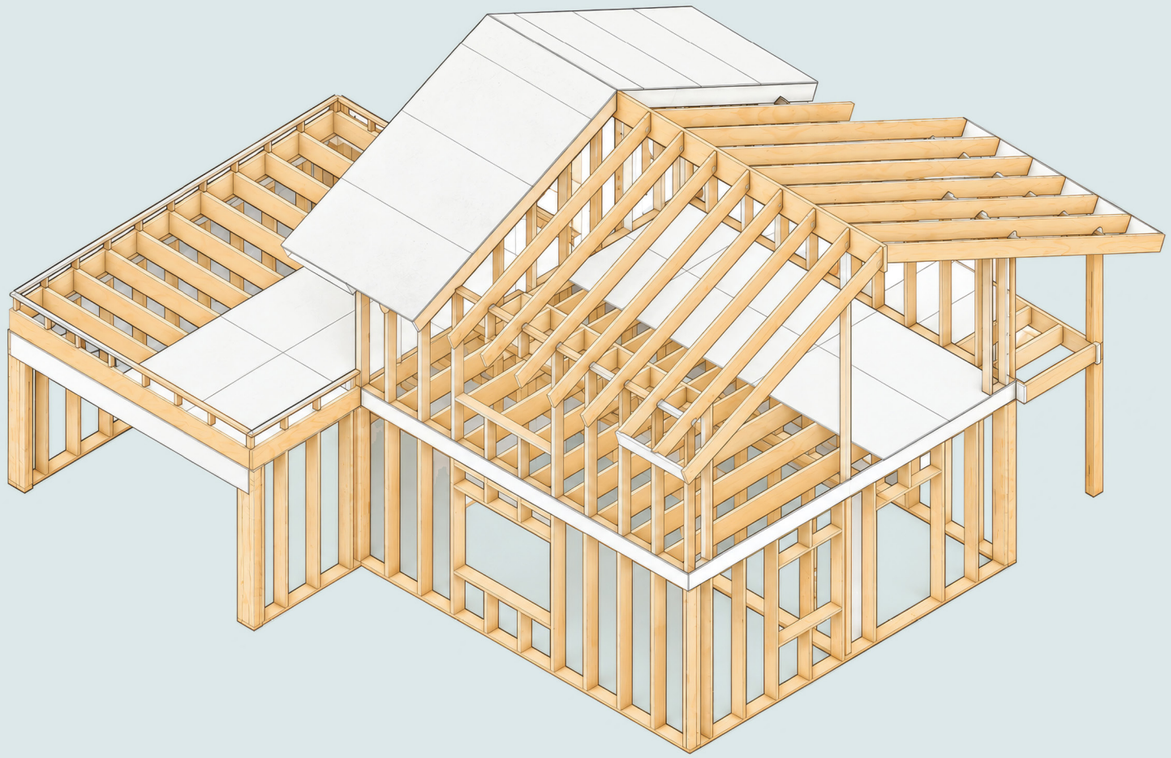
2.0E LVL 1.5” Wall Framing. Allowable Axial Loads and Service Deflections with Wind

Stud Lengt (ft)	Vertical Load & Deflection	1.5” x 3.5”				1.5” x 5.5”					1.5” x 7.25”				
		Allowable Lateral Wind Load (plf)				Allowable Lateral Wind Load (plf)					Allowable Lateral Wind Load (plf)				
		0	15	20	30	0	20	30	40	50	0	20	30	40	50
8	Load (lbf)	2789	2789	2789	2789	4382	4382	4382	4382	4382	5777	5777	5777	5777	5777
	Defl (L/)		1010	758	505		2940	1960	1470	1176		6734	4489	3367	2694
9	Load (lbf)	2789	2789	2789	2579	4382	4382	4382	4382	4382	5777	5777	5777	5777	5777
	Defl (L/)		1010	758	505		2065	1377	1032	826		4730	3153	2365	1892
10	Load (lbf)	2592	2362	2238	2007	4382	4382	4382	4382	4382	5777	5777	5777	5777	5777
	Defl (L/)		517	388	259		1505	1004	753	602		3448	2299	1724	1379
11	Load (lbf)	2214	1921	1798	1570	4382	4382	4382	4382	4382	5777	5777	5777	5777	5777
	Defl (L/)		389	291	194		1131	754	565	452		2590	1727	1295	1036
12	Load (lbf)	1911	1576	1455	1230	4382	4382	4382	4382	4382	5777	5777	5777	5777	5777
	Defl (L/)		299	224	150		871	581	436	348		1995	1330	998	798
13	Load (lbf)	1665	1302	1183	962	4382	4382	4382	4382	4075	5777	5777	5777	5777	5777
	Defl (L/)		235	177	118		685	457	343	274		1569	1046	785	628
14	Load (lbf)	1464	1081	965	748	4382	4382	4044	3687	3344	5777	5777	5777	5777	5777
	Defl (L/)		188	141	94		549	366	274	219		1257	838	628	503
15	Load (lbf)	0	0	0	0	4339	3816	3437	3080	2736	5777	5777	5777	5777	5777
	Defl (L/)		0	0	0		446	297	223	178		1022	681	511	409
16	Load (lbf)	0	0	0	0	3909	3305	2926	2570	2228	5777	5777	5777	5777	5069
	Defl (L/)		0	0	0		368	245	184	147		842	561	421	337
17	Load (lbf)	0	0	0	0	3539	2871	2494	2141	1799	5777	5777	5777	5777	4262
	Defl (L/)		0	0	0		306	204	153	123		702	468	351	281
18	Load (lbf)	0	0	0	0	3217	2500	2127	1776	1434	5777	5777	5553	5070	3558
	Defl (L/)		0	0	0		258	172	129	103		591	394	296	236
19	Load (lbf)	0	0	0	0	2937	2182	1813	1464	1120	5777	5412	4899	4415	2940
	Defl (L/)		0	0	0		219	146	110	88		503	335	251	201
20	Load (lbf)	0	0	0	0	2691	1908	1542	1194	847	5573	4841	4327	3843	2395
	Defl (L/)		0	0	0		188	125	94	75		431	287	215	172
21	Load (lbf)	0	0	0	0	2474	1670	1308	960	606	5152	4338	3825	3342	1912
	Defl (L/)		0	0	0		163	108	81	65		372	248	186	149
22	Load (lbf)	0	0	0	0	2282	1462	1103	754	390	4776	3895	3383	2902	1481
	Defl (L/)		0	0	0		141	94	71	57		324	216	162	130
23	Load (lbf)	0	0	0	0	0	0	0	0	0	4438	3501	2992	2513	1091
	Defl (L/)		0	0	0		0	0	0	0		283	189	142	113
24	Load (lbf)	0	0	0	0	0	0	0	0	0	4134	3151	2646	2168	734
	Defl (L/)		0	0	0		0	0	0	0		249	166	125	100

