

## Published Technical Values for Deep BigBeam



High Performance 2.1E IJC-Glulam

BigBeam Design Values	Lay-up Combination	Flexural Stress $F_b$ (psi)		Compression Perpendicular to Grain $F_{c\perp}$ (psi)	Shear <sup>1</sup> $F_v$ (psi)	Modulus of Elasticity MOE (psi)
		Tension Zone	Compression Zone			
	30F-E2M3	3,000	3,000	650	300	2,100,000

Notes:

(1) Shear values should be decreased by 10% when beam is subject to conditions that cause severe checking.

BigBeam Design Properties	Beam Width (in)	Beam Depth (in)	Weight (lb/ft)	Resistive Shear (lb/ft)			Maximum Resistive Moment (ft-lbf)			Moment of Inertia (in.)
				100%	115%	125%	100%	115%	125%	
	5 7/16	20	27.2	21,750	25,013	27,188	90,625	104,219	113,281	3,625
22		29.9	23,925	27,514	29,906	109,656	126,105	137,070	4,825	
24		32.6	26,100	30,015	32,625	130,500	150,075	163,125	6,264	
26		35.3	28,275	32,516	35,344	153,156	176,130	191,445	7,964	
28		38.1	30,450	35,018	38,063	177,625	204,269	222,031	9,947	
30		40.8	32,625	37,519	40,781	203,906	234,492	254,883	12,234	
7	20	35.0	28,000	32,200	35,000	116,667	134,167	145,833	4,667	
	22	38.5	30,800	35,420	38,500	141,167	162,342	176,458	6,211	
	24	42.0	33,600	38,640	42,000	168,000	193,200	210,000	8,064	
	26	45.5	36,400	41,860	45,500	197,167	226,742	246,458	10,253	
	28	49.0	39,200	45,080	49,000	228,667	262,967	285,833	12,805	
	30	52.5	42,000	48,300	52,500	262,500	301,875	328,125	15,750	

Notes:

- (1) Beam weight is assumed to be 36 pcf.
- (2) Maximum resistive moment shall be adjusted by the volume factor based on NDS-97.
- (3) Maximum resistive shear shall be reduced by 10% if checking is a consideration.

Minimum Bearing Length (in)	Beam width (in)	Reaction (lb/ft)																	
		4,000	6,000	8,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000	60,000	65,000	70,000	75,000	80,000
5 7/16	1.50	1.70	2.26	2.83	4.24	5.66	7.07	8.49	9.90	11.32	12.73	14.15	15.56	16.98	18.39	19.81	21.22	22.63	
7	1.50	1.50	1.76	2.20	3.30	4.40	5.49	6.59	7.69	8.79	9.89	10.99	12.09	13.19	14.29	15.38	16.48	17.58	

Notes:

- (1) Bearing lengths shall be adjusted when the allowable bearing stress of the support member is less than 650 psi.
- (2) Minimum bearing length is 1 1/2".
- (3) Bearing length across the full width of the beam is required.

**Rosboro**

Revised, November 2002

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High Performance 2.1E IJC-Glulam

