

POWER BEAM® DESIGN PROPERTIES

Flexural Stress	Modulus of Elasticity	Horizontal Stress	Compression Perp
F_b	E	F_v	F_{cperp}
3000 psi	2,100,000 psi	300 psi	805 psi

POWER BEAM® SECTION PROPERTIES AND ALLOWABLE CAPACITIES

3-1/2" BEAM WIDTH								
Depth	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"
Weight [lbs/ft.]	7.0	9.0	9.2	10.9	11.6	13.6	15.6	17.5
C_{vdb} Factor (L=21')	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Moment of Inertia I [in ⁴]	111	231	250	415	489	800	1195	1701
Moment Capacity M [ft-lbs]	7665	12478	13161	18457	20582	28583	37333	47193
Shear Capacity [Lbs]	5075	6475	6650	7875	8316	9800	11200	12600
5-1/2" BEAM WIDTH								
Depth	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"
Weight [lbs/ft.]	11.1	14.1	14.5	17.2	18.2	21.4	24.4	27.5
C_{vdb} Factor (L=21')	1.00	1.00	1.00	1.00	0.989	0.989	0.982	0.976
Moment of Inertia I [in ⁴]	175	363	393	653	768	1258	1877	2673
Moment Capacity M [ft-lbs]	12046	19608	20682	29003	32246	44415	57625	72503
Shear Capacity [Lbs]	7975	10175	10450	12375	13068	15400	17600	19800
7" BEAM WIDTH								
Depth	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"
Weight [lbs/ft.]	14.1	18.0	18.5	21.9	23.1	27.2	31.1	35.0
C_{vdb} Factor (L=21')	1.00	1.00	1.00	0.988	0.985	0.977	.970	0.965
Moment of Inertia I [in ⁴]	222	462	500	831	978	1601	2389	3402
Moment Capacity M [ft-lbs]	15331	24956	26323	36471	40512	55852	72427	91192
Shear Capacity [Lbs]	10150	12950	13300	15750	16632	19600	22400	25200

Flexural stress F_v shall be modified by Volume Factor, C_v , as outlined in ICC ESR-1940, APA Product Report-L263 and APA-EWS Y117 where :

$C_v = K_L \times [(21/L)^{0.05} \times (12/d)^{0.05} \times (5.125/b)^{0.05}] \leq 1.0$ where:
 K_L = loading coefficient (1.0 for uniformly distributed)
L = length of bending member between points of zero moment, ft.
d = depth of bending member, in.
b = width of bending member, in.

Width and depth portions of Volume Factor, C_v , are incorporated into tabulated Moment C_{vdb} Factor.

Note: Allowable design properties and load capacities are based on a load duration of 100 percent and dry use conditions.

POWER SIZER® SOFTWARE

7" width Power Beam® with the new enhanced 3000F_b design values is now available in iStruct® branded Power Sizer® software suite. If you are using iStruct® for your single member sizing (iDesign®), floor design and roof framing plans (iPlan®), simply go to the CSD Portal and download the latest version. If you aren't using iStruct®, go to our website <https://www.anthonyforest.com/sizing-software.shtml> and download a copy at no charge. All Power Products® including Power Beam®, Power Preserved Glulam®, Power Column® and Power Rated Glulam® are supported in the iStruct® software suite.



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BUILD STRONG WITH POWER BEAM®

BETTER, FASTER, STRONGER



CHECK OUT OUR NEW STRONGER BENDING VALUE FOR 7" POWER BEAM®

POWER BEAM® FEATURES

- Strongest engineered wood product on the market
- Design values 3000F_b-300F_v-2.1E
- Wide width for faster installation – 3 1/2", 5 1/2", and 7"
- Compliment to Mass Timber wood framing systems
- Sustainable Forestry Initiative (SFI®) Certified
- Excellent fire resistance
- Manufactured with superior strength southern yellow pine MSR Lumber
- Cost-efficient, high-strength solution for load-bearing structural applications



