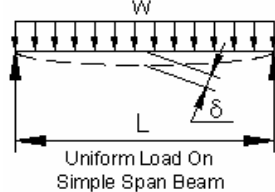


TRIMAX BUILDING PRODUCTS STRUCTURAL LUMBER BEAM SPAN TABLE											2 X 6		
UNIFORM LOAD IMMEDIATE DEFLECTION (SHORT-TERM) $\leq L/360$											2 X 8		
2 X 6 & 2 X 8 LUMBER						SIMPLE SPAN LOADING					UNIFORM LOAD / SHORT-TERM DEFLECTION		
Temperature Adjustment Factors												UNIFORM LOAD / SHORT-TERM DEFLECTION	
Temperature	73°F	90°F	100°F	110°F	120°F								
For Stress	1.248	1.000	0.878	0.770	0.676								
For Deflection	1.334	1.000	0.844	0.712	0.601								
Temperature Adjusted Modulus Of Elasticity (90°F) =					243,580								psi
Temperature Adjusted Modulus Of Rupture (90°F) =					2,323								psi
Nominal Size	2 X 6	(2) 2 X 6	(3) 2 X 6	(4) 2 X 6	(5) 2 X 6	2 X 8	(2) 2 X 8	(3) 2 X 8	(4) 2 X 8	(5) 2 X 8			UNIFORM LOAD / SHORT-TERM DEFLECTION
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	7.25	7.25	7.25	7.25	7.25			
I (in ⁴)	20.41	40.82	61.23	81.64	102.05	46.95	93.91	140.86	187.81	234.77			
S (in ⁴)	7.42	14.84	22.26	29.69	37.11	12.95	25.91	38.86	51.81	64.76			
Allowable Uniform Load (pounds / foot)													
SPAN (ft)	3	273	546	818	1091	1364	628	1255	1883	2510	3138		
	4	115	230	345	460	575	265	529	794	1059	1324		
	5	59	118	177	236	295	136	271	407	542	678		
	6		68	102	136	170	78	157	235	314	392		
	7			64	86	107		99	148	198	247		
	8				58	72		66	99	132	165		
	9					51			70	93	116		
	10								51	68	85		
	11									51	64		
	12												
	13												
14											SIMPLE SPAN		

Notes:

- 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.
- 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.
- 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.
- 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. $W_{dl} = 10 * 8 = 80 \text{ \#/ft}$, $W_{ll} = 40 * 8 = 320 \text{ \#/ft}$. (Note: simple span condition used)
 Immediate deflection allowable live load ($defl=L/360$) = $407 \text{ \#/ft} > 320$ 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, $1.5 * 407 = 611 \text{ \#/ft} > 320 + 80 = 400 \text{ \#/ft}$. O.K.
 Stress rarely controls design. In this example, bending stress is compared to the allowable value at 90°F. Bending stress = 400 \#/ft (total load) * $12 * (5)^2/8/S = 386 \text{ psi}$. Allowable stress = $2323/2.5 = 929 \text{ psi}$.
 For common uses of Trimax, immediate live load deflection will control member selection.

TRIMAX BUILDING PRODUCTS STRUCTURAL LUMBER BEAM SPAN TABLE											2 X 10	
UNIFORM LOAD IMMEDIATE DEFLECTION (SHORT-TERM) $\leq L/360$											2 X 12	
<u>2 X 10 & 2 X 12 LUMBER</u>						<u>SIMPLE SPAN LOADING</u>					UNIFORM LOAD / SHORT-TERM DEFLECTION	
Temperature Adjustment Factors						<p style="text-align: center;">Uniform Load On Simple Span Beam</p>						
Temperature	73°F	90°F	100°F	110°F	120°F							
For Stress	1.248	1.000	0.878	0.770	0.676							
For Deflection	1.334	1.000	0.844	0.712	0.601							
Temperature Adjusted Modulus Of Elasticity (90°F) =	243,580				psi							
Temperature Adjusted Modulus Of Rupture (90°F) =	2,323				psi							
Nominal Size	2 X 10	(2)2 X 10	(3)2 X 10	(4)2 X 10	(5)2 X 10	2 X 12	(2)2 X 12	(3)2 X 12	(4)2 X 12	(5)2 X 12		
Thickness (in)	1.5	3	4.5	6	7.5	1.5	3	4.5	6	7.5		
Depth (in)	9.25	9.25	9.25	9.25	9.25	11.25	11.25	11.25	11.25	11.25		
I (in ⁴)	97.81	195.63	293.44	391.25	489.07	176.32	352.63	528.95	705.27	881.58		
S (in ⁴)	21.15	42.30	63.45	84.60	105.74	31.35	62.69	94.04	125.38	156.73		
Allowable Uniform Load (pounds / foot)												
SPAN (ft)	3	1307	2615	3922	5229	6536	2158	4315	6473	8630		10788
	4	552	1103	1655	2206	2758	994	1988	2982	3977	4971	
	5	282	565	847	1130	1412	509	1018	1527	2036	2545	
	6	163	327	490	654	817	295	589	884	1178	1473	
	7	103	206	309	412	515	185	371	556	742	927	
	8	69	138	207	276	345	124	249	373	497	621	
	9		97	145	194	242	87	175	262	349	436	
	10		71	106	141	176	64	127	191	255	318	
	11		53	80	106	133		96	143	191	239	
	12			61	82	102		74	110	147	184	
				64	80		58	87	116	145		
14				51	64			70	93	116		
											SIMPLE SPAN	

Notes:

- 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.
- 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.
- 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 (2) 2X10 Trimax beams spanning 6'-0 support 8'-0 long joists on either side? Assume a 10 psf dead load and a 40 psf live load. $W_{dl} = 10 * 8 = 80 \text{ \#/ft}$, $W_{ll} = 40 * 8 = 320 \text{ \#/ft}$.

Immediate deflection allowable live load ($defl=L/360$) = 327 #/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, $1.5 * 327 = 490 \text{ \#/ft} > 320 + 80 = 400 \text{ \#/ft}$. O.K.

Stress rarely controls design. In this example, bending stress is compared to the allowable value at 90°F. Bending stress = 400 #/ft (total load) * $12 * (6)^2/8/(S) = 511 \text{ psi}$. Allowable stress = $2323/2.5 = 929 \text{ psi}$.

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

Revised 2/1/2006