**BigBeam  
Allowable  
Floor Loads**  
(lb/ft)  
for Simple Span  
Applications  
(Load Duration  
Factor = 1.0)

Width (in)	Depth (in)	Load Condition	Span (feet)															
			20	22	24	26	28	30	32	34	36	38	40	42	44	46		
5 7/16	20	Live Load	L/360	1,410	1,059	816	642	514	418	344	287	242	206	176	152	132	116	
			L/480	1,057	794	612	481	385	313	258	215	181	154	132	114	99	87	
		Total Load	L/240	1,693	1,381	1,146	935	743	599	489	403	335	281	237	201	171	147	
	22	Live Load	L/360	1,876	1,410	1,086	854	684	556	458	382	322	274	235	203	176	154	
			L/480	1,407	1,057	814	641	513	417	344	286	241	205	176	152	132	116	
		Total Load	L/240	2,032	1,658	1,376	1,159	987	804	657	543	453	380	322	274	234	201	
	24	Live Load	L/360	2,400	1,830	1,410	1,109	888	722	595	496	418	355	305	263	229	200	
			L/480	1,827	1,373	1,057	832	666	541	446	372	313	266	228	197	172	150	
		Total Load	L/240	2,400	1,959	1,626	1,370	1,167	1,006	859	711	594	500	424	362	311	268	
	26	Live Load	L/360	2,797	2,283	1,792	1,410	1,129	918	756	630	531	452	387	334	291	255	
			L/480	2,323	1,745	1,344	1,057	847	688	567	473	398	339	290	251	218	191	
		Total Load	L/240	2,797	2,283	1,896	1,597	1,362	1,173	1,020	894	761	642	545	466	401	346	
	28	Live Load	L/360	3,222	2,631	2,185	1,761	1,410	1,146	944	787	663	564	484	418	363	318	
			L/480	2,901	2,180	1,679	1,321	1,057	860	708	591	497	423	363	313	272	238	
		Total Load	L/240	3,222	2,631	2,185	1,841	1,570	1,353	1,177	1,032	911	808	687	588	507	439	
	30	Live Load	L/360	3,676	3,002	2,494	2,102	1,734	1,410	1,162	968	816	694	595	514	447	391	
			L/480	3,568	2,681	2,065	1,624	1,300	1,057	871	726	612	520	446	385	335	293	
		Total Load	L/240	3,676	3,002	2,494	2,102	1,793	1,546	1,345	1,179	1,041	925	826	730	629	546	
	7	20	Live Load	L/360	1,815	1,363	1,050	826	661	538	443	369	311	265	227	196	170	149
				L/480	1,361	1,023	788	620	496	403	332	277	233	198	170	147	128	112
			Total Load	L/240	2,125	1,733	1,438	1,204	957	772	630	519	432	362	305	259	221	189
		22	Live Load	L/360	2,416	1,815	1,398	1,099	880	716	590	492	414	352	302	261	227	199
				L/480	1,812	1,361	1,048	825	660	537	442	369	311	264	226	196	170	149
			Total Load	L/240	2,550	2,080	1,726	1,453	1,238	1,035	846	699	583	490	414	353	302	259
24		Live Load	L/360	3,012	2,356	1,815	1,427	1,143	929	766	638	538	457	392	339	295	258	
			L/480	2,352	1,767	1,361	1,071	857	697	574	479	403	343	294	254	221	193	
		Total Load	L/240	3,012	2,458	2,040	1,718	1,464	1,261	1,096	915	765	644	546	466	400	345	
26		Live Load	L/360	3,510	2,865	2,307	1,815	1,453	1,181	973	812	684	581	498	431	374	328	
			L/480	2,990	2,247	1,731	1,361	1,090	886	730	609	513	436	374	323	281	246	
		Total Load	L/240	3,510	2,865	2,379	2,004	1,708	1,472	1,279	1,121	980	826	702	600	516	446	
28		Live Load	L/360	4,044	3,301	2,742	2,267	1,815	1,476	1,216	1,014	854	726	622	538	468	409	
			L/480	3,735	2,806	2,161	1,700	1,361	1,107	912	760	640	545	467	403	351	307	
		Total Load	L/240	4,044	3,301	2,742	2,310	1,970	1,698	1,476	1,294	1,142	1,014	885	758	653	565	
30		Live Load	L/360	4,613	3,767	3,129	2,637	2,232	1,815	1,495	1,247	1,050	893	766	661	575	503	
			L/480	4,594	3,451	2,658	2,091	1,674	1,361	1,122	935	788	670	574	496	431	378	
		Total Load	L/240	4,613	3,767	3,129	2,637	2,249	1,939	1,686	1,479	1,305	1,160	1,036	930	810	703	

Notes:

- (1) Applicable to dry-use service conditions.
- (2) Tabulated live load is based on the deflection criterion of either span/360 or span/480.
- (3) Tabulated total load is based on the deflection criterion of span/240.
- (4) Tabulated total load is in addition to the beam weight (assumed 36 pcf).
- (5) Selected beam size shall satisfy both live load and total load.