1.4E LVL 1.5” Wall Framing. Allowable Axial Loads and Service Deflections with Wind

Stud Lengt (ft)	Vertical Load & Deflection	1.5” x 3.5”				1.5” x 5.5”					1.5” x 7.25”				
		Allowable Lateral Wind Load (plf)				Allowable Lateral Wind Load (plf)					Allowable Lateral Wind Load (plf)				
		0	15	20	30	0	20	30	40	50	0	20	30	40	50
8	Load (lbf)	2462	2327	2206	1974	4382	4382	4382	4382	4382	5777	5777	5777	5777	5777
	Defl (L/)		691	518	346		2012	1341	1006	805		4608	3072	2304	1843
9	Load (lbf)	2056	1822	1698	1464	4382	4382	4382	4382	4382	5777	5777	5777	5777	5777
	Defl (L/)		485	364	243		1413	942	706	565		3236	2157	1618	1294
10	Load (lbf)	1738	1440	1315	1081	4382	4382	4382	4382	4268	5777	5777	5777	5777	5777
	Defl (L/)		354	265	177		1030	687	515	412		2359	1573	1180	944
11	Load (lbf)	1488	1145	1021	789	4382	4382	4068	3714	3368	5777	5777	5777	5777	5777
	Defl (L/)		266	199	133		774	516	387	310		1772	1182	886	709
12	Load (lbf)	1286	914	793	561	4076	3727	3351	2989	2636	5777	5777	5777	5777	5379
	Defl (L/)		205	154	102		596	397	298	238		1365	910	683	546
13	Load (lbf)	1122	732	612	379	3622	3143	2760	2394	2036	5777	5777	5777	5777	4407
	Defl (L/)		161	121	81		469	313	234	188		1074	716	537	430
14	Load (lbf)	987	585	467	230	3236	2658	2272	1902	1539	5777	5777	5668	5194	3559
	Defl (L/)		129	97	64		375	250	188	150		860	573	430	344
15	Load (lbf)	0	0	0	0	2905	2251	1864	1492	1123	5734	5388	4886	4401	2818
	Defl (L/)		0	0	0		305	203	153	122		699	466	349	280
16	Load (lbf)	0	0	0	0	2621	1909	1522	1148	769	5230	4723	4212	3720	2169
	Defl (L/)		0	0	0		251	168	126	101		576	384	288	230
17	Load (lbf)	0	0	0	0	2376	1619	1233	854	460	4785	4148	3630	3132	1598
	Defl (L/)		0	0	0		210	140	105	84		480	320	240	192
18	Load (lbf)	0	0	0	0	2162	1372	986	600	182	4392	3647	3125	2623	1088
	Defl (L/)		0	0	0		177	118	88	71		405	270	202	162
19	Load (lbf)	0	0	0	0	1975	1160	774	376	0	4042	3210	2685	2181	625
	Defl (L/)		0	0	0		150	100	75	0		344	229	172	138
20	Load (lbf)	0	0	0	0	1812	977	589	172	0	3731	2827	2302	1794	190
	Defl (L/)		0	0	0		129	86	64	0		295	197	147	118
21	Load (lbf)	0	0	0	0	1667	819	425	0	0	3453	2491	1965	1453	0
	Defl (L/)		0	0	0		111	74	0	0		255	170	127	0
22	Load (lbf)	0	0	0	0	1539	680	279	0	0	3204	2194	1668	1151	0
	Defl (L/)		0	0	0		97	64	0	0		222	148	111	0
23	Load (lbf)	0	0	0	0	0	0	0	0	0	2980	1931	1405	881	0
	Defl (L/)		0	0	0		0	0	0	0		194	129	97	0
24	Load (lbf)	0	0	0	0	0	0	0	0	0	2778	1698	1171	636	0
	Defl (L/)		0	0	0		0	0	0	0		171	114	85	0

MULTI-PLY SPAN TABLES



FLOOR / SNOW / ROOF

Additional floor, snow and roof load tables for the configurations included in the published engineering reference. Each table retains its original numeric values and notes.

TECHNICAL REFERENCE

Maximum Allowable Uniform Load (plf) Applied to Either Face of Beam, 2.0E LVL 1.5”

			LVL Depth		LVL Depth		LVL Depth	
			7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5” (3” Wide)**		**3-ply 1.5” (4.5” Wide)**		**4-ply 1.5” (6” Wide)**	
								
10d common nails 0.148”x3”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	496		372			
	3	12	743	743	558	558		
	4	12	991	991	743	743		
8d common nails 0.131”x3”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	409		307			
	3	12	614	614	460	460		
	4	12	819	819	614	614		
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5” (3” Wide)**		**3-ply 1.5” (4.5” Wide)**		**4-ply 1.5” (6” Wide)**	
								
0.5” Min Diameter A307 Bolts with Fender Washers each face			Bolt One Face		Bolt One Face		Bolt One Face	
	2	24	339	339	254	254	226	226
	2	16	508	508	381	381	339	339
	3	24		508		381		339
	3	16		762		571		508
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5” (3” Wide)**		**3-ply 1.5” (4.5” Wide)**		**4-ply 1.5” (6” Wide)**	
								
MiTek USP WS			WS3 One Face		WS3 Both Faces		WS45 Both Faces	
	2	24	536	536	402	402	357	357
	2	16	804	804	603	603	536	536
	3	24	804	804	603	603	536	536
	3	16	1206	1206	905	905	804	804
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5” (3” Wide)**		**3-ply 1.5” (4.5” Wide)**		**4-ply 1.5” (6” Wide)**	
								
