

VMG LIGNUM LVL

GRADE 2.0E
SNOW LOAD TABLES



UNIFORM LOAD SPAN TABLES

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, C_b , 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 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.

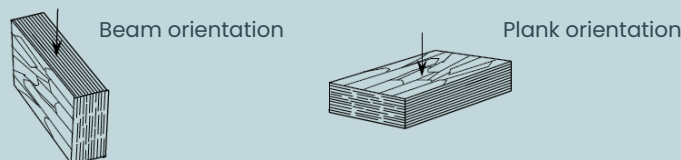


Figure 1 – an illustration of beam and plank orientation as noted in table 1

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 _{c1} ¹⁰ (psi)	Modulus of elasticity		Bending F _b (psi)	Shear F _v (psi)	Compression Perp-to-Grain F _{c1} 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_{c1}, in accordance with the 2024 and 2018 NDS.

SNOW LOAD TABLE 115% LOAD DURATION (PLF)

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 LOAD TABLE 115% LOAD DURATION (PLF)

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

SNOW LOAD TABLE 115% LOAD DURATION (PLF)

Clear span (ft)		VMG LIGNUM 2.0E LVL, 1 Ply, 1.75" 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	383	1271	1956	2576	2576	2575	2575	2574	2573	2572	2571	2570	2569
	Total Load	509	1271	1956	2576	2576	2575	2575	2574	2573	2572	2571	2570	2569
	Req Brg (in) SPF	1.5 / 3	3.2 / 8	5.3 / 13.3	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	7.5 / 18.8	7.5 / 18.8
	Req Brg (in) LVL	1.5 / 2.2	2.4 / 5.9	3.9 / 9.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
5	Snow L/240	203	722	1343	1960	2041	2162	2162	2161	2160	2159	2158	2157	2156
	Total Load	269	850	1343	1960	2041	2162	2162	2161	2160	2159	2158	2157	2156
	Req Brg (in) SPF	1.5 / 2	2.6 / 6.5	4.3 / 10.8	6.7 / 16.8	7 / 17.5	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	1.9 / 4.8	3.2 / 7.9	4.9 / 12.3	5.2 / 12.9	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
6	Snow L/240	119	435	938	1447	1508	1863	1863	1862	1861	1860	1859	1858	1857
	Total Load	157	578	971	1447	1508	1863	1863	1862	1861	1860	1859	1858	1857
	Req Brg (in) SPF	1.5 / 1.5	2.1 / 5.3	3.6 / 9	5.6 / 14	5.9 / 14.8	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 / 1.5	1.5 / 3.9	2.7 / 6.6	4.1 / 10.3	4.3 / 10.9	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
7	Snow L/240	76	282	614	1104	1152	1514	1637	1636	1635	1634	1633	1632	1631
	Total Load	100	374	731	1104	1152	1514	1637	1636	1635	1634	1633	1632	1631
	Req Brg (in) SPF	1.5 / 1.5	1.6 / 4	3.1 / 7.8	4.8 / 12	5.1 / 12.8	6.9 / 17.3	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 / 2.9	2.3 / 5.7	3.5 / 8.8	3.8 / 9.4	5.1 / 12.7	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
8	Snow L/240	51	193	422	837	899	1199	1310	1458	1457	1456	1455	1454	1453
	Total Load	66	254	559	866	904	1199	1310	1458	1457	1456	1455	1454	1453