High Performance 2.1E IJC-Glulam

**BigBeam Allowable Roof Loads**  
(lbf/ft)  
for Simple Span Applications  
(Load Duration Factor = 1.15)

Width (in)	Depth (in)	Load Condition	Span (feet)															
			20	22	24	26	28	30	32	34	36	38	40	42	44	46		
5 7/16	20	Live Load	L/360	1,951	1,589	1,224	962	771	627	516	430	363	308	264	228	199	174	
			L/480	1,410	1,059	816	642	514	418	344	287	242	206	176	152	132	116	
		Total Load	L/240	1,951	1,592	1,322	1,113	949	808	661	547	456	384	325	277	238	205	
	22	Live Load	L/360	2,341	1,911	1,587	1,281	1,026	834	687	573	483	410	352	304	264	231	
			L/480	1,876	1,410	1,086	854	684	556	458	382	322	274	235	203	176	154	
		Total Load	L/240	2,341	1,911	1,587	1,337	1,140	982	854	734	614	517	439	375	323	279	
	24	Live Load	L/360	2,765	2,257	1,875	1,580	1,332	1,083	892	744	627	533	457	395	343	300	
			L/480	2,436	1,830	1,410	1,109	888	722	595	496	418	355	305	263	229	200	
		Total Load	L/240	2,765	2,257	1,875	1,580	1,347	1,161	1,010	885	782	678	576	493	425	368	
	26	Live Load	L/360	3,222	2,631	2,186	1,842	1,571	1,355	1,134	946	797	677	581	502	436	382	
			L/480	3,097	2,327	1,792	1,410	1,129	918	756	630	531	452	387	334	291	255	
		Total Load	L/240	3,222	2,631	2,186	1,842	1,571	1,355	1,179	1,033	913	811	724	634	546	474	
	28	Live Load	L/360	3,712	3,031	2,519	2,123	1,812	1,562	1,359	1,181	995	846	725	627	545	477	
			L/480	3,712	2,906	2,239	1,761	1,410	1,146	944	787	663	564	484	418	363	318	
		Total Load	L/240	3,712	3,031	2,519	2,123	1,812	1,562	1,359	1,192	1,053	936	837	751	678	598	
	30	Live Load	L/360	4,234	3,459	2,874	2,423	2,068	1,784	1,552	1,362	1,203	1,040	892	771	670	587	
			L/480	4,234	3,459	2,753	2,166	1,734	1,410	1,162	968	816	694	595	514	447	391	
		Total Load	L/240	4,234	3,459	2,874	2,423	2,068	1,784	1,552	1,362	1,203	1,070	956	859	775	703	
	7	20	Live Load	L/360	2,449	1,998	1,575	1,239	992	807	665	554	467	397	340	294	256	224
				L/480	1,815	1,363	1,050	826	661	538	443	369	311	265	227	196	170	149
			Total Load	L/240	2,449	1,998	1,659	1,396	1,190	1,025	851	704	587	494	419	357	306	263
		22	Live Load	L/360	2,938	2,398	1,991	1,649	1,320	1,074	885	737	621	528	453	391	340	298
				L/480	2,416	1,815	1,398	1,099	880	716	590	492	414	352	302	261	227	199
			Total Load	L/240	2,938	2,398	1,991	1,677	1,430	1,232	1,071	938	790	666	565	483	415	359
24		Live Load	L/360	3,470	2,833	2,353	1,982	1,690	1,394	1,148	957	807	686	588	508	442	387	
			L/480	3,136	2,356	1,815	1,427	1,143	929	766	638	538	457	392	339	295	258	
		Total Load	L/240	3,470	2,833	2,353	1,982	1,690	1,457	1,267	1,110	980	870	742	635	547	473	
26		Live Load	L/360	4,043	3,301	2,742	2,311	1,971	1,699	1,460	1,217	1,026	872	748	646	562	492	
			L/480	3,987	2,996	2,307	1,815	1,453	1,181	973	812	684	581	498	431	374	328	
		Total Load	L/240	4,043	3,301	2,742	2,311	1,971	1,699	1,478	1,296	1,144	1,017	908	815	703	610	
28		Live Load	L/360	4,658	3,804	3,160	2,664	2,273	1,960	1,705	1,495	1,281	1,089	934	807	702	614	
			L/480	4,658	3,741	2,882	2,267	1,815	1,476	1,216	1,014	854	726	622	538	468	409	
		Total Load	L/240	4,658	3,804	3,160	2,664	2,273	1,960	1,705	1,495	1,321	1,174	1,049	942	850	770	
30		Live Load	L/360	5,313	4,340	3,606	3,040	2,595	2,238	1,947	1,708	1,509	1,339	1,148	992	863	755	
			L/480	5,313	4,340	3,545	2,788	2,232	1,815	1,495	1,247	1,050	893	766	661	575	503	
		Total Load	L/240	5,313	4,340	3,606	3,040	2,595	2,238	1,947	1,708	1,509	1,341	1,199	1,077	972	881	

Notes:

- (1) Applicable to dry-use service conditions.
- (2) Tabulated live load is based on the deflection criterion of either span/240 or span/360.
- (3) Tabulated total load is based on the deflection criterion of span/180.
- (4) Tabulated total load is in addition to the beam weight (assumed 36 pcf).
- (5) Selected beam size shall satisfy both live load and total load.