Simpson SDW			SDW22300 One Face		SDW22458 One Face		SDW22600 One Face	
	2	24	650	650	488	488	433	433
	2	16	975	975	731	731	650	650
	3	24	975	975	731	731	650	650
	3	16	1463	1463	1097	1097	975	975
FastenMaster FlatLOK			FL278 One Face		FL412 One Face		FL006 One Face	
	2	24	454	454	352	352	313	313
	2	16	682	682	528	528	469	469
	3	24	682	682	528	528	469	469
	3	16	1022	1022	792	792	704	704

Maximum Allowable Uniform Load (plf) Applied to Either Face of Beam, 2.0E LVL 1.75”

			LVL Depth		LVL Depth		LVL Depth	
			7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
					 			
16d common nails 0.162”x3.5”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	594		445			
	3	12	891	891	668	668		
	4	12	1188	1188	891	891		
Pneumatic Gun nails 0.131”x3.25”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	409		307			
	3	12	614	614	460	460		
	4	12	819	819	614	614		
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
								
0.5” Min Diameter A307 Bolts with Fender Washers each face			Bolt One Face		Bolt One Face		Bolt One Face	
	2	24	395	395	296	296	263	263
	2	16	593	593	444	444	395	395
	3	24		593		444		395
	3	16		889		667		593
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
								
MiTek USP WS			WS3 One Face		WS3 Both Faces		WS45 Both Faces	
	2	24	638	638	479	479	425	425
	2	16	957	957	718	718	638	638
	3	24	957	957	718	718	638	638
	3	16	1436	1436	1077	1077	957	957
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
								
Simpson SDW			SDW22338 One Face		SDW22500 One Face		SDW22634 One Face	
	2	24	800	800	488	488	433	433
	2	16	1200	1200	731	731	650	650
	3	24	1200	1200	731	731	650	650
	3	16	1800	1800	1097	1097	975	975
FastenMaster FlatLOK			FL312 One Face		FL005 One Face		FL634 One Face	
	2	24	540	540	375	375	333	333
	2	16	810	810	562	562	500	500
	3	24	810	810	562	562	500	500
	3	16	1215	1215	843	843	749	749

Maximum Allowable Uniform Load (plf) Applied to Either Face of Beam, 1.4E LVL 1.5”

			LVL Depth		LVL Depth		LVL Depth	
			7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5" (3" Wide)**		**3-ply 1.5" (4.5" Wide)**		**4-ply 1.5" (6" Wide)**	
					 			
10d common nails 0.148”x3”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	461		346			
	3	12	692	692	519	519		
	4	12	922	922	692	692		
8d common nails 0.131”x3”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	381		286			
	3	12	571	571	428	428		
	4	12	762	762	571	571		
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5" (3" Wide)**		**3-ply 1.5" (4.5" Wide)**		**4-ply 1.5" (6" Wide)**	
								
0.5” Min Diameter A307 Bolts with Fender Washers each face			Bolt One Face		Bolt One Face		Bolt One Face	
	2	24	327	327	245	245	218	218
	2	16	490	490	368	368	327	327
	3	24		490		368		327
	3	16		736		552		490
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5" (3" Wide)**		**3-ply 1.5" (4.5" Wide)**		**4-ply 1.5" (6" Wide)**	
								
MiTek USP WS			WS3 One Face		WS3 Both Faces		WS45 Both Faces	
	2	24	509	509	382	382	339	339
	2	16	764	764	573	573	509	509
	3	24	764	764	573	573	509	509
	3	16	1146	1146	859	859	764	764
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5" (3" Wide)**		**3-ply 1.5" (4.5" Wide)**		**4-ply 1.5" (6" Wide)**	
								
Simpson SDW			SDW22300 One Face		SDW22458 One Face		SDW22600 One Face	
	2	24	618	618	463	463	412	412
	2	16	926	926	695	695	618	618
	3	24	926	926	695	695	618	618
	3	16	1389	1389	1042	1042	926	926
FastenMaster FlatLOK			FL278 One Face		FL412 One Face		FL006 One Face	
	2	24	393	393	305	305	271	271
	2	16	590	590	457	457	406	406
	3	24	590	590	457	457	406	406
	3	16	885	885	685	685	609	609

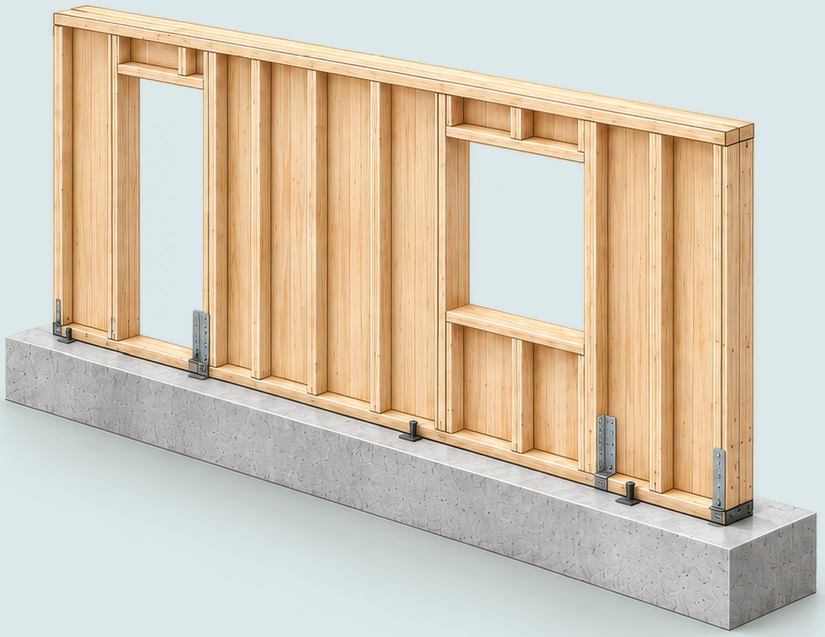
Maximum Allowable Uniform Load (plf) Applied to Either Face of Beam, 1.4E LVL 1.75”

			LVL Depth		LVL Depth		LVL Depth	
			7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
					 			
16d common nails 0.162”x3.5”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	552		414			
	3	12	829	829	621	621		
	4	12	1105	1105	829	829		
Pneumatic Gun nails 0.131”x3.25”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	381		286			
	3	12	571	571	428	428		
	4	12	762	762	571	571		
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
								