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 3	2.7 / 6.8	4.2 / 10.5	4.5 / 11.3	6.1 / 15.3	6.7 / 16.8	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 / 2.2	2 / 5	3.1 / 7.7	3.3 / 8.3	4.5 / 11.2	4.9 / 12.3	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
9	Snow L/240	36	137	304	603	649	971	1062	1315	1314	1313	1312	1311	1311
	Total Load	46	180	402	695	727	971	1062	1315	1314	1313	1312	1311	1311
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 2.5	2.1 / 5.3	3.8 / 9.5	4 / 10	5.4 / 13.5	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
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.8	1.5 / 3.9	2.8 / 7	2.9 / 7.4	4 / 10	4.4 / 11.1	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
10	Snow L/240	26	100	224	448	483	778	877	1154	1197	1196	1195	1194	1193
	Total Load	33	131	296	570	596	799	877	1154	1197	1196	1195	1194	1193
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 2	1.8 / 4.5	3.4 / 8.5	3.6 / 9	4.9 / 12.3	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
	Req Brg (in) LVL	1.5 / 1.5	1.5 / 1.5	1.5 / 3.3	2.5 / 6.3	2.7 / 6.6	3.6 / 9	4 / 10	5.4 / 13.5	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
11	Snow L/240	20	76	170	342	369	597	694	973	1098	1098	1097	1096	1095
	Total Load	25	98	224	452	488	669	735	973	1098	1098	1097	1096	1095
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.8	1.5 / 3.8	3 / 7.5	3.2 / 8	4.4 / 11	4.9 / 12.3	6.6 / 16.5	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 / 2.8	2.2 / 5.5	2.4 / 5.9	3.2 / 8.1	3.6 / 9	4.9 / 12.2	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
12	Snow L/240	15	59	132	268	289	466	544	828	1015	1014	1013	1012	1011
	Total Load	19	76	173	353	381	567	624	828	1015	1014	1013	1012	1011
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 3	2.5 / 6.3	2.7 / 6.8	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 / 2.2	1.8 / 4.6	2 / 5	3 / 7.6	3.3 / 8.3	4.5 / 11.2	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
13	Snow L/240	12	46	105	213	230	371	434	692	897	942	941	940	940
	Total Load	14	59	136	280	302	486	536	714	897	942	941	940	940
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.8	2.1 / 5.3	2.3 / 5.8	3.8 / 9.5	4.1 / 10.3	5.6 / 14	7.2 / 18	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	1.5 / 3.9	1.7 / 4.2	2.8 / 7	3 / 7.6	4.1 / 10.3	5.3 / 13.3	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
14	Snow L/240	--	37	84	172	186	301	351	562	782	880	879	878	877
	Total Load	--	47	109	225	243	397	463	621	782	880	879	878	877
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.9 / 4.8	2 / 5	3.3 / 8.3	3.8 / 9.5	5.2 / 13	6.7 / 16.8	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 / 1.7	1.5 / 3.5	1.5 / 3.7	2.4 / 6.1	2.8 / 7	3.8 / 9.6	4.9 / 12.3	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8