High Performance 2.1E IJC-Glulam

BigBeam Allowable Roof Loads (lb/ft) for Simple Span Applications (Load Duration Factor = 1.25)	Width (in)	Depth (in)	Load Condition	Span (feet)													
				20	22	24	26	28	30	32	34	36	38	40	42	44	46
				5 7/16	20	Live Load	L/360	2,115	1,589	1,224	962	771	627	516	430	363	308
L/480	1,410	1,059	816	642			514	418	344	287	242	206	176	152	132	116	
		Total Load	L/240	2,123	1,733	1,439	1,212	1,000	808	661	547	456	384	325	277	238	205
	22	Live Load	L/360	2,548	2,080	1,629	1,281	1,026	834	687	573	483	410	352	304	264	231
			L/480	1,876	1,410	1,086	854	684	556	458	382	322	274	235	203	176	154
		Total Load	L/240	2,548	2,080	1,728	1,456	1,242	1,070	886	734	614	517	439	375	323	279
	24	Live Load	L/360	3,008	2,457	2,041	1,663	1,332	1,083	892	744	627	533	457	395	343	300
			L/480	2,436	1,830	1,410	1,109	888	722	595	496	418	355	305	263	229	200
		Total Load	L/240	3,008	2,457	2,041	1,720	1,467	1,265	1,101	959	803	678	576	493	425	368
	26	Live Load	L/360	3,505	2,863	2,379	2,005	1,693	1,377	1,134	946	797	677	581	502	436	382
			L/480	3,097	2,327	1,792	1,410	1,129	918	756	630	531	452	387	334	291	255
		Total Load	L/240	3,505	2,863	2,379	2,005	1,711	1,476	1,284	1,126	995	868	739	634	546	474
	28	Live Load	L/360	4,038	3,298	2,741	2,311	1,973	1,701	1,417	1,181	995	846	725	627	545	477
			L/480	3,868	2,906	2,239	1,761	1,410	1,146	944	787	663	564	484	418	363	318
		Total Load	L/240	4,038	3,298	2,741	2,311	1,973	1,701	1,481	1,299	1,148	1,021	913	797	689	598
	30	Live Load	L/360	4,606	3,763	3,128	2,637	2,251	1,942	1,691	1,453	1,224	1,040	892	771	670	587
			L/480	4,606	3,575	2,753	2,166	1,734	1,410	1,162	968	816	694	595	514	447	391
		Total Load	L/240	4,606	3,763	3,128	2,637	2,251	1,942	1,691	1,484	1,311	1,166	1,043	938	846	741
	20	Live Load	L/360	2,664	2,045	1,575	1,239	992	807	665	554	467	397	340	294	256	224
			L/480	1,815	1,363	1,050	826	661	538	443	369	311	265	227	196	170	149
		Total Load	L/240	2,664	2,175	1,806	1,521	1,288	1,040	851	704	587	494	419	357	306	263
	22	Live Load	L/360	3,197	2,610	2,097	1,649	1,320	1,074	885	737	621	528	453	391	340	298
			L/480	2,416	1,815	1,398	1,099	880	716	590	492	414	352	302	261	227	199
		Total Load	L/240	3,197	2,610	2,168	1,826	1,558	1,342	1,141	945	790	666	565	483	415	359
	24	Live Load	L/360	3,775	3,083	2,561	2,141	1,714	1,394	1,148	957	807	686	588	508	442	387
			L/480	3,136	2,356	1,815	1,427	1,143	929	766	638	538	457	392	339	295	258
		Total Load	L/240	3,775	3,083	2,561	2,158	1,841	1,587	1,381	1,211	1,033	872	742	635	547	473
	26	Live Load	L/360	4,398	3,592	2,985	2,516	2,147	1,772	1,460	1,217	1,026	872	748	646	562	492
			L/480	3,987	2,996	2,307	1,815	1,453	1,181	973	812	684	581	498	431	374	328
		Total Load	L/240	4,398	3,592	2,985	2,516	2,147	1,851	1,611	1,413	1,248	1,109	951	816	703	610
	28	Live Load	L/360	5,067	4,139	3,440	2,900	2,475	2,134	1,824	1,520	1,281	1,089	934	807	702	614
			L/480	4,980	3,741	2,882	2,267	1,815	1,476	1,216	1,014	854	726	622	538	468	409
		Total Load	L/240	5,067	4,139	3,440	2,900	2,475	2,134	1,858	1,630	1,440	1,280	1,144	1,026	886	770
	30	Live Load	L/360	5,780	4,722	3,925	3,309	2,825	2,437	2,121	1,861	1,575	1,339	1,148	992	863	755
			L/480	5,780	4,602	3,545	2,788	2,232	1,815	1,495	1,247	1,050	893	766	661	575	503
		Total Load	L/240	5,780	4,722	3,925	3,309	2,825	2,437	2,121	1,861	1,645	1,463	1,308	1,175	1,061	954
	7	Live Load	L/360	2,664	2,045	1,575	1,239	992	807	665	554	467	397	340	294	256	224
			L/480	1,815	1,363	1,050	826	661	538	443	369	311	265	227	196	170	149
		Total Load	L/240	2,664	2,175	1,806	1,521	1,288	1,040	851	704	587	494	419	357	306	263

Notes:

- (1) Applicable to dry-use service conditions.
- (2) Tabulated live load is based on the deflection criterion of either span/240 or span/360.
- (3) Tabulated total load is based on the deflection criterion of span/180.
- (4) Tabulated total load is in addition to the beam weight (assumed 36 pcf).
- (5) Selected beam size shall satisfy both live load and total load.