0.5” Min Diameter A307 Bolts with Fender Washers each face			Bolt One Face		Bolt One Face		Bolt One Face	
	2	24	381	381	286	286	254	254
	2	16	572	572	429	429	381	381
	3	24		572		429		381
	3	16		858		644		572
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5" (3" Wide)**		**3-ply 1.5" (4.5" Wide)**		**4-ply 1.5" (6" Wide)**	
								
MiTek USP WS			WS35 One Face		WS35 Both Faces		WS6 Both Faces	
	2	24	606	606	455	455	404	404
	2	16	909	909	682	682	606	606
	3	24	909	909	682	682	606	606
	3	16	1364	1364	1023	1023	909	909
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
								
Simpson SDW			SDW22338 One Face		SDW22500 One Face		SDW22634 One Face	
	2	24	760	760	463	463	412	412
	2	16	1140	1140	695	695	618	618
	3	24	1140	1140	695	695	618	618
	3	16	1710	1710	1042	1042	926	926
FastenMaster FlatLOK			FL312 One Face		FL005 One Face		FL634 One Face	
	2	24	477	477	339	339	301	301
	2	16	715	715	508	508	452	452
	3	24	715	715	508	508	452	452
	3	16	1073	1073	762	762	677	677

Maximum Allowable Uniform Load (plf) Applied to Either Face of Beam, 1.4E LVL 1.75”

			LVL Depth		LVL Depth		LVL Depth	
			7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”	7.25 to 11.875”	14 to 18”
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
					 			
16d common nails 0.162”x3.5”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	552		414			
	3	12	829	829	621	621		
	4	12	1105	1105	829	829		
Pneumatic Gun nails 0.131”x3.25”			Nail One Face		Nail Both Faces		4-ply connections require bolts or screws	
	2	12	381		286			
	3	12	571	571	428	428		
	4	12	762	762	571	571		
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
								
0.5” Min Diameter A307 Bolts with Fender Washers each face			Bolt One Face		Bolt One Face		Bolt One Face	
	2	24	381	381	286	286	254	254
	2	16	572	572	429	429	381	381
	3	24		572		429		381
	3	16		858		644		572
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.5" (3" Wide)**		**3-ply 1.5" (4.5" Wide)**		**4-ply 1.5" (6" Wide)**	
								
MiTek USP WS			WS35 One Face		WS35 Both Faces		WS6 Both Faces	
	2	24	606	606	455	455	404	404
	2	16	909	909	682	682	606	606
	3	24	909	909	682	682	606	606
	3	16	1364	1364	1023	1023	909	909
Fastener Type	**Rows**	**Fastener Type**	**2-ply 1.75" (3.5" Wide)**		**3-ply 1.75" (5.25" Wide)**		**4-ply 1.75" (7" Wide)**	
								
Simpson SDW			SDW22338 One Face		SDW22500 One Face		SDW22634 One Face	
	2	24	760	760	463	463	412	412
	2	16	1140	1140	695	695	618	618
	3	24	1140	1140	695	695	618	618
	3	16	1710	1710	1042	1042	926	926
FastenMaster FlatLOK			FL312 One Face		FL005 One Face		FL634 One Face	
	2	24	477	477	339	339	301	301
	2	16	715	715	508	508	452	452
	3	24	715	715	508	508	452	452
	3	16	1073	1073	762	762	677	677

DETAILING & CONNECTIONS



HOLES / SCARF CUTS

Allowable openings, scarf cut criteria and associated detailing notes.
Consult the technical limitations and figures supplied with the source data.

TECHNICAL REFERENCE

❶ SCARF CUT TABLES

SCARF CUT NOTES

1. Maximum allowable reactions are based on floor load duration, Cd=1.0.
2. Minimum heel height is measured at the exterior of the bearing and assumes the maximum notch at the inside face of the bearing is 25% of the gross depth.
3. Tabulated maximum allowable reactions consider LVL shear and bearing compression perpendicular to grain. For bearing on wood plates, reactions shall be limited to wood plate compression perpendicular to grain.

❷ HOW TO USE THE ALLOWABLE HOLE FOR BEAM TABLES

1. Compute the allowable stress design reaction for the beam.
2. Compare the calculated reaction to the tabulated allowable reaction.
3. For multi-ply beams, the allowable reactions may be multiplied by the number of beam plies.

❸ HOW TO USE THE ALLOWABLE HOLE FOR BEAM TABLES

ALLOWABLE HOLE FOR BEAM NOTES

1. Allowable hole tables for flexural members based on APA V900D (Feb 2021) and the reference design values listed in ESR-5621 Table 1. Allowable shear and moment demands at the hole location are tabulated for various beam depths and hole diameters. Allowable demands assume capacities with all applicable adjustment factors equal to 1.0. Apply the appropriate adjustment factors for load duration, wet service, temperature, and beam stability to the tabulated values.
2. Interpolation of table values is permitted if the interpolated shear or moment allowable is multiplied by 0.95 in addition to applicable adjustment factors. Shaded table values exceed the maximum hole diameter and are provided for interpolation only.
3. Refer to APA V900D for hole effects on bending stiffness and hole placement requirements. Shear values have been reduced when necessary to permit consideration of a maximum hole diameter of 2d/3 within 0.15d or 1.75” of an edge, where d is the beam depth, as discussed in V900D section 6(i).
4. Maximum hole diameter has been limited to 7 inches. Holes up to 2d/3 are permitted if shear and moment capacities are determined per APA V900D meeting placement requirements.



