

X-Beam: Technical Specifications

Stock Glulam Specs

This stock glulam specification is intended to provide design values and product attributes for X-Beam Glulam that is inventoried in standard sizes by a nationwide network of distributors and lumber dealers that provide next-day delivery.

Certification Specs

Rosboro glulam products are inspected and certified by the APA/EWS to ANSI A190.1-2017 and ANSI 117-2015 standards. The products meet all International Residential Code (IRC) and International Building Code (IBC) specifications as reported by ICC-ES ESR-1940 and APA Product Report PR-L251.

Design Values

Glulam shall be Douglas Fir combination 24F-V4.

ROSBORO X-BEAM™ DESIGN VALUES

Product	Layup Combination	Flexural Stress F_b (psi)		Compression Perpendicular to Grain $F_{c\perp}$ (psi)	Shear F_v (psi)	MOE (10^6 psi)	
		Tension Zone	Compression Zone			Apparent	True
X-Beam	24F-V4	2,400	1,850	650	265	1.8	1.9

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

$$C_v = (5.125/b)^{1/10} \times (12/d)^{1/10} \times (21/L)^{1/10} \leq 1.0 \text{ (NDS-18 Eq. 5.3-1)}$$

where: b = beam width (in), d = beam depth (in), L = beam length (ft)

(2) For non-prismatic members, notched members, members subject to impact or cyclic loading, or shear design of bending members at connections (NDS-18 5.3.10), the design shear (F_v) shall be multiplied by a factor of 0.72.

(3) The F_v values do not include adjustments for checking.

Beam Widths

3½" • 5½" • 6¾" • 8¾"

Beam Depths

Conventional depths 6" to 24" in 1½" increments

I-Joist compatible depths 9½" • 11⅞" • 14" • 16" • 18"



ROSBORO X-BEAM™ DESIGN PROPERTIES


EWS 24F-V4 | Dry-Use | $F_b=2,400$ psi | $F_v=265$ psi | $F_{c1}=650$ psi | $E_{Apparent}=1.8 \times 10^6$ psi | $E_{True}=1.9 \times 10^6$ psi

Width	Depth (in)	Weight (lbf / ft)	Maximum Resistive Shear (lbf)			Maximum Resistive Moment (ft-lbf)			EI Apparent (10 ⁶ in ² -lbf)
			100%	115%	125%	100%	115%	125%	
3½"	6	5.1	3,710	4,267	4,638	4,200	4,830	5,250	113
	7 1/2	6.4	4,638	5,333	5,797	6,563	7,547	8,203	221
	9	7.7	5,565	6,400	6,956	9,450	10,868	11,813	383
	9 1/2	8.1	5,874	6,755	7,343	10,529	12,109	13,161	450
	10 1/2	8.9	6,493	7,466	8,116	12,863	14,792	16,078	608
	11 7/8	10.1	7,343	8,444	9,178	16,452	18,920	20,565	879
	13 1/2	11.5	8,348	9,600	10,434	21,263	24,452	26,578	1,292
	14	11.9	8,657	9,955	10,821	22,867	26,297	28,583	1,441
	15	12.8	9,275	10,666	11,594	26,250	30,188	32,813	1,772
	16	13.6	9,893	11,377	12,367	29,867	34,347	37,333	2,150
	16 1/2	14.0	10,203	11,733	12,753	31,763	36,527	39,703	2,358
5½"	6	8.0	5,830	6,705	7,288	6,600	7,590	8,250	178
	7 1/2	10.0	7,288	8,381	9,109	10,313	11,859	12,891	348
	9	12.0	8,745	10,057	10,931	14,850	17,078	18,563	601
	9 1/2	12.7	9,231	10,615	11,539	16,546	19,028	20,682	707
	10 1/2	14.0	10,203	11,733	12,753	20,213	23,244	25,266	955
	11 7/8	15.9	11,539	13,269	14,423	25,853	29,731	32,316	1,382
	13 1/2	18.0	13,118	15,085	16,397	33,413	38,424	41,766	2,030
	14	18.7	13,603	15,644	17,004	35,933	41,323	44,917	2,264
	15	20.1	14,575	16,761	18,219	41,250	47,438	51,563	2,784
	16	21.4	15,547	17,879	19,433	46,933	53,973	58,667	3,379
	16 1/2	22.1	16,033	18,437	20,041	49,913	57,399	62,391	3,706
6¾"	9	14.8	10,733	12,342	13,416	18,225	20,959	22,781	738
	10 1/2	17.2	12,521	14,399	15,652	24,806	28,527	31,008	1,172
	11 7/8	19.5	14,161	16,285	17,701	31,729	36,488	39,661	1,695
	13 1/2	22.1	16,099	18,514	20,123	41,006	47,157	51,258	2,491
	15	24.6	17,888	20,571	22,359	50,625	58,219	63,281	3,417
	16 1/2	27.1	19,676	22,628	24,595	61,256	70,445	76,570	4,548
	18	29.5	21,465	24,685	26,831	72,900	83,835	91,125	5,905
	19 1/2	32.0	23,254	26,742	29,067	85,556	98,390	106,945	7,508
	21	34.5	25,043	28,799	31,303	99,225	114,109	124,031	9,377
	22 1/2	36.9	26,831	30,856	33,539	113,906	130,992	142,383	11,533
	24	39.4	28,620	32,913	35,775	129,600	149,040	162,000	13,997
8¾"	9	19.1	13,913	15,999	17,391	23,625	27,169	29,531	957
	10 1/2	22.3	16,231	18,666	20,289	32,156	36,980	40,195	1,519
	11 7/8	25.3	18,357	21,110	22,946	41,130	47,299	51,412	2,198
	13 1/2	28.7	20,869	23,999	26,086	53,156	61,130	66,445	3,229
	15	31.9	23,188	26,666	28,984	65,625	75,469	82,031	4,430
	16 1/2	35.1	25,506	29,332	31,883	79,406	91,317	99,258	5,896
	18	38.3	27,825	31,999	34,781	94,500	108,675	118,125	7,655
19 1/2	41.5	30,144	34,665	37,680	110,906	127,542	138,633	9,732	

Notes for X-Beam Design Properties:

(1) Beam weight is assumed to be 35 pcf.

(2) Maximum resistive moment shall be adjusted by the volume factor based on NDS-18.

 Indicates I-Joist Compatible Depths