

Rosboro Glulam Beams: Design Values¹

Product	Layup Combination	Flexural Stress F_b (psi) ²		Compression Perpendicular to Grain F_c (psi)	Shear F_v (psi) ³	Modulus of Elasticity E (10 ⁶ psi)
		Tension Zone	Compression Zone			
BigBeam	30F-E2M3	3,000	3,000	650	300	2.1
Stock Glulam	24F-V4/DF	2,400	1,850	650	265	1.8
Treated Glulam	24F-V5M1/SP	2,400	2,400	740	300	1.8
Wet-Use factor		0.80	0.80	0.53	0.875	0.833

(1) The tabulated values are for dry conditions of use (moisture content of less than 16%). For Wet-Use, the design values shall be multiplied by the Wet-Use factor given at the bottom of the table.

(2) F_b shall be adjusted by the volume effect factor using the following formula:

$$C_v = (5.125/b)^{1/4} \times (12/d)^{1/4} \times (21/L)^{1/4} \leq 1.0$$

where: b = beam width (in.),

d = beam depth (in.),

L = beam length (ft.), and

x = 10 for BigBeam, Stock Glulam, and x = 20 for Treated Glulam

(3) For non-prismatic members, notched members, members subject to impact or cyclic loading, or shear design of bending members at connections (NDS-05, 3.4.3.3), the design shear (F_v) shall be multiplied by a factor of 0.72.

Minimum Bearing Length (in.)

Product	Width (in.)	Reaction (lbf)																	
		3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000	30,000
Treated Glulam - Dry-Use ($F_{c1} = 740$ psi)	3 1/2	1.50	1.54	1.93	2.32	2.70	3.09	3.47	3.86	4.63	5.41	6.18	6.95	7.72	8.49	9.27	10.04	10.81	11.58
	5 7/16	1.50	1.50	1.50	1.50	1.74	1.99	2.24	2.49	2.98	3.48	3.98	4.47	4.97	5.47	5.96	6.46	6.96	7.46
Treated Glulam - Wet-Use ($F_{c1} = 392$ psi)	3 1/2	2.19	2.92	3.64	4.37	5.10	5.83	6.56	7.29	8.75	10.20	11.66	13.12	14.58	16.03	17.49	18.95	20.41	21.87
	5 7/16	1.50	1.88	2.35	2.81	3.28	3.75	4.22	4.69	5.63	6.57	7.51	8.44	9.38	10.32	11.26	12.20	13.14	14.07

(1) Minimum bearing length is 1 1/2".

(2) Bearing across full width of the beam is required.

(3) Bearing length shall be adjusted when the allowable bearing stress of the supporting member is less than the tabulated F_{c1} values of the glulam beam.

Treated Glulam Design Properties EWS 24F-V5M1/SP Dry-Use $F_b = 2,400$ psi $F_v = 300$ psi $E = 1.8 \times 10^6$ psi $F_{c1} = 740$ psi	Width (in.)	Depth (in.)	Weight (lbf/ft.)	Maximum Resistive Shear (lbf)			Maximum Resistive Moment (ft.-lbf)			EI (10 ⁶ in. ² -lb)
				100%	115%	125%	100%	115%	125%	
	3 1/2		9 1/2	9.5	6,650	7,648	8,313	10,529	12,109	13,161
11 7/8			11.8	8,313	9,559	10,391	16,452	18,920	20,565	878
14			14.0	9,800	11,270	12,250	22,867	26,297	28,583	1,440
16			15.9	11,200	12,880	14,000	29,867	34,347	37,333	2,151
18			17.9	12,600	14,490	15,750	37,800	43,470	47,250	3,062
5 7/16		9 1/2	14.7	10,331	11,881	12,914	16,358	18,811	20,447	698
		11 7/8	18.4	12,914	14,851	16,143	25,559	29,393	31,949	1,366
		14	21.7	15,225	17,509	19,031	35,525	40,854	44,406	2,237
		16	24.8	17,400	20,010	21,750	46,400	53,360	58,000	3,341
		18	27.9	19,575	22,511	24,469	58,725	67,534	73,406	4,757

(1) Beam weight is assumed to be 41 pcf.

(2) Maximum resistive moment shall be adjusted by the volume factor based on NDS-05.