❹ HOW TO USE THE ALLOWABLE HOLE FOR BEAM TABLES

1. Ensure hole(s) meet APA V900D placement requirements.
2. Determine the ASD shear and moment forces in the beam at the hole location along the span.
3. Determine any additional adjustment factors for the condition (load duration, wet service, etc.)
4. Determine allowable shear and moment forces for the beam depth and hole diameter.
5. Ensure the calculated shear and moment forces are less than the table allowable values multiplied by applicable adjustment factors.
6. Refer to APA V900D for effective stiffness of the beam with hole(s) when checking deflection

Maximum Allowable Reaction for Scarf Cuts (lbf)

Beam Depth (in)	5.500	7.250	9.250	9.500	11.250	11.875	14.000	16.000	18.000
Slope Range	**1.5″ 2.0E LVL, 3″ to < 5.25″ Bearing**								
3:12 to < 9:12	1444	1903	2428	2494	2953	3117	3150	3150	3150
9:12 to 12:12	1711	2256	2878	2956	3150	3150	3150	3150	3150
Slope Range	**1.75″ 2.0E LVL, 3″ to < 5.25″ Bearing**								
3:12 to < 9:12	1684	2220	2833	2909	3445	3637	3675	3675	3675
9:12 to 12:12	1996	2631	3357	3448	3675	3675	3675	3675	3675
Slope Range	**1.5″ 2.0E LVL, <= 5.25″ Bearing**								
3:12 to < 9:12	1444	1903	2428	2494	2953	3117	3675	4200	4725
9:12 to 12:12	1711	2256	2878	2956	3500	3694	4356	4978	5513
Slope Range	**1.75" 2.0E LVL, <= 5.25" Bearing**								
3:12 to < 9:12	1684	2220	2833	2909	3445	3637	4288	4900	5513
9:12 to 12:12	1996	2631	3357	3448	4083	4310	5081	5807	6431

Minimum Heel Height For Scarf Cuts (in)

Beam Depth (in)	5.500	7.250	9.250	9.500	11.250	11.875	14.000	16.000	18.000
Bearing Range	**1.5" and 1.75" 2.0E LVL, Slope 3:12 to < 9:12**								
3" to < 5.25"	3.375	4.688	6.188	6.375	7.688	8.156	9.750	11.250	12.750
5.25" or more	2.813	4.125	5.625	5.813	7.125	7.594	9.188	10.688	12.188
Bearing Range	**1.5" and 1.75" 2.0E LVL, Slope 9:12 to < 12:12**								
3" to < 5.25"	1.875	3.188	4.688	4.875	6.188	6.656	8.250	9.750	11.250
5.25" or more	0.188	1.500	3.000	3.188	4.500	4.969	6.563	8.063	9.563

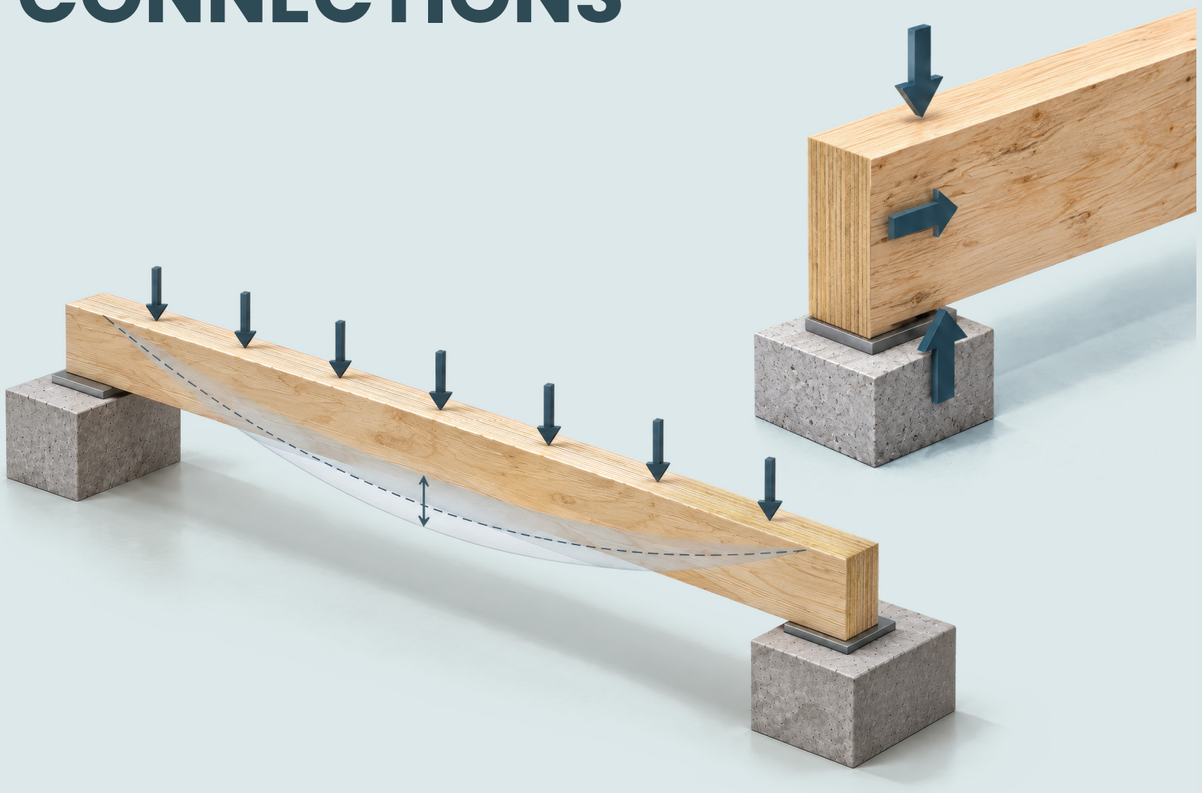
Maximum Allowable Reaction for Scarf Cuts (lbf)

Beam Depth (in)	5.500	7.250	9.250	9.500	11.250	11.875	14.000	16.000	18.000
Slope Range	**1.5" 1.4E LVL, 3" to < 5.25" Bearing**								
3:12 to < 9:12	1031	1359	1734	1781	2109	2227	2475	2475	2475
9:12 to 12:12	1222	1611	2056	2111	2475	2475	2475	2475	2475
Slope Range	**1.75" 1.4E LVL, 3" to < 5.25" Bearing**								
3:12 to < 9:12	1203	1586	2023	2078	2461	2598	2888	2888	2888
9:12 to 12:12	1426	1880	2398	2463	2888	2888	2888	2888	2888
Slope Range	**1.5" 1.4E LVL, <= 5.25" Bearing**								
3:12 to < 9:12	1031	1359	1734	1781	2109	2227	2625	3000	3375
9:12 to 12:12	1222	1611	2056	2111	2500	2639	3111	3556	4000
Slope Range	**1.75" 1.4E LVL, <= 5.25" Bearing**								
3:12 to < 9:12	1203	1586	2023	2078	2461	2598	3063	3500	3938
9:12 to 12:12	1426	1880	2398	2463	2917	3079	3630	4148	4667

