

**Structural Glued Laminated Timber**

**FLOOR BEAMS  
FLOOR LIVE LOAD**

**F<sub>b</sub> F<sub>v</sub> E C<sub>D</sub> Deflection limit**  
**2400 240 1.8 1.00 Span / 360**  
**psi psi million for LIVE LOAD**

Simple Span Beams  
For Preliminary Design Purposes  
Lamination thickness: 1.500 in.

FLOOR LOAD FACTOR = 0.80

Table with columns: BEAM SIZE (Width, Depth, WEIGHT), BEAM CAPACITY, UNIFORM LOAD w, plf (SPAN, ft 8-24). The table lists various beam sizes (e.g., 3 1/8, 5 1/8, 6 3/4) and their corresponding load capacities across different spans.

TABLE SPECIFICATIONS: This table applies to straight, simply supported glued laminated timber beams under dry conditions of use. Beams must be laterally supported at the top along the length of the beam and at the top and bottom at the ends. The load carrying capacities tabulated are for total load including the weight of the member. BEAM WEIGHT: 35.0 pounds per cubic foot was used to determine beam weight per lineal foot shown in the table. DESIGN VALUE MODIFICATIONS: The allowable stress in bending, F<sub>b</sub>, has been adjusted by the AITC volume factor, CV. For determination of load carrying capacities governed by shear, loads within a distance "d" (the depth of the beam) from the ends have been neglected. DEFLECTION LIMITS: For floor beams, deflection is limited to span/360 for live load. Live load of 80% of total load is used. CONTROLLING VALUES: Values marked with a D are controlled by deflection, B are bending controlled, and S are shear controlled. SPAN: Span is defined as the length from centerline to centerline of bearing. This span is the length used in standard engineering equations to calculate deflection, bending and shear. \* The values have been limited to reasonable capacities. Engineering calculations may allow for greater capacities. Feb-2001

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TABLE DF-27

DOUGLAS FIR - LARCH

THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION

Structural Glued Laminated Timber

FLOOR BEAMS

FLOOR LIVE LOAD

F<sub>b</sub> 2400 psi  
 F<sub>v</sub> 240 psi  
 E 1.8 million psi  
 C<sub>D</sub> 1.00  
 Deflection limit Span / 360 for LIVE LOAD

Simple Span Beams  
 For Preliminary Design Purposes  
 Lamination thickness: 1.500 in.