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BEAM COMPARISON

ALLOWABLE UNIFORM LOAD CAPACITY PLF

Product		Design Value				DEPTH															
						11-7/8"				14"				16"				18"			
		E _{TRUE} x10 ⁶ psi	E _{APPARENT} x10 ⁶ psi	F _b psi	F _v psi	SPAN															
						10'	12'	14'	16'-6"	12'	14'	16'-6"	18'-6"	14'	16'-6"	18'-6"	20'	16'-6"	18'-6"	20'	22'
3-1/2" WIDTH	Power Beam®	2.2	2.1	3000	300	1633/1520	1130/879	819/554	498/340	1574/1441	1153/907	812/558	578/395	1508/1354	1084/832	852/589	681/465	1375/1184	1090/839	928/662	728/497
	SCL 2 ply	2.1	2.0	3100	290	1517/1447	1172/837	781/527	480/326	1484/1372	1170/864	791/536	556/379	1446/1290	1085/799	834/565	650/442	1345/1138	1075/805	912/630	694/473
	SCL 1 ply	2.0	1.9	2900	290	1514/1257	1092/758	721/489	444/305	1480/1198	1093/780	720/490	514/352	1386/1131	1009/716	759/517	603/414	1173/995	1000/722	850/579	642/441
	SCL 2 ply	2.0	1.9	2900	285	1250/1250	1040/758	722/488	446/304	1226/1198	1048/780	720/490	514/352	1198/1132	1000/716	760/516	604/414	1142/994	988/722	844/578	644/440
	SCL 2 ply	2.0	1.9	2600	285	1415/1257	979/758	716/489	445/305	1333/1198	975/780	698/490	515/352	1253/1132	897/716	710/517	604/414	1120/995	887/722	756/579	622/441
	SCL 1 ply	1.55	1.50	2325	310	1263/974	868/587	556/379	341/236	1198/928	876/605	554/379	395/273	1132/877	810/555	584/401	463/320	NA	NA	NA	NA
5-1/2" WIDTH	Power Beam®	2.2	2.1	3000	300	2567/2388	1777/1382	1287/870	783/534	2474/2264	1812/1833	1278/875	910/620	2371/2128	1694/1307	1331/926	1071/730	2135/1861	1682/1319	1427/1040	1144/781
	SCL 3 ply (5-1/4")	2.1	2.0	3100	290	2276/2171	1758/1256	1171/791	720/490	2225/2058	1755/1296	1187/803	835/568	2169/1935	1628/1199	1252/848	975/664	2018/1708	1613/1208	1369/945	1041/710
	SCL 1 ply (5-1/4")	2.0	1.9	2900	290	2271/1886	1639/1137	1082/734	667/457	2220/1797	1639/1171	1080/735	771/529	2079/1698	1514/1074	1138/776	905/621	1760/1493	1501/1084	1275/869	964/662
	SCL 3 ply (5-1/4")	2.0	1.9	2900	285	1875/1875	1560/1137	1083/732	669/456	1839/1797	1572/1170	1080/735	771/528	1797/1698	1500/1074	1140/774	906/621	1713/1491	1482/1083	1266/867	966/660
	SCL 3 ply (5-1/4")	2.0	1.9	2600	285	2123/1886	1469/1137	1074/734	668/457	2000/1797	1463/1171	1047/735	772/529	1880/1698	1346/1074	1066/776	907/621	1680/1493	1331/1084	1135/869	933/662
	SCL 1 or 2 ply	1.55	1.50	2325	310	1894/1462	1302/881	834/569	512/354	1797/1393	1314/907	831/569	592/410	1698/1316	1215/832	876/601	695/481	NA	NA	NA	NA
7" WIDTH	Power Beam®	2.2	2.1	3000	300	3266/3035	2261/1756	1637/1106	997/679	3150/2882	2300/1815	1619/1115	1159/790	2988/2709	2131/1664	1678/1179	1364/929	2686/2369	2116/1679	1795/1323	1458/994
	SCL 4 ply	2.1	2.0	3100	290	3034/2894	2343/1675	1561/1055	960/654	2967/2745	2341/1728	1582/1071	1112/758	2892/2580	2171/1599	1669/1131	1299/885	2690/2277	2151/1611	1825/1260	1388/947
	SCL 1 ply	2.0	1.9	2900	290	3029/2515	2185/1516	1443/979	889/610	2960/2396	2186/1561	1440/980	1028/705	2773/2264	2019/1432	1518/1035	1207/828	2346/1991	2001/1445	1700/1159	1285/883
	SCL 4 ply	2.0	1.9	2900	285	2500/2500	2080/1516	1444/976	892/608	2452/2396	2096/1560	1440/980	1028/704	2396/2264	2000/1432	1520/1032	1208/828	2284/1988	1976/1444	1688/1156	1288/880
	SCL 4 ply	2.0	1.9	2600	285	2830/2514	1958/1516	1432/978	890/610	2666/2396	1950/1560	1396/980	1030/704	2506/2264	1794/1432	1420/1034	1208/828	2240/1990	1774/1444	1512/1158	1244/882
	SCL 2 ply	1.55	1.50	2325	310	2526/1948	1736/1174	1112/758	682/472	2396/1856	1752/1210	1108/758	790/546	2264/1754	1620/1110	1168/802	926/640	NA	NA	NA	NA

Notes:

- Floor TL/LL (Load Duration= 1.0)
- Table is based on on simple span only condition with uniform loading
- L/360 LL Deflection Limit; L/240 TL Deflection Limit
- For Comparison Purposes Only
- Beam Weight included in Total Load
- SCL=Structural Composite Lumber (includes laminated veneer lumber, parallel strand lumber, laminated strand lumber and oriented strand lumber)
- Dry use only