Minimum Heel Height For Scarf Cuts (in)

Beam Depth (in)	5.500	7.250	9.250	9.500	11.250	11.875	14.000	16.000	18.000
Bearing Range	**1.5" and 1.75" 1.4E LVL, Slope 3:12 to < 9:12**								
3" to < 5.25"	3.375	4.688	6.188	6.375	7.688	8.156	9.750	11.250	12.750
5.25" or more	2.813	4.125	5.625	5.813	7.125	7.594	9.188	10.688	12.188
Bearing Range	**1.5" and 1.75" 1.4E LVL, Slope 9:12 to < 12:12**								
3" to < 5.25"	1.875	3.188	4.688	4.875	6.188	6.656	8.250	9.750	11.250
5.25" or more	0.188	1.500	3.000	3.188	4.500	4.969	6.563	8.063	9.563

DETAILING & CONNECTIONS



2.0E / 1.4E LVL

Reference capacities for bending and shear, organized by product grade and thickness. All values remain as published in the source tables.

TECHNICAL REFERENCE

Allowable Shear and Moment Capacity for VMG LIGNUM 2.0E LVL, 1.50” Thickness

Depth (in)	Max Hole Dia. (in)	Capacity	No Hole	Hole Diameter (in)					
				2	3	4	5	6	7
9.25	5.7	Shear (lb)	3235	1075	1075	1040	680	395	0
		Moment (lb-ft)	5650	4120	3915	3915	3915	3695	0
9.5	6.0	Shear (lb)	3325	1105	1105	1105	745	450	0
		Moment (lb-ft)	5935	4305	4050	4050	4050	4050	0
11.25	7.0	Shear (lb)	3935	1310	1310	1310	1215	855	560
		Moment (lb-ft)	8120	5730	5260	4960	4960	4960	4960
11.875	7.0	Shear (lb)	4155	1385	1385	1385	1385	1015	700
		Moment (lb-ft)	8970	6335	5780	5475	5345	5345	5345
14	7.0	Shear (lb)	4900	1630	1630	1630	1630	1600	1225
		Moment (lb-ft)	12165	8905	8135	7640	7365	7250	7250
16	7.0	Shear (lb)	5600	1865	1865	1865	1865	1865	1770
		Moment (lb-ft)	15575	11710	10740	10060	9620	9375	9280
18	7.0	Shear (lb)	6300	2100	2100	2100	2100	2100	2100
		Moment (lb-ft)	19370	14885	13710	12845	12235	11840	11620

Allowable Shear and Moment Capacity for VMG LIGNUM 2.0E LVL, 1.75” Thickness

Depth (in)	Max Hole Dia. (in)	Capacity	No Hole	Hole Diameter (in)					
				2	3	4	5	6	7
9.25	5.7	Shear (lb)	3775	1255	1255	1215	795	465	0
		Moment (lb-ft)	6595	4810	4570	4570	4570	4315	0
9.5	6.0	Shear (lb)	3875	1290	1290	1290	870	525	0
		Moment (lb-ft)	6925	5020	4725	4725	4725	4725	0
11.25	7.0	Shear (lb)	4590	1530	1530	1530	1415	1000	655
		Moment (lb-ft)	9470	6685	6135	5785	5785	5785	5785
11.875	7.0	Shear (lb)	4845	1615	1615	1615	1615	1185	815
		Moment (lb-ft)	10470	7395	6745	6385	6235	6235	6235
14	7.0	Shear (lb)	5715	1905	1905	1905	1905	1865	1425
		Moment (lb-ft)	14195	10390	9490	8915	8590	8455	8455
16	7.0	Shear (lb)	6530	2175	2175	2175	2175	2175	2065
		Moment (lb-ft)	18175	13660	12530	11735	11225	10940	10825
18	7.0	Shear (lb)	7350	2450	2450	2450	2450	2450	2450
		Moment (lb-ft)	22600	17370	16000	14985	14275	13810	13555

Allowable Shear and Moment Capacity for VMG LIGNUM 1.4E LVL, 1.50” Thickness

Depth (in)	Max Hole Dia. (in)	Capacity	No Hole	Hole Diameter (in)					
				2	3	4	5	6	7
9.25	5.7	Shear (lb)	2310	770	770	740	485	285	0
		Moment (lb-ft)	3425	2500	2375	2375	2375	2240	0
9.5	6.0	Shear (lb)	2375	790	790	790	530	320	0
		Moment (lb-ft)	3600	2610	2455	2455	2455	2455	0
11.25	7.0	Shear (lb)	2810	935	935	935	865	610	400
		Moment (lb-ft)	4925	3475	3190	3005	3005	3005	3005
11.875	7.0	Shear (lb)	2965	985	985	985	985	725	500
		Moment (lb-ft)	5440	3840	3505	3320	3240	3240	3240
14	7.0	Shear (lb)	3500	1165	1165	1165	1165	1140	875
		Moment (lb-ft)	7380	5400	4935	4635	4465	4395	4395
16	7.0	Shear (lb)	4000	1330	1330	1330	1330	1330	1265
		Moment (lb-ft)	9445	7100	6515	6100	5835	5685	5630
18	7.0	Shear (lb)	4500	1500	1500	1500	1500	1500	1500
		Moment (lb-ft)	11750	9030	8315	7790	7420	7180	7045

Allowable Shear and Moment Capacity for VMG LIGNUM 1.4E LVL, 1.75” Thickness

Depth (in)	Max Hole Dia. (in)	Capacity	No Hole	Hole Diameter (in)					
				2	3	4	5	6	7
9.25	5.7	Shear (lb)	2695	895	895	865	565	330	0
		Moment (lb-ft)	4000	2915	2770	2770	2770	2615	0
9.5	6.0	Shear (lb)	2770	920	920	920	620	375	0
		Moment (lb-ft)	4200	3045	2865	2865	2865	2865	0
11.25	7.0	Shear (lb)	3280	1090	1090	1090	1010	710	465
		Moment (lb-ft)	5745	4055	3720	3510	3510	3510	3510
11.875	7.0	Shear (lb)	3460	1150	1150	1150	1150	845	580
		Moment (lb-ft)	6350	4485	4090	3875	3780	3780	3780
14	7.0	Shear (lb)	4080	1360	1360	1360	1360	1330	1020
		Moment (lb-ft)	8610	6300	5755	5405	5210	5130	5130
16	7.0	Shear (lb)	4665	1555	1555	1555	1555	1555	1475
		Moment (lb-ft)	11020	8285	7600	7120	6805	6635	6565
18	7.0	Shear (lb)	5250	1750	1750	1750	1750	1750	1750
		Moment (lb-ft)	13705	10535	9705	9090	8655	8375	8220

AXIAL LOAD TABLES



Column axial-load reference tables for applicable grades and loading cases, with the original assumptions and technical notes retained.

