Structural Beam Tables

2x6 & 2x8 LUMBER

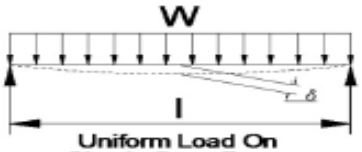
Temperature Adjustment Factors

Temperature	73°F	90°F	100°F	110°F	120°F
For Stress	1.248	1.000	0.878	0.77	0.676
For Deflection	1.334	1.000	0.844	0.712	0.601

Temperature Adjusted Modulus Of Elasticity (90°F) = 246,750 psi

Temperature Adjusted Modulus Of Rupture (90°F) = 3,280 psi

SIMPLE SPAN LOADING



Uniform Load On Simple Span Beam

2 X 6
2 X 8

UNIFORM LOAD / SHORT-TERM DEFLECTION

	Nominal Size	2x6	2-2x6	3-2x6	4-2x6	5-2x6	2x8	2-2x8	3-2x8	4-2x8	5-2x8
	Thickness (in.)	1.5	3	4.5	6	7.5	1.5	3	4.5	6	7.5
	Depth (in.)	5.5	5.5	5.5	5.5	5.5	7.5	7.5	7.5	7.5	7.5
	I(in^4)	20.8	41.6	62.4	83.2	104.0	52.7	105.5	158.2	210.9	263.7
	S(in^4)	7.56	15.13	22.69	30.25	37.81	14.06	28.13	42.19	56.25	70.31
		Allowable Uniform Load (Lbs. / Ft.)									
Span (Ft.)	3	282	563	845	1126	1408	714	1428	2142	2856	3570
	4	119	238	356	475	594	301	602	904	1205	1506
	5	61	122	182	243	304	154	308	463	617	771
	6	35	70	106	141	176	89	178	268	357	446
	7		44	66	89	111	56	112	169	225	281
	8			45	59	74	38	75	113	151	188
	9			31	42	52		53	79	106	132
	10				30	38		39	58	77	96
	11								43	58	72
	12								33	45	56
	13									35	44
	14										35

SIMPLE SPAN

NOTES:

1. Designers are cautioned to become familiar with this table's limitations and apply the values appropriately. Loads are assumed to be uniformly applied to a simple span condition. Stress is limited to modulus of rupture/2.5, but will rarely control design.
2. The allowable load should be limited to reasonable deflection criteria. Both immediate deflection and long term effects (creep) should be considered. In this table immediate live load deflection is limited to the span/360. Also see long-term deflection table.
3. Effective E for immediate deflection calculations is the temperature adjusted ambient E found in accordance with ASTM 6109. Table is based on properties at 90°F to conform with ASTM D6662 and the proposed ASTM specification for structural grade plastic lumber. To find higher-temperature allowable loads, multiply table values by the deflection row adjustment values.
4. Example: Can (3)2X8 Trimax beams spanning 5'-0 support 8'-0 long joists on either side? Assume a 10 psf dead load and a 40 psf live load. Wdl=10*8=80 Lbs/Ft, Wll=40*8=320 Lbs/Ft. (Note: simple span condition used)

   Immediate deflection allowable live load (defl=L/360) = 463 Lbs/ft > 320 (O.K.)

   Some designers prefer to limit total load deflection to L/240. This value may be found by multiplying the immediate deflection value in the above table by 360/240 = 1.5. So, 1.5 * 463 = 694 Lbs/ft > 320 + 80 = 400 Lbs/ft. (O.K.)

   Stress rarely controls design. In this example, bending stress is compared to the allowable value at 90°F. Bending stress = 400 Lbs/ft (total load)*12*(5)²/8/S = 386 psi. Allowable stress = 3280/2.5 = 1312 psi.

   For common uses of Trimax Structural Lumber, immediate live load deflection will control member selection.

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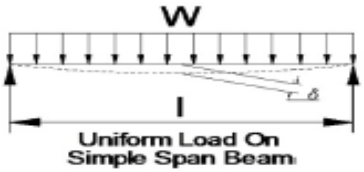
TRIMAX Structural

Structural Beam Tables

2x10 & 2x12 LUMBER

SIMPLE SPAN LOADING



2 X 10
2 X 12

UNIFORM LOAD / SHORT-TERM DEFLECTION

Temperature Adjustment Factors					
Temperature	73°F	90°F	100°F	110°F	120°F
For Stress	1.248	1.000	0.878	0.77	0.676
For Deflection	1.334	1.000	0.844	0.712	0.601
Temperature Adjusted Modulus Of Elasticity (90°F) =				246,750	psi
Temperature Adjusted Modulus Of Rupture (90°F) =				3,280	psi

	Nominal Size	2x10	2-2x10	3-2x10	4-2x10	5-2x10	2x12	2-2x12	3-2x12	4-2x12	5-2x12
	Thickness (in.)	1.5	3	4.5	6	7.5	1.5	3	4.5	6	7.5
	Depth (in.)	9.5	9.5	9.5	9.5	9.5	11.5	11.5	11.5	11.5	11.5
	I(in^4)	107.2	214.3	321.5	428.7	535.9	190.1	380.2	570.3	760.4	950.5
	S(in^4)	22.56	45.13	67.69	90.25	112.81	33.06	66.13	99.19	132.25	165.31
		Allowable Uniform Load (Lbs. / Ft.)									
Span (Ft.)	3	1451	2902	4353	5804	7255	2574	5148	7722	10296	12870
	4	612	1224	1836	2449	3061	1086	2172	3258	4343	5429
	5	313	627	940	1254	1567	556	1112	1668	2224	2780
	6	181	363	544	726	907	322	643	965	1287	1609
	7	114	228	343	457	571	203	405	608	810	1013
	8	77	153	230	306	383	136	271	407	543	679
	9	54	107	161	215	269	95	191	286	381	477
	10	39	78	118	157	196	69	139	208	278	347
	11		59	88	118	147	52	104	157	209	261
	12		45	68	91	113	40	80	121	161	201
	13		36	53	71	89	32	63	95	127	158
	14		36	53	71	89	32	63	95	127	158
	15			43	57	71		51	76	101	127
	16			35	46	58		41	62	82	103

SIMPLE SPAN

NOTES:

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