SNOW LOAD TABLE 115% LOAD DURATION (PLF)

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	--	30	69	141	152	248	289	462	675	825	824	823	823
	Total Load	--	38	88	183	198	325	380	544	687	825	824	823	823
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.6 / 4	1.8 / 4.5	2.9 / 7.3	3.4 / 8.5	4.9 / 12.3	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 / 2.9	1.5 / 3.3	2.1 / 5.3	2.5 / 6.3	3.6 / 9	4.6 / 11.4	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
16	Snow L/240	--	25	57	116	126	206	240	384	563	746	776	775	774
	Total Load	--	31	72	151	163	269	315	480	608	746	776	775	774
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.8	1.5 / 3.5	1.6 / 4	2.5 / 6.3	3 / 7.5	4.6 / 11.5	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 / 2.6	1.5 / 2.9	1.8 / 4.6	2.2 / 5.5	3.4 / 8.5	4.3 / 10.7	5.3 / 13.3	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
17	Snow L/240	--	21	47	97	105	173	202	323	474	662	733	732	731
	Total Load	--	25	60	125	136	225	264	424	541	666	733	732	731
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3.3	1.5 / 3.5	2.3 / 5.8	2.7 / 6.8	4.3 / 10.8	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 / 2.4	1.5 / 2.6	1.7 / 4.2	2 / 5	3.2 / 7.9	4.1 / 10.1	5 / 12.5	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
18	Snow L/240	--	17	40	82	89	146	171	275	403	564	694	694	693
	Total Load	--	21	50	105	114	190	223	360	485	597	694	694	693
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 3	1.5 / 3	2 / 5	2.4 / 6	3.8 / 9.5	5.2 / 13	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 / 2.2	1.5 / 2.2	1.5 / 3.7	1.8 / 4.4	2.8 / 7	3.8 / 9.6	4.7 / 11.8	5.5 / 13.8	5.5 / 13.8	5.5 / 13.8
19	Snow L/240	--	15	34	70	76	125	146	235	345	484	647	659	658
	Total Load	--	17	42	89	97	161	190	307	437	538	647	659	658
	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	3.5 / 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 / 1.8	1.5 / 2	1.5 / 3.3	1.5 / 3.9	2.6 / 6.5	3.6 / 9	4.5 / 11.2	5.5 / 13.6	5.5 / 13.8	5.5 / 13.8
20	Snow L/240	--	13	29	60	65	107	126	203	298	418	565	627	626
	Total Load	--	14	36	76	83	138	162	264	390	487	587	627	626
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2.3	1.5 / 2.5	1.7 / 4.3	1.9 / 4.8	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 / 1.7	1.5 / 1.8	1.5 / 3.1	1.5 / 3.5	2.3 / 5.7	3.4 / 8.5	4.3 / 10.7	5.2 / 12.9	5.5 / 13.8	5.5 / 13.8
22	Snow L/240	--	--	22	45	49	81	95	154	227	318	431	566	572
	Total Load	--	--	26	56	61	103	121	199	295	405	488	573	572
	Req Brg (in) SPF	1.5 / 1.5	1.5 / 1.5	1.5 / 1.5	1.5 / 2	1.5 / 2.3	1.5 / 3.5	1.6 / 4	2.6 / 6.5	3.8 / 9.5	5.3 / 13.3	6.4 / 16	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 / 1.7	1.5 / 2.6	1.5 / 2.9	1.9 / 4.8	2.8 / 7	3.9 / 9.8	4.7 / 11.8	5.5 / 13.8	5.5 / 13.8
24	Snow L/240	--	--	17	35	38	63	74	119	176	248	335	441	525
	Total Load	--	--	19	42	46	78	93	153	228	322	412	489	525
	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 / 3	1.5 / 3.5	2.2 / 5.5	3.2 / 8	4.6 / 11.5	5.9 / 14.8	7 / 17.5	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 / 2.2	1.5 / 2.6	1.6 / 4.1	2.4 / 5.9	3.4 / 8.5	4.3 / 10.9	5.2 / 12.9	5.5 / 13.8
26	Snow L/240	--	--	13	28	30	49	58	94	140	197	266	351	451
	Total Load	--	--	14	32	35	61	72	119	179	254	346	418	486
	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	3.9 / 9.8	5.3 / 13.3	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 / 1.8	1.5 / 2.2	1.5 / 3.5	2.1 / 5.2	2.9 / 7.2	3.9 / 9.8	4.8 / 12	5.5 / 13.8
28	Snow L/240	--	--	11	22	24	40	47	76	112	159	215	283	364
	Total Load	--	--	11	25	28	48	57	95	143	203	278	361	422
	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	6 / 15	7 / 17.5
	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 / 1.7	1.5 / 1.8	1.5 / 2.9	1.8 / 4.4	2.5 / 6.3	3.4 / 8.5	4.4 / 11.1	5.2 / 12.9
30	Snow L/240	--	--	--	18	19	32	38	62	92	130	176	232	299
	Total Load	--	--	--	20	22	38	45	76	115	165	226	300	368
	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 / 2.3	1.5 / 3.5	2.1 / 5.3	3 / 7.5	4 / 10	5.3 / 13.3	6.6 / 16.5
	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 / 1.7	1.5 / 2.6	1.5 / 3.9	2.2 / 5.5	2.9 / 7.4	3.9 / 9.8	4.9 / 12.2

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.

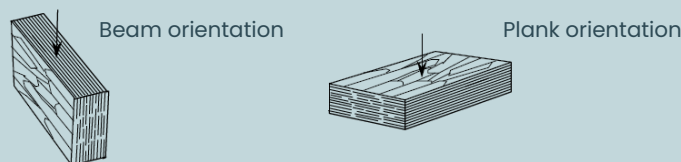


Figure 1 – an illustration of beam and plank orientation as noted in table1

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 _{c1} ¹⁰ (psi)	Modulus of elasticity		Bending F _b (psi)	Shear F _v (psi)	Compression Perp-to-Grain F _{c1} 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 $3\frac{1}{2}$ 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, $F_{c1'}$ in accordance with the 2024 and 2018 NDS.