COLUMNS

FLOOR

ROOF

SNOW

ALLOWABLE AXIAL LOAD FOR COLUMNS

ALLOWABLE AXIAL LOAD FOR COLUMNS NOTES

1. The allowable axial load for columns tables do not consider lateral loads. An accidental eccentricity of 1/6 the column width or depth has been considered.
2. Columns are considered unbraced over the tabulated lengths. Provide lateral restraints in both directions at the column top/bottom and at intermediate locations such that the column unbraced length does not exceed the tabulated length.
3. Columns bearing on wood shall have their capacity reduced if the bearing allowable compression parallel or perpendicular to grain, whichever is applicable to the bearing configuration, is less than the LVL compression parallel to grain. Similarly, columns bearing on hardware shall have their allowable axial load capacities limited to the hardware compression capacity.
4. Allowable axial loads have been reduced for the self-weight of the column.

HOW TO USE THE ALLOWABLE AXIAL LOAD FOR COLUMNS TABLES

1. Compute the allowable stress design axial load on the column.
2. Compare the axial load to the allowable axial load for the applicable load duration (floor, roof, or snow).
3. Verify the axial load does not exceed bearing capacity of the material the column is bearing on.

ALLOWABLE VERTICAL AND LATERAL LOADS FOR WALL FRAMING

ALLOWABLE VERTICAL AND LATERAL LOADS FOR WALL FRAMING NOTES

1. Allowable axial loads consider bearing on an SPF plate (Fcp = 425 psi) with no plate end within 3” of the stud.
2. Allowable vertical loads assume floor loads. Roof and snow loads may permit larger allowable gravity loads for cases not controlled by bearing on a wood plate. Allowable wind shall be based on components and cladding wind pressures.
3. Wall studs are assumed to be laterally braced by continuous sheathing or drywall in the weak axis.
4. A repetitive use factor of 1.04 has been considered for flexural capacity. Spacing of studs shall not exceed 24”.
5. An accidental eccentricity of 1/6 the stud depth has been considered.
6. Deflection values (L/) represent the stud length divided by the service deflection for comparison to span based deflection limits. For example, a tabulated value of 200 for a 10’ stud is equal to 10’/200 = 0.6” of service deflection which is less than an L/120 = 1” deflection limit for flexible finish per IBC. Service wind is assumed to be 0.7 times the allowable components and cladding wind as permitted by the IBC.
7. The zero wind load cases are intended to be used for interior bearing walls without wind loads.

HOW TO USE THE ALLOWABLE VERTICAL AND LATERAL LOADS FOR WALL FRAMING TABLES

1. Compute the allowable stress design axial gravity load in pounds on each stud. Consider the wall weight supported by the stud including the stud self-weight.
2. Compute the allowable components and cladding wind pressure and multiply the pressure by the stud spacing to determine the uniform wind load in pounds per linear foot (plf) on each stud.
3. For the tabulated allowable wind load that exceeds the calculated wind load, determine the allowable vertical load for the appropriate stud length. Ensure the allowable vertical load does not exceed the calculated gravity load and the deflection coefficient exceeds the limiting deflection coefficient for the wall assembly.

2.0E LVL Allowable Axial Load (lbf) with Floor Loads

Column Length (ft)	3.5" x 3.5"	3.5" x 5.25"	3.5" x 7.25"	5.25" x 5.25"	5.25" x 7.25"
4	18044	27067	37378	47672	65833
5	15116	22675	31313	44467	61406
6	12332	18498	25545	40585	56047
7	10064	15096	20847	36229	50031
8	8301	12451	17195	31802	43917
9	6934	10400	14363	27726	38288
10	5863	8794	12144	24184	33398
11	5012	7519	10383	21181	29250
12	4328	6493	8966	18649	25752
13	3771	5656	7811	16510	22801
14	3311	4966	6858	14699	20299
15	0	0	0	13155	18166
16	0	0	0	11831	16337
17	0	0	0	10687	14759
18	0	0	0	9695	13389
19	0	0	0	8829	12193
20	0	0	0	8070	11143
21	0	0	0	7398	10217

2.0E LVL Allowable Axial Load (lbf) with Roof Loads

Column Length (ft)	3.5" x 3.5"	3.5" x 5.25"	3.5" x 7.25"	5.25" x 5.25"	5.25" x 7.25"
4	20863	31296	43217	57822	79850
5	16781	25172	34761	52827	72951
6	13345	20017	27643	46928	64806
7	10728	16093	22224	40714	56225
8	8762	13143	18149	34947	48261
9	7266	10899	15052	30005	41435
10	6111	9166	12658	25893	35758
11	5201	7803	10775	22498	31069
12	4476	6715	9273	19686	27184
13	3888	5833	8055	17342	23949
14	3406	5109	7055	15376	21233
15	0	0	0	13713	18936
16	0	0	0	12296	16979
17	0	0	0	11079	15300
18	0	0	0	10028	13849
19	0	0	0	9115	12587
20	0	0	0	8316	11484
21	0	0	0	7613	10513

2.0E LVL Allowable Axial Load (lbf) with Snow Loads

Column Length (ft)	3.5" x 3.5"	3.5" x 5.25"	3.5" x 7.25"	5.25" x 5.25"	5.25" x 7.25"
4	19807	29712	41030	53848	74362
5	16174	24261	33503	49612	68512
6	12976	19464	26879	44552	61526
7	10486	15730	21723	39070	53955
8	8594	12891	17802	33802	46679
9	7145	10718	14802	29175	40289
10	6021	9031	12471	25271	34899
11	5133	7700	10633	22018	30407
12	4422	6634	9162	19308	26663
13	3846	5769	7967	17040	23531
14	3372	5057	6984	15130	20893
15	0	0	0	13510	18656
16	0	0	0	12127	16746
17	0	0	0	10937	15103
18	0	0	0	9908	13682
19	0	0	0	9012	12444
20	0	0	0	8227	11360
21	0	0	0	7535	10406