FLOOR LOAD FACTOR = 0.80

BEAM SIZE		BEAM WEIGHT	BEAM CAPACITY, UNIFORM LOAD w, plf																
Width b, in.	Depth d, in.	plf	SPAN, ft																
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
3 1/8	6	4.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3 1/8	7 1/2	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3 1/8	9	6.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3 1/8	10 1/2	8.0	64 D	57 D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3 1/8	12	9.1	96 D	85 D	76 D	68 D	62 D	56 D	--	--	--	--	--	--	--	--	--	--	
3 1/8	13 1/2	10.3	137 D	122 D	109 D	97 D	88 D	79 D	72 D	65 D	59 D	--	--	--	--	--	--	--	
3 1/8	15	11.4	187 D	167 D	149 D	133 D	120 D	109 D	98 D	89 D	82 D	75 D	68 D	63 D	58 D	--	--	--	
3 1/8	16 1/2	12.5	250 D	222 D	198 D	178 D	160 D	144 D	131 D	119 D	109 D	99 D	91 D	84 D	77 D	71 D	66 D	61 D	
3 1/8	18	13.7	324 D	288 D	257 D	231 D	208 D	187 D	170 D	154 D	141 D	129 D	118 D	109 D	100 D	92 D	85 D	79 D	
3 1/8	19 1/2	14.8	412 D	366 D	327 D	293 D	264 D	238 D	216 D	196 D	179 D	164 D	150 D	138 D	127 D	117 D	109 D	101 D	
5 1/8	6	7.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5 1/8	7 1/2	9.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5 1/8	9	11.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5 1/8	10 1/2	13.1	105 D	94 D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5 1/8	12	14.9	157 D	140 D	125 D	112 D	101 D	91 D	--	--	--	--	--	--	--	--	--	--	
5 1/8	13 1/2	16.8	224 D	199 D	178 D	160 D	144 D	130 D	118 D	107 D	97 D	--	--	--	--	--	--	--	
5 1/8	15	18.7	307 D	273 D	244 D	219 D	197 D	178 D	161 D	147 D	134 D	122 D	112 D	103 D	95 D	--	--	--	
5 1/8	16 1/2	20.6	409 D	364 D	325 D	291 D	262 D	237 D	215 D	195 D	178 D	163 D	149 D	137 D	126 D	117 D	108 D	100 D	
5 1/8	18	22.4	531 D	472 D	422 D	378 D	340 D	307 D	279 D	253 D	231 D	211 D	194 D	178 D	164 D	151 D	140 D	130 D	
5 1/8	19 1/2	24.3	676 D	601 D	536 D	481 D	433 D	391 D	354 D	322 D	294 D	269 D	246 D	226 D	208 D	192 D	178 D	165 D	
5 1/8	21	26.2	844 D	750 D	670 D	601 D	541 D	488 D	443 D	402 D	367 D	335 D	307 D	283 D	260 D	240 D	222 D	206 D	
5 1/8	22 1/2	28.0	1022 B	923 D	824 D	739 D	665 D	601 D	544 D	495 D	451 D	413 D	378 D	348 D	320 D	296 D	273 D	253 D	
5 1/8	24	29.9	1155 B	1064 B	983 B	896 D	807 D	729 D	661 D	601 D	548 D	501 D	459 D	422 D	389 D	359 D	332 D	307 D	
5 1/8	25 1/2	31.8	1296 B	1193 B	1102 B	1021 B	949 B	874 D	792 D	720 D	657 D	601 D	551 D	506 D	466 D	430 D	398 D	369 D	
6 3/4	6	9.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6 3/4	7 1/2	12.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6 3/4	9	14.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6 3/4	10 1/2	17.2	139 D	123 D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6 3/4	12	19.7	207 D	184 D	165 D	148 D	133 D	120 D	--	--	--	--	--	--	--	--	--	--	
6 3/4	13 1/2	22.1	295 D	262 D	234 D	210 D	189 D	171 D	155 D	141 D	128 D	--	--	--	--	--	--	--	
6 3/4	15	24.6	405 D	360 D	321 D	288 D	259 D	234 D	212 D	193 D	176 D	161 D	148 D	136 D	125 D	--	--	--	
6 3/4	16 1/2	27.1	539 D	479 D	428 D	384 D	345 D	312 D	283 D	257 D	234 D	214 D	196 D	181 D	166 D	153 D	142 D	132 D	
6 3/4	18	29.5	700 D	622 D	556 D	498 D	448 D	405 D	367 D	334 D	304 D	278 D	255 D	234 D	216 D	199 D	184 D	171 D	
6 3/4	19 1/2	32.0	890 D	791 D	706 D	633 D	570 D	515 D	467 D	424 D	387 D	354 D	324 D	298 D	274 D	253 D	234 D	217 D	
6 3/4	21	34.5	1111 D	988 D	882 D	791 D	712 D	643 D	583 D	530 D	483 D	442 D	405 D	372 D	343 D	316 D	293 D	271 D	
6 3/4	22 1/2	36.9	1309 B	1205 B	1085 D	973 D	876 D	791 D	717 D	652 D	594 D	543 D	498 D	458 D	422 D	389 D	360 D	334 D	
6 3/4	24	39.4	1480 B	1363 B	1259 B	1166 B	1063 D	960 D	870 D	791 D	721 D	659 D	605 D	556 D	512 D	472 D	437 D	405 D	
6 3/4	25 1/2	41.8	1660 B	1529 B	1413 B	1309 B	1216 B	1132 B	1044 D	949 D	865 D	791 D	725 D	666 D	614 D	567 D	524 D	486 D	
6 3/4	27	44.3	1851 B	1705 B	1575 B	1459 B	1355 B	1262 B	1178 B	1102 B	1027 D	939 D	861 D	791 D	729 D	673 D	622 D	577 D	
6 3/4	28 1/2	46.8	2051 B	1889 B	1745 B	1617 B	1502 B	1399 B	1306 B	1221 B	1145 B	1075 B	1012 B	930 D	857 D	791 D	732 D	678 D	

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