1.4E LVL Allowable Axial Load (lbf) with Floor Loads

Column Length (ft)	3.5" x 3.5"	3.5" x 5.25"	3.5" x 7.25"	5.25" x 5.25"	5.25" x 7.25"
4	12574	18861	26046	33059	46733
5	10391	15586	21524	30590	43216
6	8422	12633	17446	27675	39050
7	6857	10287	14206	24505	34516
8	5651	8477	11707	21405	30091
9	4718	7077	9774	18628	26139
10	3987	5981	8260	16245	22760
11	3407	5111	7057	14232	19913
12	2940	4410	6091	12537	17520
13	2559	3839	5301	11104	15504
14	2245	3367	4650	9889	13795
15	0	0	0	8852	12339
16	0	0	0	7961	11090
17	0	0	0	7190	10012
18	0	0	0	6521	9075
19	0	0	0	5936	8257
20	0	0	0	5422	7539
21	0	0	0	4967	6905

1.4E LVL Allowable Axial Load (lbf) with Roof Loads

Column Length (ft)	3.5" x 3.5"	3.5" x 5.25"	3.5" x 7.25"	5.25" x 5.25"	5.25" x 7.25"
4	14436	21655	29904	39956	56469
5	11484	17226	23789	36159	51049
6	9100	13650	18850	31815	44837
7	7308	10962	15139	27427	38569
8	5965	8948	12357	23489	32962
9	4946	7418	10245	20163	28246
10	4157	6236	8612	17410	24353
11	3537	5306	7327	15137	21148
12	3041	4563	6302	13253	18496
13	2640	3960	5469	11680	16288
14	2310	3465	4786	10359	14435
15	0	0	0	9240	12867
16	0	0	0	8285	11531
17	0	0	0	7464	10383
18	0	0	0	6754	9392
19	0	0	0	6136	8529
20	0	0	0	5595	7773
21	0	0	0	5117	7109

1.4E LVL Allowable Axial Load (lbf) with Snow Loads

Column Length (ft)	3.5" x 3.5"	3.5" x 5.25"	3.5" x 7.25"	5.25" x 5.25"	5.25" x 7.25"
4	13742	20614	28466	37262	52667
5	11084	16626	22960	34026	48051
6	8852	13278	18337	30269	42680
7	7143	10716	14798	26353	37082
8	5851	8777	12120	22726	31913
9	4863	7294	10074	19602	27476
10	4096	6144	8484	16984	23772
11	3489	5235	7229	14807	20698
12	3005	4508	6225	12992	18140
13	2611	3916	5408	11471	16003
14	2287	3430	4736	10188	14202
15	0	0	0	9099	12675
16	0	0	0	8167	11371
17	0	0	0	7364	10248
18	0	0	0	6669	9277
19	0	0	0	6063	8430
20	0	0	0	5532	7688
21	0	0	0	5062	7035

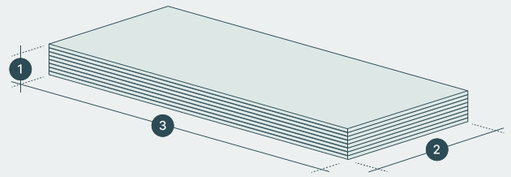
LAMINATED VENEER LUMBER

VMG LIGNUM LVL

Grades

2.0E Fb 3050 psi & **1.4E** Fb 1850 psi

MANUFACTURING CAPABILITIES



1. Standard thicknesses: 1-1/2", 1-3/4", 3-1/2"
2. Depth: 3-1/2" - 72"
3. Length: Up to 60'

Optional protection: Water-resistant coating and sealed edges

Lengthwise joining: Scarf-jointed LVL sections

KEY BENEFITS OF OUR LVL

- Available in lengths up to 60ft
- Easy to handle and install
- Consistent shape and size
- Stronger and straighter than sawn timber
- Superior dimensional stability and longer spans
- Customizable shapes for different applications
- Tolerant of holes and notches
- High strength-to-density ratio
- Efficient and sustainable use of wood resources



ENGINEERED FOR

U.S. CONSTRUCTION

VMG LIGNUM LVL combines engineered strength, dimensional stability, and consistent quality for a wide range of residential, commercial, and public construction projects. Evaluated under ICC-ES ESR-5621, it offers documented structural performance for specified applications and conditions of use.



▸ Water based sides yellow sealant/green colored wax-based edge sealant



▸ Lengthwise joining: Scarf-jointed LVL sections

VMG LIGNUM LVL STRUCTURAL APPLICATIONS:

Beams and Headers
Load-bearing beams and headers

Floor Framing
Floor beams and supporting members

Roof Framing
Rafters, ridge beams and roof supports

Wall Framing
Structural framing components

Custom Applications
Project-specific structural solutions

Engineered Wood Structures
Selected structural applications

BEAM ORIENTATION[3]					PLANK ORIENTATION[3]					AXIAL	
Modulus of elasticity		Bending [7,8]	Shear	Compression Perp-to-Grain	Modulus of elasticity		Bending	Shear	Compression Perp-to-Grain	Compression	Tension
E_{true}[4]	$E_{apparent}$[5,6]	F_b	F_v	$F_{c\perp}$ [10]	E_{true}[4]	$E_{apparent}$[5,6]	F_b	F_v	$F_{c\perp}$ [10]	F_c	F_t [9]
(x10⁶ psi)	(x106 psi)	(psi)	(psi)	(psi)	(x106 psi)	(x106 psi)	(psi)	(psi)	(psi)	(psi)	(psi)
1.4	1.3	1,850	250	550	1.4	1.3	2,200	150	300	2,300	1,600
2.0	1.9	3,050	350	700	2.0	1.9	3,300	150	380	3,000	2,700



LET'S BUILD YOUR LVL SUPPLY PLAN.

Tell us what you need. We'll help you review product specifications, documentation and supply options.

REQUEST A PRODUCT & SUPPLY DISCUSSION

- GRADES
- DIMENSIONS
- ESTIMATED VOLUME
- U.S. DESTINATION

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